STRATEGIES AND EXPERIENCES IN FOOD BANKS, FOOD INSECURITY, AND HEALTH: A MIXED-METHODS INVESTIGATION

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Abstract

Food insecurity is a prevalent and persistent issue that affects communities across Canada. Food banks are currently one of the most common responses to food insecurity in the country. Since they emerged in the 1980s, food banks have proliferated across Canada and the number of people accessing them has risen steeply. While food banks have faced criticisms in their capacity to address food insecurity, there have been shifts in how they operate over recent years. There are a growing number of examples of food banks that changed the types of food that they distribute and the programs and services that they offer on location. However, there is little evidence to explore the impact of shifting food bank operations. In a series of three studies, this dissertation explored operational characteristics and strategies of food banks, experiences with accessing food banks, and associations between food bank access and food insecurity, as well as related dietary and health outcomes.

The first study employed a qualitative methodology to examine staff and volunteer perspectives on the strategies that food banks have adopted and adapted to address the needs of the people that they serve and the factors that enable or impede change. The findings illustrate current food banking practices and revealed examples of how food bank operations have changed over recent years to endeavor to better address the needs of the people who access their services. Moreover, the results illuminate food bank efforts to raise awareness and advocate for policy change to better address issues of poverty and food insecurity.

The second study used qualitative data collected at two time points, six months apart, to explore experiences of food insecurity and food bank access among people who access them. While there was variation in the social and emotional experiences of accessing food banks, a

common theme of long-term and regular access due to constrained financial resources arose in the data.

The third study was a quantitative investigation of the associations between the operational characteristics of food banks and changes in food insecurity, diet, and health over a six month period. Results indicated that accessing a food bank that employed a choice model of food distribution was significantly associated with increased fruit and vegetable consumption over the study period. Accessing a food bank integrated within a community resource centre was significantly associated with reporting less severe food insecurity at six months compared to baseline.

The findings presented in this dissertation offer novel evidence to elucidate the shifting operations of food banks and the associations between food banking operational characteristics and food insecurity over time. Moreover, these findings may inform decisions to change or adapt food banking operations to better address the needs of the people and communities served. Food banks, though they do not address the root causes of food insecurity, are established community resources, and thus, serve as strategic access points for not only short-term food assistance but also for connecting people with services and advocating for food security and poverty reduction.

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Statement of Co-Authorship

This document includes three studies that included contributions from my dissertation supervisor, Dr. Elizabeth Kristjansson. Two studies included contributions from other colleagues. As the first author of the three studies, I conceived of and designed the studies, conducted the literature reviews, led data collection, led and conducted qualitative data analyses and interpretations (studies 1 and 2), conducted the quantitative data analyses and interpretation (study 3), and wrote the three papers. Chantal Raillard is listed as the second author on the first study included in this dissertation, she provided assistance in coding and analyzing qualitative data and reviewed the final version of the paper. Anita Rizvi and Stéphanie Quinn appear as the second and third authors for the second study as they provided assistance in coding and analyzing qualitative data and reviewed the final version of the paper. Dr. Kristjansson appears as the last author for all three studies to reflect her contributions that included providing insight into the design and analyses of the studies and critically reviewing the final drafts of the papers.

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Chapter 1: General Introduction

General Introduction

Food security is an important social determinant of health and a basic human right. Yet, as of 2018, 820 million people around the world were denied that right (FAO, IFAD, UNICEF, WFP & WHO, 2019). Between 2017 and 2018 in Canada, approximately 4.4 million people were food insecure and faced limited or uncertain access to food (Tarasuk & Mitchell, 2020). Responses to food insecurity in Canada have largely fallen to the charitable sector (Riches & Silvasti, 2014). Food banks, once intended to be a temporary solution, have become entrenched in our society and are often one of the only community resources available to offer assistance to families who experience food insecurity. While these resources may offer short-term relief, there is growing recognition that many people may rely on them on a chronic basis in an effort to meet their basic needs (Black & Seto, 2018; Holmes et al., 2018). However, there is little evidence to illuminate experiences of longer-term food insecurity and food bank access.

Critiques of charitable food assistance programs have emphasized the operational limitations and the constrained capacity of these resources to address long-term food insecurity (McIntyre et al., 2016). In response to criticism, there have been a growing number of food banks that have shifted in how they operate in order to better address the needs of the people whom they serve (e.g., Dodd & Nelson, 2018; Greater Vancouver Food Bank, 2016; Wakefield et al., 2013). Examples of shifting food bank operations have proliferated, but evidence has largely been limited to descriptive and cross-sectional studies (Collins, Power, & Little, 2014). Thus, there is a dearth of evidence on experiences in food banking and food insecurity over time, particularly in the current context of evolving food bank operational practices. Through a series of three studies, the present dissertation aims to contribute to this gap in the literature through the

examination of (1) perspectives on current strategies and operational characteristics of food banks within Ottawa, Ontario, (2) experiences of food bank access over time, and (3) the impact of distinct characteristics on changes in food insecurity, diet, and health over a six month period among people who access these resources. The purpose of this introductory chapter is to provide an overview of the issue of food insecurity, including associated outcomes, and food banking in Canada.

Conceptualizing and Measuring Food Insecurity

Food security exists when "all people, at all time, 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" (World Food Summit, 1996, para. 12). This definition can be applied to the supply and availability of food at the global, national, community, or household level (Pinstrup-Andersen, 2009). On the other hand, while there is no agreed-upon definition of food insecurity, this concept generally refers to the "limited or uncertain ability to acquire acceptable foods in socially acceptable ways" (Bickel et al., 2000, pg. 6). Limited food supply and inadequate availability are urgent global issues, particularly within developing nations, and may involve hunger. Hunger is an "uneasy or painful sensation caused by a lack of food" and can range from shorter-term experiences of discomfort to chronic and life-threatening undernourishment (Bickel et al., 2000, pg. 6). Hunger is not a necessary outcome but can be a consequence of food insecurity. This is a global issue that impacts a higher proportion of the population in several developing nations and is a distinct occurrence from food insecurity (FAO, 2019).

Food insecurity and hunger disproportionately affect developing nations and should be distinguished from food insecurity in first world countries (Riches & Silvasti, 2014). In most

regions of North America, food supply and availability has rarely been problematic and has more often been described as abundant. However, despite the plentiful food supply and low prevalence of hunger, issues of access to sufficient and/or nutritious food impact approximately one in eight Canadian households (Habicht, Pelto, Frongillo, & Rose, 2004; Pinstrup-Andersen, 2009; Tarasuk & Mitchell, 2020).

In the North American context, food insecurity is most commonly conceptualized as an issue of access at the household level. Household food insecurity refers to having inadequate or uncertain access to a sufficient quantity of food and/or adequate quality and variety of foods due to financial constraints (Anderson, 1990; Bickel et al., 2000: Tarasuk & Mitchell, 2020). Riches and Silvasti (2014) conceptualized food insecurity in the first world as food poverty, as affected households "either lack the financial ability to put food on the table and/or do not always necessarily know how they will manage to provide for their families and themselves the next sufficient, nourishing, and culturally-acceptable meal for an active healthy life" (pg. 6). Food insecurity has been conceptualized as a continuum of experiences, ranging from food secure at one extreme of the continuum to marginally, moderately, and finally, severely food insecure at the opposite extreme. Food security in this context is defined as the complete absence of food insecurity, where a household has safe and appropriate access, and is not worried about access, to food of adequate quantity and quality to meet their needs (Morin, 2014).

Marginal food insecurity may involve experiences such as limiting food choices or worrying about running out of food due to financial constraints. Households that experience moderate food insecurity may have to limit the quantity or quality of their food. Severe food insecurity may involve missing meals or not eating for whole days due to constrained financial

resources (Tarasuk & Mitchell, 2020). Household food insecurity in developed nations may still include experiences of hunger among severe cases.

Measuring food insecurity. In line with the predominant conceptualization, food insecurity is most commonly measured at the household level in Canada. The Household Food Security Survey Module (HFSSM) is amongst the most common measures of household food insecurity. The HFSSM was developed in the United States in response to the National Nutrition Monitoring and Related Research Act of 1990 (Bickel et al., 2000). The measure was initially implemented in 1995 and has since been included on several national surveys in the United States and Canada. The HFSSM has been adapted for use in Canada and has been utilized on the Canadian Community Health Survey (CCHS) since 2004 and is a well-accepted standard for measuring food insecurity at the household level in North America (Bickel et al., 2000; Government of Canada, 2012). Total HFSSM scores may be used as a continuous measure that reflects the continuum of experiences or may be used to categorize households as either food secure or food insecure. Food insecurity may be experienced on a short-term or transitory basis as households face changing financial circumstances, whereas some households may experience food insecurity on a chronic basis (FAO, 2008).

Based on the most recent findings from the CCHS, which includes the HFSSM, approximately 12.7% of Canadian households experience some level of food insecurity (Tarasuk & Mitchell, 2020). The CCHS is a repeated cross-sectional survey designed to collect population-level health data from the provinces and territories (Government of Canada, 2012). The CCHS has included a food security module as part of the core survey content in the 2007/2008, 2011/2012, and 2017/2018 cycles. The food security module has also been included as optional content in the 2005, 2009/2010, and 2013/2014 cycles; thus, complete national data is

not available for these cycles as provinces and territories could opt out of the optional content. While national data is available for the most recent cycle (2017/2018) of the CCHS, it should be noted that the food insecurity estimate provided by the CCHS may be conservative as groups who are at an elevated risk of food insecurity, such as people who are homeless, people living in remote areas, or living on First Nations reserves were not represented in this survey (Tarasuk & Mitchell, 2020).

Conceptualizing risk factors for food insecurity. In line with how food insecurity is predominantly defined and measured in Canada, conceptualizations of what factors contribute to this issue have largely pertained to the household level. Within Campbell's (1991) conceptualization of food security, risk factors for food insecurity involve anything that limits resources available to a household or the proportion of resources available for food. Food can be one of the more flexible categories of a monthly budget and may be compromised to accommodate relatively fixed-cost basic needs, such as shelter, utilities, transportation, or medical costs, such as medication. Thus, there is potential for the cost of other basic needs to shrink the proportion of resources available for food and if there are no financial resources available after paying for other fixed-cost necessities, a household may be in urgent need of assistance. For example, higher housing costs have been associated with increased risk of food insecurity (Sriram & Tarasuk, 2016).

St-Germain and Tarasuk (2018) investigated the amounts and proportions of household resources allocated to basic needs by food security status using data from a population-based survey of households across the ten Canadian provinces. This study indicated that food insecure households allocated a higher proportion of their monthly budget to basic needs, including food and housing (St-Germain & Tarasuk, 2018). Thus, people who are food insecure prioritized

necessities, but overall constrained financial resources limit adequate access to basic household needs.

Factors that may limit a household's access to resources, according to Campbell's (1991) conceptualization of food security, may include a broad range of intersecting variables, such as those related to household income, cost of living, health, and access to employment, education, and social assistance. As food insecurity involves limited access to food due to financial constraints, it is not surprising that income is often posited as a risk factor or among some authors, as the primary root cause of food insecurity. The prevalence of food insecurity has been associated with household income, with lower prevalence observed among households with higher income (Loopstra & Tarasuk, 2013a; Tarasuk & Mitchell, 2020). Based on the 2017-2018 Canadian Community Health Survey, the highest observed prevalence of food insecurity was found among households in the lowest income decile (Tarasuk & Mitchell, 2020).

Rates of food insecurity tend to be elevated among groups affected by poverty. Households with children under 18 headed by a female lone-parent tend to display higher rates of food insecurity in Canada (Tarasuk & Mitchell, 2020). Food insecurity prevalence is particularly high (60.9%) among households that identified social assistance as a primary source of income. Increases in household income and obtaining employment have both been identified as predictors of improved food insecurity (Loopstra & Tarasuk, 2013a). However, obtaining employment as a primary source of income does not eliminate risk, as approximately 4% of working Canadian households report food insecurity (McIntyre, Bartoo, & Emery, 2014). Health may be another risk factor for food insecurity; however, as will be discussed below, the relationship between these two concepts may be bi-directional.

Dietary and Health Outcomes

Shifting focus from the definitions and risk factors for food insecurity to consequences, there is a considerable body of evidence on nutritional and health outcomes associated with this issue. In Campbell's (1991) conceptualization of food security, a framework that outlined potential consequences predicted by food insecurity was presented (Figure 1). This conceptual framework proposed that food insecurity impacts health and well-being via mechanisms related to nutrition. Empirical evidence has since been published to support the links between food insecurity, nutrition, and health.

Food insecurity is linked with consuming a lower quality diet and lower nutrient intake (Kirkpatrick & Tarasuk, 2009). People who are food insecure may be more likely to consume foods that are inexpensive, calorically dense, and low in nutrients. The prevalence of nutrient inadequacy is higher among adults in food insecure households. For example, compared to people who are food secure, people who are food insecure are more likely to have lower levels of vitamin A, thiamin, riboflavin, protein, folate, magnesium, zinc, and vitamins B-6 and B-12 (Kirkpatrick & Tarasuk, 2009).

Fruit and vegetable consumption tends to be low in food insecure households. The consumption of fruits and vegetables tends to decrease in frequency as the severity of food insecurity worsens (Holben, 2012; Kendall, Olson, & Frongillo, 1996). Among children, food insecurity is also linked with a diet lower in vegetables and higher in fat and sugar (Fram, Ritchie, Rosen, & Frongillo, 2015). Fruit and vegetable intake is a relevant and important outcome to examine as it has been identified as a valid indicator of overall diet quality (Garriguet, 2009). Low produce intake has been associated with increased risk of chronic disease (Afshin et al., 2019; Reddy & Katan, 2004).

Some authors have suggested that a diet primarily composed of calorically dense but low-nutrient foods may help to explain the paradoxical finding that food insecure populations are at an elevated risk of both lower nutrient intake and obesity (Cheug et al., 2015; Laraia, 2013). Women who are food insecure are at a higher risk of being overweight or obese compared to those who are food secure (Larson & Story, 2011); findings are mixed for men and children. There is longitudinal support for the link between food insecurity and greater increases in body mass index (BMI) over time in both men and women (Cheung et al., 2015).

Previous research has demonstrated the association between food insecurity and individual health behaviours. For example, food insecurity has been correlated with lower physical activity levels (To, Frongillo, Gallegos, & Moore, 2014). A study of children in grades four and five found that food insecure children engaged in less physical activity than those who were food secure; they also perceived greater barriers to physical activity (Fram et al., 2015). Moreover, food insecurity may impact how people adhere to medical recommendations and manage their chronic medical conditions. For example, a survey of people living with type 2 diabetes found that food insecurity was correlated with lower adherence to recommended self-care behaviours, such as recommended diets, physical activity, and medication adherence, which in turn are linked with worse glycemic control (Heerman et al., 2015).

People living with food insecurity may be at increased risk of poorer overall physical health and chronic disease risk factors (Ramsey, Giskes, Turrell, & Gallegos, 2011; Seligman, Laraia, & Kushel, 2010). Food insecurity has been associated with cardiovascular disease risk factors, such as hypertension and hyperlipidemia (Seligman et al., 2010). Moreover, compared to food secure samples, higher prevalence of certain chronic conditions, including diabetes and cardiovascular disease, have been noted in food insecure samples (Laraia, 2013; Stuff et al.,

2004). Among a population-based sample of adults in Ontario, Canada, one study found that food insecurity was associated with higher all-cause mortality rates, with particularly high rates among those reporting severe food insecurity (Gundersen et al., 2018).

In line with the findings linking food insecurity to poorer health, this issue has additionally been associated with higher health care costs. Food insecurity has been associated with higher healthcare utilization, including more emergency room visits and hospitalizations and these associations remain significant after accounting for pertinent sociodemographic factors (Berkowitz, Seligman, Meigs, & Basu, 2018). A study that examined data from a national (Canadian) survey linked with administrative health care data found that compared to food secure households, those that were food insecure had significantly higher health care costs. Annual health care costs rose in line with increasing food insecurity severity (Tarasuk et al., 2015).

In line with Campbell's (1991) framework of outcomes (Figure 1), household food insecurity has been identified as a risk factor for not only poorer physical health, but also self-reported mental health (Jones, 2017; Stuff et al., 2004; Yau, Adams, & White, 2018). Compared to food secure adults, the odds of reporting high stress levels are elevated among food insecure adults (Yau et al., 2018). People who experience food insecurity may also be more likely than those who are food secure to report symptoms of depression and anxiety (Elzein et al., 2017; Laraia, 2013; Leung et al., 2015; Pryor et al., 2016). Davison, Marshall-Fabien, and Tecson (2015) examined survey data collected from adults in three Canadian provinces and found that moderate and severe food insecurity was significantly associated with suicidal ideation. Moreover, Tarasuk and colleagues (2018) found that after adjusting for sociodemographic factors and prior access to mental health care services, the odds of mental health service

utilization were significantly higher among food insecure adults in Ontario, Canada compared to food secure adults.

The link between mental health and food insecurity has been found within specific populations and age groups. Food insecurity is a highly prevalent issue among children, with over 1.2 million children in Canada living in food insecure households (Tarasuk & Mitchell 2020). Children living in food insecure households are more likely to experience symptoms of depression and anxiety and are at an elevated risk of emotional problems compared to those living in food secure households (Belsky, 2010; Melchoir et al., 2012; Ramsey, 2011) Among children, food insecurity has also been associated with increased risk of hyperactivity or inattention (Melchoir et al., 2012) and poorer academic achievement (Faught et al., 2017; Jyoti, 2005; McLaughlin, 2012). Household food insecurity is linked with developmental risk among infants and toddlers (Rose-Jacobs et al., 2008). Furthermore, children living in food insecure households have higher odds of poor health (Alaimo, Olson, & Frongillo, 2001; Cook et al., 2004; Ryu & Bartfeld, 2012), anemia, and being hospitalized (Cook et al., 2004; Eicher-Miller et al., 2009; Gundersen & Kreider, 2009).

Age may interact with food security status, with stronger associations between experiences of food insecurity and poorer mental health (Jones, 2017). Food insecurity has been associated with negative impacts on self-reported mental health outcomes (Holben et al., 2007; Lee, Fischer, & Johnson, 2010) and cognitive function among older adults (Frith & Loprinzi, 2018). Among mothers and pregnant women, food insecurity has been linked with poorer mental health, including elevated perceived stress, anxiety, and depression (Ivers & Cullen, 2011; Laraia et al., 2006; Whitaker, Phillips, & Orzol, 2006). A qualitative study of women living in Nova Scotia, Canada found that experiences of food insecurity were characterized by stress, lack of

systemic supports, and feeling judged by other people in their communities, which was associated with feelings of shame and poorer self-worth (Williams et al., 2012).

Experiences of food insecurity have also been correlated with lower social support (Gichunge et al., 2015; Leung et al., 2015). Social support is "the social resources that persons perceive to be available or that are actually provided to them by non-professionals in the context of both formal support groups and informal helping relationships" (Cohen, Underwood, & Gottlieb, 2000, pg. 4) and may include structural (e.g., having a partner), instrumental (e.g., tangible help), and emotional (e.g., caring) support (Mitchell et al., 2003). Among a sample of older adults in the United States, people who were married or partnered had lower odds of food insecurity (Dean, Sharkey, & Johnson, 2011). In addition, Denney, Kimbro, Heck, and Cubbin (2017) found that lower perceived social cohesion of a neighbourhood was associated with higher odds of food insecurity, with the most pronounced association among groups of immigrant mothers.

There is a notable body of evidence to support the association between food insecurity and negative health outcomes; however, the directions of these relationships are not entirely clear. Tarasuk, Mitchell, McLaren, and McIntyre (2013) found that compared to adults with no chronic conditions, the odds of reporting food insecurity are higher among adults with one or more chronic physical or mental health conditions. The researchers found a significant relationship between the number of conditions and the odds of food insecurity and noted a particularly strong link between mood and anxiety disorders and food insecurity. In line with Campbell's (1991) conceptualization of food security, which suggested that health concerns can be a risk factor for food insecurity by limiting access to resources, the odds of food insecurity may be higher because chronic conditions can impact an individual's ability to work, health-

related demands may place strain on a household's resources, and/or individual's ability to cope with limited financial resources may be limited due to their ill-health (Tarasuk et al., 2013). The relationship may be bi-directional, as poor health may increase the risk of food insecurity and the experience of food insecurity has the potential to worsen factors that contribute to health. The associations with negative health outcomes highlight the importance of ameliorating food insecurity. In Canada, work to address food insecurity has primarily fallen to charitable food programs, with food banks of the most common responses.

The Emergence of Food Banks in Canada

In Canada, food banks were initially established in the 1980s as a resource for short-term relief of urgent food insecurity. These charitable resources were established during the economic recession of the 1980s to provide affected households with emergency food assistance in the form of grocery items to feed a household for a few days. For the purposes of this study, the term "food bank" has been used to refer to a not-for-profit agency that provides grocery items (usually uncooked or unprepared foods) directly to individuals who seek assistance (Bazerghi, McKay, & Dunn, 2016; Campbell et al., 2013; Tarasuk & Davis, 1996). While there are several terms in the literature to refer to comparable agencies (e.g., "food pantry" or "food cupboard"), the term "food bank" will be herein be used in this document. In addition to food banks, there are a variety of charitable programs that target food insecurity in Canada, such as programs that offer cooked meals directly to people seeking assistance and a range of community programs, such as community gardens, collective kitchens, and good food boxes (Loopstra & Tarasuk, 2013b). These programs may assist populations that may not seek assistance from food banks. For example, people who experience homelessness and do not have access to cooking and food

storage facilities would likely not access a food bank to obtain uncooked grocery items, but rather, would be more likely to access a meal program where they could obtain cooked, ready to eat food. Moreover, there is evidence to suggest that people who could benefit from community food security programs, such as collective kitchens or good food boxes (subsidized produce box programs that provide fresh fruits and vegetables to low-income communities), may not participate in them because they are not suited to their schedules, location, or needs (Loopstra & Tarasuk, 2013b). These programs should be distinguished from food banks, but will not be discussed in detail as they are outside of the scope of the present research.

In Canada, a national umbrella organization, Food Banks Canada, provides support to provincial networks of food banks, regional-level food banks, and individual food agencies (or community food banks). The exact number of food banks operating in Canada is unknown as not all food banks are affiliated with Food Banks Canada. However, it has been suggested that the majority of food distributed through food banks in Canada is through over 2,500 food agencies affiliated with Food Banks Canada (Food Banks Canada, 2019). Since emerging in the 1980s, the number of people who have visited a food bank has risen steeply. The Hunger Count, a national survey of food banks conducted by Food Banks Canada provides estimates of food bank usage and descriptive characteristics of people who have accessed a food bank. In March of 2019, there were 1,084,386 food bank visits made in Canada (Food Banks Canada, 2019). Food Banks Canada (2019) estimated that over five and a half million meals and snacks were served through their member agencies in one month in 2019.

Children represent roughly 20% of the Canadian population but represent approximately 34% of people who rely on food banks (Food Banks Canada, 2019). There is variation in the demographic and socioeconomic characteristics among people who access food banks. Working

adults also use food banks. However, people who report social assistance or disability-related supports as their primary income source are overrepresented (Food Banks Canada, 2019). Approximately one in six people who visited a food bank reported either current or recent employment. Single-parent households were another overrepresented group, representing just over 18% of people who rely on food banks (Food Banks Canada, 2019).

There is a dearth of longitudinal evidence to elucidate patterns of food bank usage over time. However, cross-sectional studies have demonstrated that there is likely a substantial number of households that visit food banks on a regular basis. More than two decades ago, cross-sectional surveys had noted how common it was for participants to access food banks on a longer-term basis, for example, a Canadian survey found the majority (72%) of people who accessed food banks had been using the resource for over a year (Tarasuk & Beaton, 1999). Another study conducted with people who access food banks in Canada found that 67% of those surveyed used these resources regularly on a weekly, bi-weekly, or monthly basis (Starkey, Kuhnlein, & Gray-Donald, 1998). More recently, Kicinski (2012) interviewed 104 people who visit food banks in Michigan and found just under 50% had been using food banks for over two years, and that 22% of the study sample reported using the food bank for over 10 years. A survey of people who access food banks in the United States found that roughly 63% of respondents rely on the food bank regularly to help meet their monthly household food needs (Feeding America, 2014). A mixed-methods study conducted in Vancouver, Canada indicated that the majority of participants, who were people who had visited Vancouver food banks, viewed food banks as a long-term resource and anticipated continued use in the future (Holmes et al., 2018).

One recent study examined long-term access to food banks using organizational food bank data collected between 1992 and 2017 that included at least two million visits made by over

116,900 people (Black & Seto, 2018). The authors found that although only 9% of individuals accessed food banks on an ongoing and long-term basis, they accounted for approximately 65% of all visits. Longer duration of access was associated with receiving income from disability benefits or pensions. Mobility and health challenges, larger household size, and older age were also related to longer duration and increased rate of food bank visits (Black & Seto, 2018). The few studies that have pointed to the chronic nature of food bank access contrasts the conceptualization of food banks as emergency food assistance for short-term food insecurity.

Food Banks and Food Insecurity

Food banks are undoubtedly responses to food insecurity, but the role of food banks in addressing food insecurity, particularly longer-term food insecurity, has been a source of controversy. As stated above, the original role of food banks was to address short-term and urgent experiences of household food insecurity and there is evidence to suggest that they may be effective in this role. Traditional food bank models have been associated with short-term improvements in household food security (Roncarolo, Bisset, & Potvin, 2016). However, there have been considerable criticisms of the capacity of food banks to address the needs of the people that they serve. McIntyre and colleagues (2016) reviewed and synthesized critiques of food banks and identified two main constructs that underpin the papers that they had reviewed. The first construct involved discussion of the operational challenges of food banks, which is discussed in the "operational challenges in food banking" section, and the second involved how these resources may serve to perpetuate inequity, which is subsequently discussed in the "addressing the root causes of food insecurity" section.

Operational challenges in food banking. Beginning with the first construct presented by McIntyre and colleagues (2016), critiques of operational challenges have often focused on the adequacy, stability, and efficiency of emergency food provision. These types of critiques often lead to recommendations to improve food banking operations (McIntyre et al., 2016). One line of criticism within this area has focused on the adequacy of the food offered at food banks. Food banks often have limited capacity to help people meet their dietary needs and provide food of sufficient quantity and quality. While the organization of these voluntary agencies can differ, they are typically dependent on solicited donations from public and private sources (Campbell et al., 2013; Tarasuk et al., 2014) and the instability and unpredictability of the food supply is a common operational challenge (McIntyre et al., 2016). Previous research has found that food banks are often unable to provide an adequate quantity of food and often need to implement access restrictions to manage their supply of food with the demand for services (Tarasuk et al., 2014).

Food banks may often be limited in their capacity to offer food assistance of sufficient variety and quality, particularly fruits, vegetables, and other fresh foods, to meet people's dietary needs (e.g., Gany et al., 2012; Tarasuk et al., 2014). In addition to dissatisfaction with the quantity of food received, people who have accessed food banks have provided accounts of receiving food that they perceived to be unhealthy, past the best before date, spoiled, or food that they would not normally eat, did not know how to prepare, or was inappropriate to the cultural or health-related dietary needs (e.g., Douglas et al., 2015; Garthwaite et al., 2015; Hamelin, Beaudry, & Habicht, 2002; Kratzmann, 2003). A study of low-income families in Toronto, Ontario found one reason food insecure households chose not to use a food bank was due to the perceived unsuitability of the food offered. In an open-ended survey item, participants explained

that the food is of low-quality (e.g., food banks offering “junk food” or spoiled food) and it would not be worthwhile to visit a food bank (Loopstra & Tarasuk, 2012).

A scoping review of the international literature on experiences and perceptions of accessing food banks described how social stigma was a common theme (Middleton, Mehta, McNaughton, & Booth, 2018). Experiences of shame or embarrassment have been associated with receiving food of low quality or that may otherwise be thrown away, including food that has spoiled or past the best before date (Loopstra & Tarasuk, 2012; van der Horst, Pascucci, & Bol, 2014). Visiting a food bank may be associated with negative perceptions and experiences of self-esteem and dignity (Hicks-Stratton, 2004). Some have described how people anticipate being judged and fear being seen at a food bank as they do not want to be stereotyped or stigmatized as a “food bank user” (Loopstra & Tarasuk, 2012). However, participants of some studies have discussed a sense of gratitude towards the food banks that they have visited and have explained how the food assistance received eased financial stress (Perry et al., 2014). Moreover, there is evidence that people have perceived their interactions with volunteers and staff as respectful and described the food bank as a program that facilitates social interactions and a sense of community (Garthwaite et al., 2015; Perry et al., 2014).

Anticipated embarrassment or shame may act as a barrier to accessing food assistance for people experiencing food insecurity (Purdam, Garratt, & Esmail, 2015). Some food insecure families do not access food banks because of poor experiences, viewing use as socially unacceptable, or anticipated feelings of degradation (Loopstra & Tarasuk, 2012). People in need of food assistance may experience further barriers such as access limitations due to their time available to visit during the hours of operation and to wait in long line-ups. Additionally, access to transportation and lack of information (e.g., people being unsure of how a food bank could

assist them or where their local food bank is located) may pose as barriers for some (Loopstra & Tarasuk, 2012; McIntyre et al. ,2016).

The barriers to accessing food banks may be further illuminated in the comparison between the characteristics of food insecure populations and the number of food bank visits in Canada. Loopstra and Tarasuk (2015) compared the 2011 data from the food security module of the CCHS and data on national food bank use published in the 2011 HungerCount report published by Food Banks Canada. They found there were over twice as many food insecure households than the estimated number of people living in households that accessed a food bank in Canada. Tarasuk, St-Germain, and Loopstra (2019) analyzed data collected in the 2008 Canadian Household Panel Survey Pilot, which included 1441 food secure and 152 food insecure households from four provinces, and found that only 21.1% of food insecure households had accessed a food bank. Food insecure households were more likely to use the following strategies to try to meet their food needs: seeking assistance from friends and family, missing a bill payment, seeking assistance from community organizations (excluding food banks), and missing a rent or mortgage payment (Tarasuk et al., 2019). However, this estimate may need to be interpreted with caution due to the small sample of food insecure (n = 152) households and even smaller sample of people who have accessed a food bank.

Households that do access food banks may represent just a fraction of the total food insecure population, but the people who access these resources may represent a more severely deprived population. Compared to the broader food insecure population, those who visited food banks reported significantly lower income adjusted for household size, more severe food insecurity, and were more likely to receive social assistance (excluding unemployment benefits) (Loopstra & Tarasuk, 2015; Tarasuk et al., 2019). Food insecure older adults and homeowners

were underrepresented amongst the population that visits food banks, while households with children were overrepresented (Loopstra & Tarasuk, 2015). However, some have suggested that the gap between the total food insecure population and the number of people who visit food banks emphasized the limitations of charitable food programs to address the full problem of food insecurity across the country and the issues that underpin it (Loopstra & Tarasuk, 2015; Tarasuk et al., 2019).

Addressing the root causes of food insecurity. The second construct presented in McIntyre and colleagues' (2016) synthesis of critiques concentrated on perpetuating inequity, which included criticisms of the effectiveness of food banks and of charity as a pervasive response to food insecurity. As mentioned above, food banks were originally intended to offer short-term relief and have been criticized for their limited potential to address long-term food insecurity and ameliorate the root causes of this issue in an effective way (Riches & Silvasti, 2014; Tarasuk et al., 2014). This introduction also provided an overview of the evidence that has suggested how many people may rely on food banks on a regular, long-term basis to meet their food needs. Despite the lack of longitudinal evidence, this small body of evidence points to the long-term needs that are going unaddressed and the systematic issues that underpin them.

There have been critiques that have suggested the continued operations and reliance on charitable food assistance programs may serve to perpetuate harms and inequities (McIntyre et al., 2016; Poppendieck, 1999). As responses to food insecurity have largely fallen to the charitable sector in Canada, food banks have become ubiquitous across the country. The number of food banks and the number of people seeking assistance has increased dramatically over the past four decades. Some authors argue that the widespread acceptance of charitable food assistance programs validates perspectives that food insecurity is a matter for charity and that

addressing this issue is therefore optional, and that this diminishes the perspective that people are entitled to adequate access to food. These arguments suggest that despite their good intentions, the persistence of charitable food programs may contribute to perpetuating the root causes of food insecurity because their societal acceptance is detrimental to public perceptions that food is a right and that there should be formal policies to ameliorate the causes of food insecurity (Poppendieck, 1999; Riches & Silvasti, 2014; Tarasuk et al., 2014). Without action to improve long-term food insecurity and the underlying causes, the demand for food assistance will persist and perpetuate the need for the charitable food system. However, it should be noted that while food banks continue to operate across the country, there has been some federal-level recognition and action pertinent to food insecurity and poverty in Canada.

The Food Policy for Canada, the first-ever national food policy, was announced in 2019. A national food policy may be a crucial opportunity to initiate national leadership and action to address food insecurity in Canada (Dachner & Tarasuk, 2018). The policy launched with a vision for the future of food that was stated as follows: “All people in Canada are able to access a sufficient amount of safe, nutritious, and culturally diverse food. Canada’s food system is resilient and innovative, sustains our environment and supports our economy.” (Government of Canada, 2019). The policy aims to increase the coordination and integration of food-related programs and policies and sets forth guiding principles, action areas, and priority outcomes of the actions initiated (Government of Canada, 2019). However, specific targets and outcomes of the policy are yet to be defined and measured. The success of the policy will likely be determined by how the actions set forth in the policy are funded and implemented as well as how targets are defined and measured. Ongoing evaluation will be needed to assess if and how the policy and the associated programs impact food insecurity across the country. While this policy

is a recent development and it is too early to speak to the impact of this work, it is a formal recognition of food insecurity and may offer an opportunity for coordinated action.

Authors who suggest the continued reliance on charitable food assistance serves to perpetuate inequities often go on to recommend that poverty reduction programs, including basic income guarantee programs, should be implemented to ameliorate food insecurity (McIntyre et al., 2016; Riches & Silvasti, 2014; Tarasuk et al., 2014). Evidence from provincial poverty reduction programs has provided support for the effectiveness of these approaches. In Newfoundland and Labrador, a multiyear poverty reduction strategy was initiated in 2006, which included a range of actions such as increasing the minimum wage and low-income tax reductions, improving access to affordable housing, and increasing social assistance payments. These actions were reflected in a notable decline in the provincial prevalence of food insecurity between 2007 and 2011, particularly among people who receive social assistance (Loopstra, Dachner, & Tarasuk, 2015). The province of Ontario implemented a basic income guarantee pilot project in 2018, which aimed to provide a minimum income to people in select communities for up to three years, regardless of their employment status (Ministry of Children, Community and Social Services, 2019). The pilot was soon after cancelled in 2019, following the election of a new government. Preliminary findings from the pilot demonstrated the positive influence of the program on participants' diet, health, and housing stability (Hamilton & Mulvale, 2019).

In regard to federal poverty reduction action, in August 2018, the Government of Canada released "Canada's First Poverty Reduction Strategy", which aimed to achieve a 50% reduction in poverty (relative to 2015 levels) by 2030. One of the aims of the strategy involves ensuring that the basic needs of Canadians are met, including access to healthy food. Progress

measurement will include tracking national levels of food insecurity. This strategy encompasses government investments in programs such as the Canada Child Benefit and the increase in the Guaranteed Income Supplement that begun in 2015 (Employment and Social Development Canada, 2018). Beginning in 2019, the Canada Workers Benefit supplements, by means of a tax credit, the earnings of low-income Canadians who are employed (Canada Revenue Agency, 2019). The federal government's recognition of food insecurity in the Poverty Reduction Strategy and the national food policy represents a notable step in working towards more formalized approaches to addressing this issue.

While food insecurity persists in Canada, the demand for food banks will likely remain high. As food banks remain essential for people across the country, these organizations have been shifting in their aim, strategies, and operations in response to the criticisms.

Evolving Approaches in Food Banking

The traditional model of food banking operates to provide an immediate, short-term supply of grocery items, which are typically pre-packed as a hamper by staff or volunteers, directly to the people seeking assistance. It should be noted that the term "alternative" has been used in previous literature to refer to food security programs. These programs are distinct from food banks and include interventions such as community kitchens and gardens, which aim to empower people through skill-building, social inclusion, and community building (Roncarolo et al., 2016a). A longitudinal study conducted in Montreal found that accessing food banks was associated with improved short-term food insecurity and perceived health (Roncarolo et al., 2016a). This longitudinal study also examined alternative food insecurity interventions and did not find significant improvements in food insecurity or health among people accessing these

interventions. However, people who accessed food banks were less satisfied with the quantity and variety of foods they accessed, perceived their diets as less healthy, and paid less attention to nutrition-related information (Roncarolo et al., 2016b). There is evidence from the United States that has noted improved dietary quality and variety after food bank visits, particularly among more people who accessed food banks on a more frequent basis (Liu et al., 2019; Wright et al., 2018).

Alternative interventions tend to reach a different population than traditional interventions. Roncarolo and colleagues (2015) found that people who accessed food banks reported higher rates of food insecurity, worse mental and physical health, lower income, lower education, and were less likely to be engaged in civic participation compared to people who accessed alternative food security programs. Therefore, the households that may benefit the most from alternative interventions could be less likely to access them. There are a growing number of cases of food banks extending beyond their traditional models and even integrating alternative food security programs into their existing services (e.g., Greater Vancouver Food Bank, 2016; Levkoe & Wakefield, 2011; Wakefield et al., 2013). Integrating additional programs into an existing food bank may facilitate greater access to targeted services among populations that would otherwise be less likely to participate.

Many food banks have built upon and extended beyond their traditional roles by shifting their aims, operations, and range of services offered. There is notable heterogeneity in the examples of food banks shifting from their traditional operations, which have largely been documented in case studies and grey literature reports. A report published by the Greater Vancouver Food Bank (2016) provided a scan of types of innovation integrated within North American food banks. The scan included a literature review and interviews with food bank

leaders from 19 organizations across North America. They found that many food banks had implemented strategic plans to change their practices in food distribution, including establishing nutrition guidelines, increasing healthy and fresh food access, reducing barriers to access, and sharing information about food skills and choice. Food banks have promoted a diversity of voices and involved people who access their services in the governance and decision-making processes. Community partnerships, advocacy work, novel communication strategies, and integrating a range of programs and services are examples of shifting practices that have emerged among many North American food banks. Some agencies have explored new ways of engaging their donors, fundraising for operating expenses, and addressing food purchasing or recovery. Finally, the report highlights the increased attention on collecting data to evaluate food bank programs and to support adapting different strategies to better meet the needs of the people served (Greater Vancouver Food Bank, 2016).

There have been numerous cases of food banks in North America that have implemented changes to improve the variety and quality of food offered at their agencies. These have included efforts to increase the quality and variety of foods offered, including fruits and vegetables, implementing nutritional policies, offering nutritional and cooking information to accompany the food offered, and changing how food is distributed (An et al., 2019; Caspi et al., 2016; Campbell et al., 2013; Wilson et al., 2017). Cooking and nutrition education workshops have been effectively integrated within food banks and participation has been associated with improved dietary outcomes (An et al., 2019; Caspi et al., 2016). A survey of food banks in the United States found that nutrition-focused policies and efforts to increase the availability of healthier food, including fresh fruits and vegetables, were increasingly common (Campbell et al., 2013). Providing foods that are appropriate to peoples' dietary needs and providing fresh fruits and

vegetables may be important factors in alleviating short-term food insecurity. A review of literature on the relationship between food bank access and food insecurity noted that it was important to identify and address ways to provide nutritious foods, including perishable foods that were appropriate to the dietary and cultural needs of the people who access their services (Bazerghi et al., 2016).

The choice model of food distribution is a pertinent example of how traditional practices have been shifting. The traditional model of distributing emergency food assistance at food banks involves offering food hampers that have been pre-packed by volunteers; in contrast, the choice model invites people who visit the food bank to walk around a food display area and choose the foods that they would like to take (e.g., Martin et al., 2013; Remley et al., 2013). When people are offered pre-packed food hampers, they may receive food that they do not prefer, do not know how to prepare, or food than does not meet their dietary needs (e.g., is inappropriate due to cultural or health-related needs). The choice model may reduce food waste and has been described as a preferable and more dignified method of food distribution compared to hampers (e.g., Remley et al., 2010; Remley et al., 2013).

A qualitative study of people who have accessed and people who have volunteered at a choice model food bank in Wisconsin (United States), described how people who visit the food bank walked around the food display area with a volunteer and the interactions that occurred during the visits facilitated a supportive environment (Jones, Ksobiech, & Maclin, 2019). This study found that the interactions between people visiting and volunteering at the choice-model food bank included several types of social supports, including emotional support (e.g., caring and trust), instrumental (e.g., practical support), informational (e.g., providing advice), and appraisal (e.g., expressions of affirmation) (Jones et al., 2019). The choice model may also be a way for

food banks to facilitate healthier diets. A randomized controlled trial at a food bank in New York (United States) found that prominently displaying healthier food options in a choice-model increased the proportion of healthy food that people selected (Wilson et al., 2017).

As the interconnections between food insecurity and health have been recognized, there has been emerging interest in the potential for food banks to serve as effective access points for health promotion and social programs (Wetherill, White, & Seligman, 2019). Leaders in food banking have been recognizing the food security and health needs of the people and communities that they serve and how these issues are interconnected. Moreover, there is increasing discussion of the potential for food banks to have a role in community health promotion and of the fact that some food banks have incorporated health into their mission (Wetherill et al., 2019).

Examples of food banks combining nutrition initiatives with other health promotion activities to better meet the needs of the people they serve have also emerged in the literature, including programs that use food banks as access points to target specific populations. For instance, a pilot intervention employed at several food banks in the United States was implemented in response to evidence on the adverse outcomes associated with people who live with both diabetes and food insecurity (Seligman et al., 2015). The program involved providing food appropriate for the diets of people with diabetes, referrals to primary care providers, self-management of diabetes support, and on-site blood sugar monitoring at food banks and found that glycemic control, medication adherence, and fruit and vegetable consumption improved among participants (Seligman et al., 2015).

In addition to the cases of food banks that have implemented targeted nutrition, food, or health programs, there have been cases that have integrated a range of coordinated services that strive to better meet the needs of the people served. Martin and colleagues (2013) conducted a

randomized controlled trial that compared a novel food bank model in Connecticut (Freshplace), which involved a multicomponent food and social service intervention, to a traditional one. Freshplace employed a choice-model of food distribution and aimed to provide people seeking assistance with access to fresh food, a range of programs facilitated onsite, including case management, cooking and skill-building workshops, and referrals to employment, education, and health services. The authors reported that after Freshplace participants were less likely than participants of traditional food banks to experience severe food insecurity (significant at nine months) and also had significantly increased fruit and vegetable intake.

The findings presented by Martin and colleagues (2013) led to the development of the "More Than Food Framework", which was used to replicate the Freshplace model in additional locations in the United States (Martin et al., 2019). The More Than Food Framework aims to build the capacity of food banks to address food security, health, and stability among the people who access their services and is based on three components: choice, connection, and culture. Choice involves offering a choice model of food distribution that offers and promotes a variety of healthy options; connection includes offering support and connections to community resources; culture is defined by an environment that respects individual dignity and where programs focused on building skills are facilities onsite. The More Than Food Framework was implemented in a replication of the Freshstart model in Texas and participation in the programs was significantly associated with improvements in food security, self-sufficiency, and diet quality (Martin et al., 2019).

Approaches that stem from the concept of community food security further exemplify the evolving nature of food bank-integrated programs and services. Hamm and Bellows (2003) defined community food security as " …a situation in which all community residents obtain a

safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximized community self-reliance and social justice" (pg. 37). Community food security approaches acknowledge the complex interactions between food security and broader economic and social issues (Kaiser, 2011). The concept of community food security has presented important theoretical issues and organizing frameworks for developing interventions that aim to address food system issues while contributing to community development. Examples of initiatives situated in a community food security framework include good food boxes, community kitchens, community gardens, and farmers markets in low-income areas. There have also been cases of traditional emergency food assistance that have incorporated community food security programs (Wakefield et al., 2013).

Levkoe and Wakefield (2011) described one example in Toronto, Ontario that began as a traditional food bank but integrated a community food security approach to create a community "hub" of food and social programs. This location continued to provide emergency food assistance, but incorporated a range of food, educational, capacity-building, and skill-building programs, such as educational workshops, community gardens, community kitchens, and civic engagement programs that involve people who access the services in community development and advocacy efforts (Levkoe & Wakefield, 2011). People who are involved with food assistance programs often possess first-hand knowledge of food insecurity and the underlying issues and engaging them in dialogues and advocacy efforts may present important opportunities for collaboration and work towards social change (Wakefield et al., 2013). These case studies of food bank programs and models provide useful examples, but there is considerable heterogeneity in the contexts in which these different programs and models embedded and also inconsistencies in how they have been described, implemented, and evaluated.

Gaps in the Literature

There is a growing body of literature that has described and evaluated examples of how food banks have evolved over recent years. However, the few studies that have been conducted in a Canadian context on characteristics of food banks that extend beyond emergency food provision have mostly been limited to descriptive and cross-sectional studies of individual food banks. Previous research has compared traditional food banks to alternative food-based programs (Roncarolo et al., 2016). Yet, based on the author's literature review, there have been no published Canadian studies performed to examine the associations between the characteristics of food banks that extend beyond traditional emergency food assistance provision and changes in food insecurity over time. It is important to investigate these topics in a Canadian context as findings from studies conducted in the United States or other high-income countries may be of limited generalizability due to the notable variation in the economic, social, and policy context between countries (Nord, Hooper, & Hopwood, 2008; Riches & Silvasti, 2014). In light of the proliferation of novel programs and initiatives that target food insecurity, there is a need for comparative research to examine their impact (Collins et al., 2014). Examination of the associations between distinct food banking strategies and characteristics and food insecurity and related outcomes in a Canadian context is needed. Moreover, there is a paucity of evidence to elucidate experiences and patterns of food insecurity and food bank access over time. As stated above, there have been a small number of cross-sectional studies and ever fewer longitudinal studies to suggest that access to food banks may occur on a chronic basis; however, research is needed to understand perspectives on food bank use from the people who access them over time. Based on the author's literature review, there have been no published Canadian studies to

examine the associations between distinct food bank operational characteristics and changes in food insecurity.

Overview of Objectives

The overarching aims of this dissertation were to describe the strategies that food banks in Ottawa, Ontario employ, explore experiences of food bank access and food insecurity, and examine the associations between access to different food banks and food insecurity and related outcomes over time. Moreover, this dissertation aimed to contribute novel evidence and help fill the knowledge gap on shifting food banking strategies and the relationships between food bank access and food insecurity and related outcomes over time. A series of three studies were conducted to investigate the research aims. The first study, described in chapter two, examines staff and volunteer perspectives on the strategies and operational characteristics currently employed at food banks in Ottawa, Ontario. Chapter three (study 2) describes a qualitative investigation of experiences of food bank access and food insecurity from the perspective of people who access these resources. The third study, described in chapter four, investigates the associations between distinct food bank operational characteristics and changes in food insecurity, diet, and physical and mental health over a six month period.

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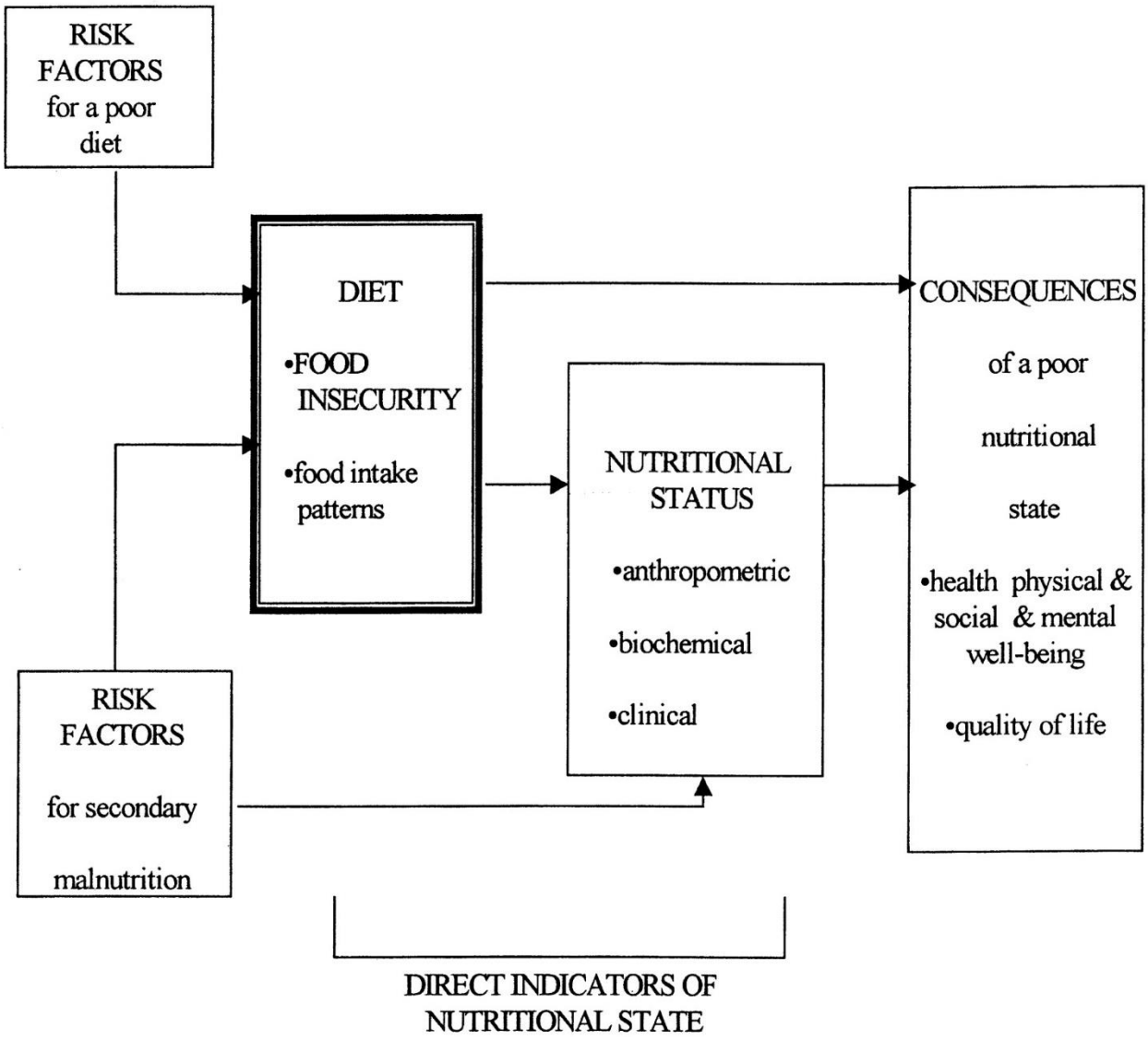
Figure 1

Campbell's conceptual framework for food insecurity and potential outcomes; from Campbell (1991)



Study 1:

Perspectives on Operations and Shifting Strategies among Community Food Banks in a Canadian City

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Abstract

Food banks emerged in Canada during the 1980s and were established to provide emergency food assistance. The number of people visiting these agencies has risen steeply over the past four decades and they are now often one of the only resources available to assist people experiencing food insecurity in Canada. Food banks have faced criticisms in their capacity to address the root causes of food insecurity. While there are examples of how food banks have been evolving over recent years, there is little evidence to explore perspectives on how operations have changed and what has directed change. This study employed a qualitative methodology to examine perspectives on strategies food banks have adopted to address the needs of the people that they serve and the factors that enable or impede change. Interviews were conducted with 24 food bank staff and volunteers. Thematic analysis was used to identify themes in the data. The first three themes illustrate how participants discussed the demand for food assistance, needs that extend beyond food assistance, and the issues that underpin food bank demand, and operational changes that have occurred in response to these needs and issues. The fourth theme describes the strengths that contributed to and the barriers that impeded change. The themes elucidate perspectives on how food banks have changed and how community needs have driven change. Food banks, though they do not address the causes of food insecurity, are established community resources that may serve as effective access points for not only short-term food assistance but also for connecting people with services and advocating for food security and poverty reduction.

Perspectives on Operations and Shifting Strategies among Community Food Banks in a Canadian City

Food insecurity is a persistent and pervasive issue in Canada. The most recent statistics available on food insecurity in Canada indicate that approximately 12.7% of households in the country face limited or uncertain access to food to some degree (Tarasuk & Mitchell, 2020). Household food insecurity involves inadequate or uncertain access to a sufficient quantity and/or adequate quality and variety of food due to financial constraints (Anderson, 1990; Bickel et al., 2000). Food insecurity is an important social determinant of health (McIntyre & Rondeau, 2009) and has been linked with poorer nutritional outcomes and a diet that is low in fruit and vegetables (Kirkpatrick & Tarasuk, 2009). People who experience food insecurity may also be more likely to report poorer overall physical and mental health (Ramsey et al., 2011; Seligman et al., 2010; Stuff et al., 2004). Poorer social outcomes, such as lower social support and community cohesion, have additionally been associated with food insecurity (Boston et al., 2013; Denney et al., 2017; Gichunge et al., 2015; Leung et al., 2015).

In 2019, the Government of Canada launched the Food Policy for Canada, the first-ever national food policy, which recognizes the issue of food insecurity and offers an opportunity for coordinated action on this issue (Government of Canada, 2019). However, the success of the policy and the actions that it aims to drive will likely depend on how it is implemented, funded, and evaluated. In Canada, responses to food insecurity have primarily fallen to the charitable sector, which largely includes food banks (Riches & Silvasti, 2014; Tarasuk et al., 2014a). Food banks were initially established in Canada during the 1980s as a method of offering short-term emergency food assistance to households affected during the economic recession. However,

many chronically food insecure people report that they rely on food banks on a regular basis to meet their monthly food needs (Black & Seto, 2018; Holmes et al., 2018). Food banks have become ubiquitous across the country over the past decades. The 2019 HungerCount, a national survey of food banks conducted by Food Banks Canada, reported that there were over a million food bank visits made during March 2019 (Food Banks Canada, 2019).

For the purposes of the present study, food banks are defined as not-for-profit agencies that distribute food directly to individuals, typically in the form of a 3 to 4 day supply of uncooked grocery items. These agencies often rely on financial donations from public and private sources; however, there is variation in their organizational structure and access to resources (Campbell et al., 2013; Tarasuk et al., 2014b). Several authors have criticized charity-based programs as a response to food insecurity, arguing that they offer unpredictable, insufficient, or stigmatizing methods of providing food assistance and that that they do not have the operational capacity to address long-term food insecurity (Loopstra & Tarasuk, 2012; McIntyre et al., 2016; Riches & Silvesti, 2014).

In response to criticisms, a growing number of North American cases have emerged in recent years to describe how some food banks have changed how they provide food assistance and how they have adopted extended services to better address the needs of the people that they serve. For example, nutrition-focused initiatives have become increasingly common, including improving the quality of the food provided (Campbell et al., 2013; Handforth et al., 2013; Martin et al., 2013). There are examples of how food banks have expanded their aims and services to connect people with programs that contribute to building individual capacity and ameliorating health and social outcomes that have been associated with food insecurity (Levkoe & Wakefield, 2011; Martin et al., 2013; Martin et al., 2019). Moreover, people involved with food assistance

programs have engaged in community development and advocacy efforts to target food insecurity and the underlying issues (Greater Vancouver Food Bank, 2016; Levkoe & Wakefield, 2011; Wakefield et al., 2013).

There have been several studies of the perspectives and experiences of food bank access among people who visit these agencies (Middleton et al., 2016). Evidence on staff and volunteer perspectives has predominantly focused on demand for food assistance, food supply, and other quantitative operational characteristics (e.g., González-Torre & Coque, 2016; Tarasuk et al, 2014b). For example, a survey conducted with food banks within five Canadian cities in 2010 found that the majority of participants indicated that people who accessed the food banks needed more food than what they provided, and that food banks had to implement access restrictions to manage demand (Tarasuk et al., 2014b). Campbell and colleagues (2013) employed survey (137 US food banks) and qualitative methods (6 US food banks) to examine organizational practices with a focus on the nutritional quality of food provided. Study findings illustrated how commitments to improve the nutritional quality of emergency food were common, but food banks faced limitations in procuring and distributing more nutritious foods (Campbell et al., 2013). Qualitative investigation into the experiences and perspectives of food bank personnel may offer unique insight into how changes to better address the needs of the communities served can be implemented. Dodd and Nelson (2018) conducted qualitative interviews with emergency food service providers that revealed strengths, such as community collaborators, and limitations, such as constraints resources, of emergency food programs, and highlighted the need for operational changes. Given the proliferating examples of how food banks and integrated services have been evolving over recent years, further investigation is needed on the perspectives of the people who deliver these services to understand how and why changing operational practices are

implemented and what factors impede or enable change. The present study aims to explore food bank staff and volunteer perspectives on the food and related needs among the people that they serve and how their food banks have changed in response to these needs.

Study Design and Aims

The objectives of the present study were to first, explore perspectives on the current operational practices and strategies employed at food banks and how practices compare with the perceived needs of the people who access the food banks. The second objective was to examine the factors that act as enablers or barriers to changing food banking strategies. A qualitative methodology was utilized to investigate the study aims. The project was approached with a pragmatic worldview, which is a problem-oriented philosophy that allows the research question to guide what method is most appropriate and 'what works' for the time and context of the study (Tashakkori & Teddlie, 2003). Semi-structured interviews were conducted with participants and thematic analysis was used to synthesize themes from the data.

Methods

Study Context

This study was conducted in collaboration with the Ottawa Food Bank, a municipal network of community agencies, and ten community food banks within this network. The Ottawa Food Bank networks includes over 100 member agency programs within Ottawa, including 26 community food banks. To recruit the 10 participating community food banks, an email was sent through the Ottawa Food Bank to community food banks within their network with information on the study. Community food bank coordinators interesting in taking part in the study were asked to contact the research team directly (further recruitment information in the "data

collection" section below). Each community food bank served a defined geographic area within Ottawa. Community food bank coordinators were initially contacted by e-mail, which was sent through the food bank network and included study information and an invitation to participate in the study. Food bank staff/volunteers who were interested in having their food bank involved in the study were asked to contact the research team. The food banks involved all served a minimum of 400 people per month.

All food banks were located within the municipal area of Ottawa and predominantly served urban and suburban areas. One of the participating agencies served a geographic area that extended into rural areas. There was variation in the access to resources, including financial resources and space available at their physical location. Two of the ten food banks were entirely volunteer-run, the remaining agencies had at least one paid position. Three of the participating agencies offered the choice model of food distribution. This model is distinct from the traditional model of offering food hamper pre-packed by volunteers and involves inviting people who seek food assistance to walk around a food display area and select their own food. Six of the ten food banks were integrated within community centres or community resource centres that facilitated access to additional programming onsite.

Participants

The sample included two to four coordinators, staff, or volunteers recruited from each of the participating community food banks. Participation was limited to staff and volunteers over the age of 18, who were comfortable conversing in English, and knowledgeable of their agency's operations and services (i.e., staff/volunteers who were new to the agency or unfamiliar with the operations were not interviewed). The sample included 24 people; six male and 18 female participants. Twelve of the participants held volunteer positions and 12 held paid positions. The

sample included all coordinators from the ten participating food banks. All participants were asked to review and sign a consent form (Appendix A) and were reminded that their participation is voluntary and they may withdraw at any time without consequence. Study methods and documents were approved by the University of Ottawa ethics committee.

Data Collection

Snowball sampling methods were employed to recruit participants. Food bank coordinators were initially contacted with an email containing study information and an invitation to participate in an interview. Coordinators who consented and took part in the interviews were then asked if they would be willing to share the study information and invitation to participate with staff and volunteers within their agency. Staff and volunteers interested in participating were asked to contact a member of the study team to schedule a one-on-one in-person meeting. Participants were not offered compensation.

Semi-structured interviews were conducted with participants. The interviews were facilitated by the first author (AE) in a private space in the food bank locations. Interviews were scheduled at the participants' convenience and an alternative neutral interview location was arranged if requested. All participants were asked to read and sign a consent form prior to completing the interview. Participants were asked to describe the programs offered at their community food bank. Interview questions focused on the participants' perceptions of the food offered, the needs of the community members who access the food bank, food bank efforts to address those needs, and factors that enabled or acted as barriers to change. Interviews were audio-recorded with the participants' permission and transcribed verbatim.

Data Analysis

Thematic analysis was conducted with the transcribed interview data to identify themes (Braun & Clark, 2006; Thomas, 2006). Two members of the research team (AE and CR) coded the interviews independently and refined codes through an iterative process until consensus was reached. All study authors were involved in the data analysis. AE is a doctoral student with experience and training in qualitative interviewing and thematic analysis. CR is an undergraduate honours student with experience in qualitative data analysis. EK is a professor of psychology who brings expertise in food security and community-based research. The data were coded and analyzed using NVivo12. Code reports were reviewed and discussed by the study authors until consensus was reached to identify themes. Preliminary findings were summarized and shared with food bank stakeholders, who included collaborators working within programs, planning, evaluation, and administration within the municipal network of food banks, to gather feedback at an in-person meeting on whether they perceived accuracy and what they would add or revise. This feedback was used to refine the final themes presented below. Verbatim quotes from the interviews are provided below to illustrate the themes.

Results

The findings are organized into four main themes. The first three themes illustrate the demand for food assistance, needs that extend beyond food assistance, and the issues that underpin the demand for food banks. The fourth theme summarizes the strengths and barriers that food bank staff and volunteers face in addressing needs in their communities.

Demand for Food Assistance

Participants discussed the growing demand for food banks and associated issues, including long line-ups and crowds. Participants explained that their agencies have needed to implement policies to manage demand such as limiting hours of operations, the permitted number of visits per month, and the amount of food distributed to each household.

> In terms of the food…we would like to give more than 3 days. You know, but we can't. we have that challenge…I know people want more food, more nutritious food, more quantities…But again we don't have that capacity.
> (Participant #24)

> You know if we just said…come as often as they want to for food, that would be unsustainable for us in terms of the sheer volume of food we would need to have on hand. You would have to limit it somehow and that's the hard part. That's really hard, for me that's the toughest thing, is that there are always these aspirations…but we find it a challenge to serve the…people a month that we get as is.
> (Participant #9)

The staff and volunteers discussed how their agencies have worked to increase the size and consistency of their food supply to better meet the food needs of the households visiting the food bank. Examples of strategies to manage supply included connecting with community partners and obtaining financial resources in order to make purchases to supplement donated foods.

> We get some people making a financial donation to us and so with that money we also purchase food that if we're not able to get enough of from…donated food. There are certain needs or foods that people need, which we may not have enough of, so, we have to go out and buy some of that, supplement it.
>
> (Participant #10)

Several participants discussed efforts to increase the quality of food distributed, including fewer "junk food" options and more fresh fruits and vegetables. Some participants discussed the importance of offering healthier options in light of how difficult it often is for people who are food insecure to access healthy foods.

> They're shopping at the dollar store a lot of the time because of their income. What are they getting at the dollar store? The worst of the worst quality food. Is it responsible then for me to put that on my shelf here? No, it's not.
>
> (Participant #19)

> [We can] offer more fresh produce for families, which is good because the price of food…so families now that were stretched are even stretched more because of the additional costs.
>
> (Participant #15)

Staff and volunteers explained that listening to feedback from the people who access the food bank was an important way to inform the types of food and items they offered to better meet people's needs. The strategies employed to obtain feedback included suggestion boxes, surveys, focus groups, and conversations with people who access the food bank. Based on the feedback they received, food banks described how they aimed to accommodate cultural-specific food needs within their communities. For example, some participants discussed how their food banks began offering halal foods to meet the needs of the people who were accessing their services. Participants also discussed how meeting the specific food needs of their communities included providing for family and children's needs.

> The baby items are the big ones, you want to make sure they are getting the diapers and the milk and baby foods here…The peanut-free snacks are always a really big deal at school and that is something else that we really encourage them to help us with, snacks. Sometimes parents don't send their kids to school if they feel that they don't have the appropriate snacks to send with them.
>
> (Participant #21)

Moreover, participants recognized that the people who are having difficulty affording food for their household are also likely to have financial barriers to obtaining other essential household items, such as hygiene and cleaning products.

> Diapers for sure. Pads and tampons for women, that's something that we have been requesting from people that ask when they call what kind of donations, because they are

> expensive and if you have two or three females in your family, that can be expensive, that can be a big expense. So, yes, those are things that are in great need. And, sometimes, I find like soap, in fact, sometimes that's something that people will be lacking and toilet paper and Kleenex.
>
> (Participant #14)

Participants recognized that offering choices was an important aspect of distributing food to meet individual needs. It was common for participating food banks to offer some degree of choice, but there was variation in how this was facilitated. Three of the participating food banks established a "choice" model of food distribution, in which people were able to walk around a food display area and select the specific foods they would like to take home from food categories (e.g., protein, starch, vegetables, etc).

While the participants discussed a range of strategies that they employ to address food needs, they also described how they interacted and listened to people who visit the food bank and recognize that people have needs for services that extend beyond food assistance. Some staff and volunteers explained that the food bank acts as an access point that can lead to connecting individuals to additional services.

> But that's what the food bank is too. Like that's where problems present more obviously. It gets people in the door and even if it's just five minutes, you can tell about other things going on. Just connect with them.
>
> (Participant #21)

Needs that Extend Beyond Food Assistance

Participants discussed how people who visit the food bank may disclose their personal circumstances and difficulties that extend beyond food needs, including social and health needs. The participants discussed a range of informal and more formalized efforts that their agencies have adopted in response to recognizing these needs. Some participants shared their perceptions of how people who access the food bank may feel embarrassed or ashamed and may have negative emotional or social experiences with food banks. Staff and volunteers also described the approaches employed at the food bank to reduce stigma, such as efforts to make the food bank a more welcoming, supportive, non-judgemental, and inclusive space.

> We try to get to know people on a first name basis. It goes a long way to address someone by their first name and try to get to know everybody's ins and outs. Sometimes when people come in for the breakfast program upstairs and their doing toast or whatever and they don't even need to say what they want because [the volunteer] already knows what they have when they come in.
>
> (Participant #4)

> At this food bank, well we have in here about 70, 75 volunteers…the main thing that I try to impress upon [the volunteers] is whoever you're dealing with in the moment, they are your most important thing. Even if you've only got 3 minutes to spend with that person, that 3 minutes that is your most important thing to do, they are the most important person to you is that person. Because they'll come in and say you know I like coming here because we're treated like a person, we're spoken to not spoken at and they say I'll

> go all month and go about my business and nobody speaks to me they just speak at me. Where the volunteers and myself we'll make a point of hi how are you and try to ask something about them in the very brief moment that we have to spend with them. because when you're serving 57 families in a 2 hour shift you don't have much time to be with them. but just for that one moment make them feel important because they are...being compassionate.
>
> (Participant #12)

> We do try to make them as welcome as possible and to know that we're here to support them. We don't try to judge them at all, it's just that we know that everybody can go through bad times and who knows, I may need that help at one point and I'd like to be able to think that I would feel comfortable enough to come to a place like this.
>
> (Participant #14)

Many staff and volunteers shared their experiences of offering information and referrals to resources that may better address an individual's specific needs.

> We know we can say, we know somebody who might be able to help, would you be interested in seeing them? If so we can set you up with an appointment, are you interested? If so, give us your name, give us your number and we'll take it from there. It's all we can do really because sometimes they [people who access the food bank] are just volunteering information…once you hear it, you have to deal with it, you can't just ignore it.

(Participant #8)

Six of the participating food banks offered additional programming at their location. This included additional food-related programs, such as collective kitchens, community meals, and cooking workshops. Participants described how these programs provide access to food, opportunities to learn new cooking skills, and a space for social interaction. Most of the food banks that offered additional onsite programming were embedded within community organizations (e.g., community resource centre) that at times, allowed them additional access to space and resources. Participants described how it was common for people to first seek access to their services for emergency food assistance, but were then able to connect with services that target a wide range of needs, such as access to social workers, health services, financial programs (e.g., budgeting or tax assistance), employment assistance, and children's programs. In the following quote, one participant describes how the food bank is a hub for accessing services as they are able to connect people with a range of onsite resources:

> We find out that they're in arrears with their [utilities] bills, then we have one worker that we hire to do all the application for…Low Income Energy Assistance Program…But we have everything all ready, and they say, this is what you need, this is what you'll need to bring, this is everything, so, it's like a one-stop shopping and it's one-stop service, this type of thing. So, if they're diabetic, we have a diabetic program, if they have children we have the [children's program]. So, there's lots of things happening. We have free dental clinics.
>
> (Participant #15)

Community Food Security

The theme "community food security" emerged from participant discussions of the issues that underpin the growing need for food banks. Participants commented on the persistence of food insecurity and how food banks have become embedded within communities.

> It's a huge increase and that's the sad part about food banks. Not just us, but all food banks. They've become a part of life and they shouldn't be…and I think they were supposed to be temporary, wasn't there a recession about that time? And they've just stayed and expanded and served more and more people.
>
> (Participant #17)

Staff and volunteers discussed how many people appear to experience chronic food insecurity as they often see the same people return to the food bank month after month. Some participants discussed how poverty contributes to long-term food insecurity, as well as the long-term reliance on charitable programs.

> That's why there's hunger because of poverty, I mean it's income. So it's housing. More and more and more people don't have housing, that's what we should be talking about. it's not about you need to give somebody some food, that's a very emergency thing. If we still think we're doing emergency food then we are fooling ourselves because we're not doing emergency food.
>
> (Participant #19)

> In some cases, their situation doesn't change. They are getting the same check, they are paying the same rent and nothing changes and they still need it. That's really sad, someone should recognize that you don't have enough money and fix that, instead of depending on charitable organizations to fill the gap.
> (Participant #9)

Some participants described how their agencies worked to raise awareness of food insecurity, poverty, and related issues in their communities. For example, one food bank hosted social justice-focused workshops for community members at the food bank. Staff and volunteers discussed how some food banks have been changing to incorporate a lens of social justice and poverty reduction in their vision and program development. While participants described the limitations on what a food bank can accomplish, they also discussed how they can contribute to advocating for policy change to better address food insecurity and poverty.

> Poverty reduction is something we want to try too, not just for us, the food is something attached to a whole bigger problem…that is something that needs to be done politically. It is in the higher up governments and ministry to fix those things. It's not something that we can fix, we can try and improve their satisfaction in life by giving them the tools to live in those conditions… But [people who rely on disability benefits] who can't have a job and their finances for the cost of living in the city, they don't have enough. So they are always going to come back, no matter what we do, no matter what service we do. And so that is something that we are noticing now and that we think we need to do advocacy

> on, so that is something maybe in our future plans, to do advocacy for social assistance because it is just not enough.
>
> (Participant #23)

Barriers and Strengths

The food banks faced barriers in adopting strategies to meet the needs described in the three themes above. Participants frequently stated that it was challenging to meet the demand for food assistance because of overstretched resources, including financial, food, and human resources (e.g., some food banks were entirely volunteer-run). This also impeded the development of strategies to address needs that extend beyond food. Similarly, inconsistency in resources was identified as a barrier:

> The unpredictability of it…I never know how many people are going to come, I never know how much food I am going to have, I don't know when a food drive is going to come in, I don't know, our donations are fairly standard but again, we don't know how much money we are going to have. I mean, it's all kind of precarious so it's really of difficult to plan, so every day is making it happen, hoping we have enough and doing it, clean it up and doing it again, it's quite relentless. So to have that time to think and to be ahead of being reactionary in terms of even basic thing like doing outreach, trying to be proactive, encourage the kind of donations we need….that gets in the way of being proactive, I want to be proactive in communications, I want to be proactive in fundraising.
>
> (Participant #9)

Space, including storage and cold storage space, was also frequently identified as a barrier to changing the food distribution to offer more choice and offering additional programs. However, strengths that make it possible for agencies to identify community needs and act to address them were also identified. Participants described how they have gained support and access to resources through partnerships and connections formed within their communities. For example, through connection and communication with local organizations, food bank staff and volunteers were able to increase or improve the consistency of the donations on which the food bank relies.

> Acquiring food, well, you have to keep in touch with your donors. I have churches that email me or call me, or I have volunteers that work here that go to churches and say: okay what do you need this month? So, they send me, so I said: okay, our most urgent needs are…
>
> (Participant #15)

Staff and volunteers explained how often support for the food bank was driven by community connections. For example, through their connections, food banks obtained larger pools of volunteers and connected with multi-lingual volunteers, so that they could offer food bank service in the languages that were commonly spoken in their neighbourhoods. Participants also discussed how engagement allowed them to learn about the specific needs, challenges, and strengths in their communities. Staff and volunteers indicated that community engagement was a key aspect of raising awareness and advocacy.

> I'm kind of the voice of all those people if you want, because they come to talk to me about problems they have in their community too. So then my job is to also speak for them to the community developers and sometimes say hey there is this issue in this community, is it being addressed? What is being done?
>
> (Participant #23)

Discussion

These findings illustrate current food banking practices in one Canadian city, including examples of how operations have shifted in response to the needs of the individuals and communities that they serve. Previous research has suggested that food banks may be effective in providing short-term relief of food insecurity (Roncarolo et al., 2016). The findings presented above describe how food banks strategize to manage their food supply while facing persistently high demand. In line with a survey of food bank operations across five Canadian cities (Tarasuk et al., 2014b), food banks in the present study reported implementing access restrictions as a necessary measure to manage their supply and demand. This again highlights the issues around the capacity of food banks to meet the food needs of the people accessing them. Participants described the strategies that have been employed to improve the quality of the food supply at food banks, including more fresh fruits and vegetables. Similarly, past studies have demonstrated how initiatives to improve the nutritional quality of emergency food assistance have been successfully implemented (Campbell et al., 2013; Handforth et al., 2013; Martin et al., 2013).

In line with previous findings on the associations between food insecurity and health and social outcomes (e.g., Leung et al., 2015; Seligman, Laraia, & Kushel, 2010; Stuff et al., 2004), participants in the present study perceived that people who access the food banks may also have

an elevated need for health and social services. Within the second theme, staff and volunteers explained how they provided referrals to other community services and some described the additional onsite food, health, and social programs offered at their food bank location. Although studies have indicated that many people who experience food insecurity do not access a food bank, the ones that do visit a food bank tend to also report more severe food insecurity and lower-income (Tarasuk et al., 2019). The food bank may act as a strategic access point to target programs to otherwise hard-to-reach populations who are disproportionately affected by severe food insecurity and poverty (Greater Vancouver Food Bank, 2016; Wetherill et al., 2019).

The third theme, community food security, captured issues that extend beyond household or individual-level needs. Community food security exists when "all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice" (Hamm & Bellows, 2003, pg. 37). Unlike household food security, community food security highlights the complex interactions of food security with social and economic processes (Kaiser, 2011). In line with this definition, the findings presented above emphasize how participants departed from descriptions of providing emergency food assistance for households and delved into recognizing and engaging with the concept of community food security. Within this theme, participants discussed how poverty drives the continued and rising demand for food assistance. There were some examples of consciousness-raising and advocacy efforts that demonstrated how food bank service providers may be able to engage with communities and policy-makers on issues related to poverty and food insecurity. People who are involved in providing emergency food assistance may possess knowledge and connections that may present opportunities for collaborating in community food security action and advocating for poverty reduction (Wakefield et al., 2013).

The first three themes identified participant perspectives on how food banks engage individuals and communities as they strive to address a range of needs. The fourth theme, barriers and strengths, identified the factors that staff and volunteers perceived to impede or enable change. Consistent with prior research (Campbell, 2011), overstretched or inconsistent food and financial resources, as well as limited space, were identified as challenges in food bank operations. However, this theme also illustrated the strengths that allowed the food banks to adapt and change to better meet the needs of their communities. Participants emphasized the importance of community connections, partnerships, and engagement to overcome barriers, including improving the consistency of their food supply. Community engagement was also an important means of strengthening volunteer networks, learning about community strengths and needs, raising awareness, and advocating for issues that affect the community.

Some previous literature has argued against the role of food banks in alleviating food insecurity, suggesting that the normalization of food banks has obscured the need for policies that address the causes of food insecurity (McIntyre et al., 2016; Riches & Silvasti, 2014; Tarasuk et al., 2014). In line with these arguments, the findings presented above illustrate the challenges of food banking and the gap between the services that they are able to offer and the needs of the communities that they serve. However, because food bank personnel and leaders are engaged with and knowledgeable about the issues affecting their communities, they may serve as effective access points for a range of programs and services for some difficult-to-reach populations and may serve as collaborators for raising consciousness and advocating for poverty reduction policies that may eventually eliminate the need for food banks.

Limitations

While this study contributes novel evidence to elucidate staff and volunteer perspectives on food banking and the needs of the communities they serve, there are limitations to note when interpreting the findings presented above. The community food banks involved in this study were a convenience sample of medium to large agencies (i.e., serve over 400 individuals per month) within a municipal food bank network. Therefore, small agencies were not represented in the results. There were no studies identified in the literature review that have investigated differences between small and larger agencies; thus, future research would be needed to examine whether the populations, services, or outcomes significantly differ for smaller agencies. The participants were sampled from food banks within a single Canadian municipality; thus, the generalizability of these results may be limited. Future research is needed to investigate the evolving nature of food banking with a larger and more diverse sample of organizations. Information on participants' personal experiences with accessing food banks was not collected in this study; thus, research to explore the perspectives from people who both volunteer or work within food banks and have a current or past history of accessing food banks is needed. Moreover, longitudinal evidence is needed to examine the impact of changing food bank strategies on household and community food insecurity and related outcomes.

Conclusion

The findings presented in this study illustrate the ways in which food banks engage with individuals and communities to gain an understanding of current needs and how food banks prioritize their resources and strategies to better align with those needs. Participants described how food banks have shifted in their approaches to better address the food, social, and health needs of the people who visit their agencies. While food banks do not offer long-term solutions

to food insecurity, these not-for-profit organizations may offer effective access points for targeting a range of food, social, and health programs. Moreover, food banks may align with efforts to work towards more systemic change by raising awareness and advocating for community food security and poverty reduction.

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Appendix A: Consent Form

STAFF AND VOLUNTEER CONSENT FORM

Strategies and Experiences in Food banks, Food security and Health

Invitation to Participate: I am invited to participate in the study of food bank strategies and experiences, conducted in collaboration between Dr. Elizabeth Kristjansson's University of Ottawa research group and the Ottawa Food Bank.

Purpose of the research: The purpose of this study is to examine and report on the types of strategies food banks in Ottawa currently employ and how they affect the lives of the people who use the food banks. The study will examine what is working, and what could be improve in implementing these strategies. This information will be used to inform and enhance the programs and services offered at food banks. The researchers will use the results to study and share information about food banking strategies and food insecurity among food bank clients so that others can learn from this project.

Participation: My participation will consist of:

One in person interview on the topics of food bank operations, current strategies employed, what is working well, and challenges. The duration of the interview will be approximately one hour. The interview will be conducted by a trained member of the research team and will audio-recorded with my permission.

Risks: The researchers have made it clear that I am here to share my views, opinions, and experiences without having to divulge any very personal information or going into details that I am not comfortable sharing. I have received assurance from the researcher that every effort will be made to minimize these risks *by allowing me to express what I want in a safe and warm atmosphere. If I need to talk to someone else, the researchers will direct me to the appropriate person.*

Benefits: My participation in the interview will give me an opportunity to share my thoughts about and experiences related to the programs and services offered at the food bank. Sharing my views means that others will gain a better understanding of how the food bank operates and impacts the lives of the food bank clients. This can provide a better understanding what is working well in food banking, and what could be improved. My experiences will also be of interest to food bank coordinators, funders, the general public, and city officials. This research may also be of interest to other communities interested in this type of program.

Funding: Funding for this study is provided by a Learning Hub Grant paid to the Ottawa Food Bank by the Maple Leaf Centre for Action on Food Security.

Confidentiality and anonymity: The interviews will be audio-recorded and transcribed by the researchers. An alphanumeric code will be used to link my name to my interview transcripts and

only the researcher will know which interview belongs to which name. My name or any other information that would allow me to be individually identified will not be used in the results of this evaluation without my permission. Portions of my interview may be quoted in the results, but no descriptive information that could be used to possibly identify me will be used. If I would like to review quotes that will be used from my interview, I will be given the chance to review the quotes. Data collected for this study will be used for the purposes of Ms. Enns's PhD thesis and for honours theses of students involved in this project.

Conservation of data: The audio recording and transcript of my interviews will be securely stored on the researcher's password protected computer and on a password protected back-up server. The data will be kept for a period of seven years after the start of this study. Only authorized members of the research team will have access to this computer.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw. If I choose to withdraw, I can decide whether I want the data gathered up until the time of my withdrawal to be included in the study. If I withdraw abruptly and the researcher is not sure of my wishes, the data gathered up until my withdrawal will not be included in the study.

Acceptance: I, _____, agree to participate in the above evaluation.

***Participant's signature: _____ Date: _____**

Please check this box if you would like to review quotes that will be used from your interviews: ☐

There are two copies of this consent form, please keep one of the copies.

If I have any concerns about this evaluation, I can contact the lead researcher: Dr. Elizabeth Kristjansson. If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5

Co-investigators:

Aganeta Enns, M.Sc.
Faculty of Social Science, University of Ottawa

Appendix B: Recruitment Text

Text for recruiting participants

While we are surveying and interviewing people who come to the food banks, we will also be asking two or three staff members or volunteers to sit down with us for an interview. This is to gather more information about the food bank and to hear the staff/volunteer perspectives on what's working well at the food bank, challenges, and what you may like to see change. Staff or volunteers who have been involved with the food bank for at least 3 months and are familiar with the day to day operations of the food bank would be ideal for these interviews. We would like to invite you to take part in an interview and if you would be willing, send us any suggestions for staff or volunteers who are regularly involved with the food bank. Participation in these interviews is completely voluntary and you and any staff/volunteers interested are under no pressure whatsoever to participate. The interviews would be scheduled at a time that is convenient for the participant.

Staff and volunteers interested in participating can contact Aganeta Enns.

Appendix C: Interview Guide

Food Bank Staff & Volunteer Interview Guide

Food Distributed:

1. How do you distribute food to people who come to the food bank?

   Probe: for example, do volunteers hand out prepacked hampers, are clients given food options?

2. Does the food bank purchase food? If so, what types of food are purchased most often?

   Probe: Are there are any policies or guidelines for food purchasing?

3. Does the food bank receive donated food from community partners or donors? If so, what kinds of food are most often received from these types of donations?

   Probe: are there efforts to connect with community partners or donors?

4. What challenges, if any, does the food bank have in acquiring and distributing food?

Programming and Overall Atmosphere at the Food Bank:

5. Not including emergency food assistance, are there any programs or services offered at the food bank? If yes, could please describe the programs are services offered?

6. What, if any, additional programs or services do you think could be offered at the food bank that would address your clients' needs?

   Probe: What, if any, barriers are there to implementing these programs?

7. Not including grocery items, what kinds of things can people access at the food bank?

   Probe: for example, is there an information board in the waiting area, books, toys, clothes, computers or phones they can use, etc…?

8. What do you think the overall experience is like for people who come to the food bank?

   Probe: what do you think their interactions are like? What is the experience like in the waiting area?

Client Needs:

9. How do you recruit your volunteers?

   Probe: Are there opportunities for people who use the food bank to also volunteer here?

10. Are there opportunities for people who use the food bank to provide feedback or contribute other ways to the operations of the food bank?
11. What do you think the food bank does well? Probe: what do people like about the food bank?
12. Have there been any recent changes in how the food bank operates?
13. What, if anything, would you like to see change at the food bank?

    Probe: do you think any changes could be made to better address the needs of the food bank clients?

14. What barriers do you think the food bank faces when it comes to changing how it operates?
15. Is there anything else you would like to share with us?

Study 2:

Experiences of Food Bank Access and Food Insecurity in Ottawa, Canada

Aganeta Enns, Anita Rizvi, Stéphanie Quinn, & Elizabeth Kristjansson

University of Ottawa

Abstract

Food banks are one of the most common responses to food insecurity in Canada, but there has been little research to examine experiences of longer-term food insecurity and food bank access This study aims to examine experiences associated with accessing food banks over two consecutive time points. Semi-structured interviews were conducted at baseline (*n*=29) and six months later *(n*=20) with people who have accessed a food bank in Ottawa, Canada. The findings illustrate the variation in social and emotional experiences and a common theme of long-term and regular access to food banks among people with an income insufficient to meet their basic household needs.

Experiences of Food Bank Access and Food Insecurity in Ottawa, Canada

Food insecurity impacts approximately 12.3% of households in communities across Canada (Tarasuk, Mitchell, & Dachner, 2014). Measured at the household level, food insecurity is defined by inadequate or uncertain access to a sufficient quantity and/or adequate quality of food due to financial limitations (Anderson, 1990; Bickel et al., 2000). Food insecurity has been associated with poorer nutritional outcomes (Kirkpatrick & Tarasuk, 2009), as well as poorer overall physical and mental health (Ramsey, Giskes, Turrell, & Gallegos, 2011; Seligman, Laraia, & Kushel, 2010; Stuff et al., 2004). Despite the pervasiveness of and the consequences associated with food insecurity, there has been little formal government action to address this issue in Canada. In 2019, the Government of Canada released the framework for Canada's first-ever national food policy. The policy outlines a vision that includes: "all people in Canada are able to access a sufficient amount of safe, nutritious, and culturally diverse food" (Government of Canada, 2019). While the food policy for Canada formally recognizes issues of food insecurity, the impact of this recent policy will depend on how it is implemented, funded, and how outcomes are measured over time. In the meantime, the responses to food insecurity largely continue to fall to the charitable sector, which is exemplified by the ubiquity of food banks across the country (Riches & Silvasti, 2014; Tarasuk, Dachner, & Loopstra, 2014a).

While food banks vary in how they are organized and operated, they are typically characterized as non-profit agencies that largely rely on donations from private and public sources (Campbell, Ross, & Webb, 2013; Tarasuk et al., 2014b). In the absence of a sufficient social safety net for households affected by the economic recession that occurred during the 1980s in Canada, food banks emerged during this time to offer emergency food assistance to

those in urgent need. In the decades that followed, food banks expanded rapidly, becoming entrenched in our society (Riches & Silvasti, 2014). In one month in 2018, there were over a million visits made to a food bank in Canada (Food Banks Canada, 2019).

Previous research on experiences of accessing food banks has explored the circumstances that have led people to access food banks, perceptions of food bank operations and the food offered, and the impact of receiving food assistance (Middleton, Mehta, McNaughton, & Booth, 2018). The food received at food banks has been described in the past as including unhealthy food options and food that has passed the best before date, with few fresh fruits and vegetables. Receiving food that others may throw away can lead to feelings of shame and embarrassment (Loopstra & Tarasuk, 2012; van der Horst, Pascucci, & Bol, 2014). In response to criticisms, cases of food banks implementing efforts to improve the quality of the food offered, including more perishable food, have become increasingly common (Campbell et al., 2013). In addition to changes in the food offered, many food banks have integrated programs that aim to support people in consuming a more nutritious diet, such as collective kitchens, cooking classes, and food demonstrations (Caspi, Davey, Friebur, & Nanney, 2016; Dave et al., 2017; Handforth, Hennick, & Schwartz, 2013; Martin et al., 2013). In general, the psychological and social outcomes associated with visiting a food bank have been described in terms of shame and social stigma (Douglas, Sapko, Kiezebrink, & Kyle, 2015; Hamelin, Beaudry, & Habicht, 2002; van der Horst et al., 2014). However, prior research has also indicated that some people described food banks as supportive environments that facilitated social connections and where people were treated with respect by volunteers (Garthwaite, Collins, & Bambra, 2015; Perry, Williams, Sefton, & Haddad, 2014).

Literature that has focused on the link between food bank access and food insecurity has indicated that food banks may alleviate short-term food insecurity (Roncarolo, Bisset, & Potvin, 2016), but their capacity to meet needs beyond this has been questioned (Riches & Silvasti, 2014; Tarasuk et al., 2014a). Some authors have pointed to the constraints that these agencies face as they work to meet the needs of the people seeking assistance in a consistent, sufficient, and dignified manner (Loopstra & Tarasuk, 2012; McIntyre, Tougas, Rondeau, & Mah, 2016; van der Horst et al., 2014). Relying on charitable donations may contribute to the limited capacity of food banks to consistently provide food of adequate quantity and quality to the people who seek food assistance (Gany et al., 2012). These limitations suggest that food banks are unable to address long-term food insecurity and underlying causes (Riches & Silvasti, 2014; Tarasuk et al., 2014a).

People who access food banks may only represent a subset of the food insecure population in Canada; yet, compared to those who do not access food banks, food insecure households that have accessed these resources tend to report lower income and more severe food insecurity (Loopstra & Tarasuk, 2015; Tarasuk, Fafard St-Germain, & Loopstra, 2019). Cross-sectional studies have suggested that it is common for people to rely on food banks on a regular and long-term basis in order to meet their monthly household food needs (Feeding America, 2014; Holmes et al., 2018). One recent study analyzed data collected from food banks in Vancouver, Canada between 1992 and 2017 and found that although only 9% of people who access the food banks did so on a longer-term basis, they accounted for approximately 65% of all visits documented in the study (Black & Seto, 2018). Longer-term access included people who had visited food banks on an episodic basis, with an average of over 8 years of food bank access, or on a chronic basis, with an average of over 13 years of use (Black & Seto, 2018). Shorter-term

use was characterized as accessing a food bank for a few weeks or months and then disengaging use. There has been little research to explore the perceptions and experiences of food insecurity among people who access food banks over time. The present study aimed to explore the experience of food insecurity and food bank access over a six month period.

Study Design and Aims

This study employed a qualitative methodology to examine the following objectives: (1) explore experiences of food insecurity and accessing food banks over time and (2) investigate the perceived impact of food banks on the participants' lives. The project was approached with a pragmatic worldview, which is a problem-oriented philosophy that allows the research question to guide what method is most appropriate and 'what works' for the time and context of the study (Tashakkori & Teddlie, 2003). Data collection involved two cycles of semi-structured interviews conducted with people who access community food banks in Ottawa, Canada. Interviews were conducted at baseline and six months following the baseline time-point.

Methods

Study Context

This study was conducted in collaboration with eleven community food banks. Each community food bank was a member agency within the Ottawa Food Bank network and served a defined geographic region within Ottawa, Canada. The eleven community food banks served a range of urban, suburban, and rural communities within the municipal area. All food banks were not-for-profit agencies but varied in their organization, services offered, and access to resources. For example, agencies varied in whether they had resources to hire staff or whether they were entirely volunteer-run. There was also variation in access to physical space and resources to offer

additional programming on location. All community food banks represented in the present study distributed grocery items directly to people who visited their locations. The food banks tended to limit the number of visits permitted per person to once per month. Food banks within the municipal region serve only households within their defined geographic area of the city and may require proof of residence from people accessing their services; therefore, people seeking assistance will typically only do so only at the food bank with their defined geographic area. People who accessed the food banks typically resided at a permanent address (e.g., private residence or social housing). There were distinct food assistance programs (e.g., meal programs) that target people who experience homelessness; these programs are not within the scope of the present study.

Participants

A purposive sample of two to five participants were recruited from each food bank location. The baseline sample consisted of 29 people who accessed one of the eleven food banks described in the section above. The sample included 13 female and 16 male participants. Participants ranged from 21 to 67 years of age, with a mean age of 45 years. Twelve participants indicated that they had one or more dependents living in their household and 17 did not have dependents. Of the sample, 10 reported that they currently lived with a partner or spouse, 18 reported that they did not, and one participant preferred not to say. Participation was limited to participants who were aged 18 or older and comfortable conversing in English. Six months after the baseline interviews were conducted, 20 participants completed follow-up interviews. Of the 9 participants who were lost to follow up, four no longer had valid contact information at follow-up (e.g., out of service telephone number), three refused the invitation to complete the follow-up

interview, and we were unable to successfully contact the remaining two participants after multiple attempts. The sample at follow-up included 10 female and 10 male participants who ranged from 24 to 67 years of age, with a mean age of 47. Seven participants indicated that they had one or more dependents living in their household and 13 did not have dependents. Of the sample, 6 reported that they currently lived with a partner or spouse, 13 reported that they did not, and one participant preferred not to say.

Data Collection

Participants were recruited within the waiting areas of each of the eleven participating food banks. They were approached by a member of the research team and provided with information about the study and an invitation to participate. Participants were asked to schedule an appointment to complete the baseline interview in a private and quiet space within one of the food banks. All participants were asked to read and sign a consent form approved by the University of Ottawa ethics review board. They were reminded at the beginning of each interview that they may withdraw from the study at any time without consequence and that they may decline to answer any of the questions asked during the interview. They were also assured that the staff/volunteers of the food banks would not know who chose to participate.

The interviews were conducted the first author (AE) and by a research assistant trained in qualitative interviewing and supervised by AE. The baseline interview guide included questions pertaining to overall experience and interactions at the food bank, life circumstances and difficulties, and perspectives on the impact of the food bank (Appendix C). The average interview duration was approximately 30 minutes. The interviews were audio-recorded with the participants' permission and transcribed verbatim.

Each participant was contacted six months after they completed the baseline interview and invited to take part in a follow-up interview. Six months was determined to be a sufficiently long duration to explore changes in circumstances that contribute to food insecurity and food bank access while brief enough to minimize the number of participants lost to follow-up. The follow-up interview guide (Appendix D) included questions pertaining to whether participants continued to access a food bank, changes in access or life circumstances related to food insecurity, and changes in the overall experiences and interactions at the food bank or how they perceived the impact of the food bank.

Attrition is a widely acknowledged issue with longitudinal research and is particularly difficult with populations who may be considered marginalized. Based on previous longitudinal studies and information gathered from community food bank partners in Ottawa, three methods were employed to increase our retention rate (Hill et al., 2016; McKenzie et al., 2010). First, the research purpose was clearly communicated and relevant to participants. We also provided a direct benefit or incentive to participants. A $10 grocery store gift card was offered to participants for each interview they attended. Participants were informed they would still receive the incentive for that interview even if they chose to discontinue the interview. Participants who attended in-person interviews were additionally offered compensation for their transportation (equivalent to the cost of two city bus tickets). Finally, follow-up contact methods were flexible. Participants were provided with the option of telephone interviews at the follow-up time point in order to increase access for participants who may have mobility or transportation limitations or who have relocated. Study methods and all documents were approved by the University of Ottawa ethics committee.

Data Analysis

Thematic analysis of the interview transcripts was conducted using a general inductive approach (Braun & Clarke, 2006; Thomas, 2006). Three members of the research team (AE, AR, and SQ) read and coded the interview transcripts to develop codes independently. All authors were involved in the data analysis. AE is a doctoral student with experience and training in qualitative research methods and thematic analysis. AR (doctoral student) and SQ (research assistant) had both been trained in thematic data analysis. EK is a professor of psychology who brings expertise in food security and community-based research. Codes were refined through an iterative process of independent coding, re-reading transcripts, and discussion among the research team. All interview transcripts were then coded and analyzed using NVivo12. Code reports were reviewed and discussed by the research team until consensus was reached to establish a final set of themes. Verbatim quotes from the interviews are provided below to illustrate the themes.

Results

The findings are organized into three main themes. The first theme summarizes the participants' experiences of food insecurity and circumstances that contribute to seeking assistance from the food banks. The second and third themes examine food bank access over time and how participants described their emotional and social experiences at the food bank.

The Context of Food Bank Access and Food Insecurity

Participants discussed the challenges and barriers that they have faced while living on a low income. Those barriers included limited or precarious access to adequate food. Participants

often described their experiences with income and food insecurity in terms of a monthly cycle. The cycle involved paying for rent, utilities, and other essentials shortly after receiving payment at the beginning of the month, but running out of financial resources towards the end of the month and struggling to afford food and other necessities during that time. The participants discussed the precarious nature of monthly budgeting and how there is no room for unexpected or additional expenses. In the quote below, one participant described the monthly cycle and the difficulties around getting out of the cycle:

> The way I do it, it's really hard, if you live in the system you live in a monthly cycle. You go through the beginning of the month, you can actually do things, you have money and that goes really fast…I do what I can to keep food on the table and the house running and that's it. That's a monthly cycle. I mean I'm looking to get back into full-time work again I've had many interviews…lately I have not had good luck, it's either very competitive in my field right now or I mean it's not like I used to be. I don't have proper clothes sometimes for an interview…At the end of the month are you going to spend all this money on interview clothes or are you going to feed the kids, feed yourself…You pretty much live in a monthly cycle. You do what you can.
>
> (Participant #2, male, baseline)

Participants described how their income has impacted their access to suitable housing, which was often cited as a source of stress:

> I've been going through a lot of stress. Mostly related to my housing situation. Our house it's converting into a rooming house and it's overcrowded. It's still a nice place but it's just elbow to elbow here.
>
> (Participant #9, male, follow-up)

> I mean cops are [at my apartment building] all the time, drugs there, it's too much. When I'm not working, I try to plan my day so I'm not there…
>
> (Participant #20, male, follow-up)

Additionally, participants discussed how income limits their access to social or recreational activities, which was described to lead to feeling depressed or isolated. In the quotes below, participants described how their income limits their access to transportation and means to get out and participate in activities outside of their homes:

> I'd like to go out and just have a coffee somewhere you know what I mean? But I can't even afford a frigging cup of coffee for God's sake, you know? I'm just so broke all the time and I don't like that, it's very depressing…I don't even have bus fare.
>
> (Participant # 13, female, follow-up)

> Well, money is usually tight for me so I don't get out much.
>
> (Participant #26, female, baseline)

While most participants did not report changes in their income or the difficulties they face over the course of the study, some described positive changes in their life circumstances. In the follow-up interview, one participant discussed the changes that had taken place since the first interview in terms of employment and access to supports:

> The big check-mark was getting the job, big check is getting a counselor behind you, a support program, someone who is there to help you.
> (Participant #20, male, follow-up)

Despite persistent challenges and barriers, participants described experiences of resilience and hopefulness. Participants' descriptions of how they navigate resources and supports, find free or low-cost programs for their families, and advocate for themselves provided examples of the resourcefulness people have in order to find ways to stretch their monthly budget. Several participants acknowledged the hardships they have faced in their lives but expressed how they find a sense of hopefulness or positivity:

> So we got to keep positive. That's how I go through my life with a positive attitude. Try to kick me but I'm not staying down…I've gotten very strong. I've dealt with a lot in my life… but, life's got to go on and you've got to make the best of it…I just keep going.
> (Participant #3, female, baseline)

Long-term Access to Food Banks

In the baseline interviews, participants were asked how long they had been accessing a food bank. Four out of 29 participants indicated that they had been accessing a food bank for less than six months and three said more than six months but less than one year. Sixteen participants indicated that they had been accessing a food bank for more than one year but less than five years. Five said that they had been accessing a food bank for over five years. Among the four participants who reported visiting the food bank for the shortest time at baseline (less than six months), all completed the follow-up interview and three reported continued and regular access to the food bank. The participant who was no longer accessing the food bank explained that this change occurred because he was experiencing homelessness during the follow-up interview. As stated in the study context section, the grocery items offered at a food bank would require access to food storage and cooking facilities, and therefore, may not meet the needs of people experiencing homelessness who do not have access to facilities to cook and store food. Food programs that target homeless populations (e.g., programs that offer cooked meals) were out of the scope of the present study.

All remaining participants who completed the follow-up interviews reported that they had continued to access the food bank since the baseline interview. There was also very little change in how often participants reported accessing food banks between the baseline and follow-up interviews. When asked in the follow-up interview if there had been any changes in how often they access the food bank, most participants said there had been no changes. One participant indicated that he was visiting the food bank less often because he had obtained employment but still had to visit occasionally during times when he was not given an adequate number of work hours by his employer.

> I only go when I don't have that much hours in my work. It's not often
>
> (Participant #24, male, follow-up)

One participant explained that she had additional need for the food bank one month because of a power outage that had caused the food in her refrigerator to spoil. The participant explained that because of the power outage she was able to access the food bank twice that month, while food banks typically limit visits to once per month.

> I went to [the food bank] every month and then I went twice after we lost our power, because we lost all our food.
>
> (Participant #15, female, follow-up)

However, in both the baseline and follow-up interviews, the majority of participants indicated that they regularly rely on the food bank as often as they are permitted to visit, which is typically once per month. Food banks were rarely discussed as a short-term resource for food assistance, rather, in both the baseline and follow-up interviews, participants explained that they have counted on the food bank on a regular basis for several months, or more often, several years. Participants discussed their long-term experiences with food insecurity and discussed how access to the food bank often fits into the "monthly cycle" of living with a lower income.

> [The food bank] really comes in handy I find. I come by the last week of the month…I was on [social assistance] and I am waiting for my pension stuff right now so actually, I

> don't really have much income, so getting food here…of course, you've got money at the beginning of the month, you stock as much as possible but then by the end of the month you are out of groceries and all that. So coming [to the food bank] by the end of the month is a key part of general surviving.
>
> (Participant #10, male, baseline)

Participants described needing to access the food bank each month to supplement their limited food budget, which was discussed as a necessary aspect of trying to meet their monthly household food needs. Participants indicated that their monthly income is not sufficient to pay for their fixed expenses (e.g., rent and utilities) and afford food for the month; therefore, visiting the food bank each month is a necessity:

> I still go once a month. And I go once a month because it helps alleviate the cost of groceries.
>
> (Participant #3, female, follow-up)

> It's nice to get, you can count on certain things that would be in the [food order] each month and know that you don't have to buy that with the last bit of money that you have because you are going to the food bank next week
>
> (Participant #10, male, baseline)

In the quote below, one participant explained that they would wait to visit the food bank until they had no other option to obtain food for their household:

> It's like a basic help. It's like you have no other choice, you're done, you have nothing left, you've run out, you know what I mean? You're on your last limb, you would go [to the food bank], that's when I would go [to the food bank].
>
> (Participant #18, female, baseline)

Participants discussed the fact that the food they receive at the food bank was not sufficient to meet their monthly household needs. Some indicated that they would like to see certain foods, such as fresh fruits and vegetables, more consistently available at the food bank. Participants also discussed that most food banks only allow one visit per month, and that having access more than once per month would be needed to meet their food needs.

> It still isn't enough what [the food bank] gives you but you know I've got to make it last.
>
> (Participant #13, female, follow-up)

Emotional and Social Experiences at the Food Bank

In the interviews, people shared what it was like to visit the food bank and described how it impacted them. Participants provided examples of times that they received food that had passed the best before date or food that did not meet their dietary needs and the emotional impact of this. As illustrated in the quotes below, while the food received was not always perceived to be helpful, participants found it beneficial to obtain fresh fruits and vegetables when they were available:

> Since I became diabetic I can't eat 90% of the stuff they have there so it's not been that much help to me. The stuff they give out, I can't have. Like the beans, they try to give

> like pork and beans, when you're diabetic you can't eat pork and beans. Like half a cup of it is like 13 grams of sugar. There's no way. They give out like candy bars sometimes I can't eat that. I can't eat any type of white bread and they have white bread...So when I go there it's not a lot of help…But once in a while, they have like apples or carrots or that stuff [is] helpful. They don't have the capacity or what do you call it to cater to people who have special needs.
>
> (Participant #18, female, baseline)

> The expired food, I really hate it…it happened to me actually when I ate something from [the food bank] and I didn't notice it was expired. I had a stomach ache…It was a very bad experience. And after that, I didn't want to come for a while and I have to come back. But after that, I have to check everything.
>
> (Participant #6, female, baseline)

There were differences between participants who accessed choice model versus non-choice model food banks in the discussions of the food received and their overall experience of accessing the food bank. Three of the food banks from which participants were recruited for this study employed a choice model of distributing food. This model invites people who access the food bank to walk around a food display area and select their own food, rather than being offered food hampers pre-packed by volunteers. In the quotes below, two participants described how choosing their food allows them to obtain food to meet their dietary needs and avoid waste:

> I have to eat a more fibre-filled diet…So I try to pick things at the food bank that go along with that. So that's why I appreciate the picking because I'm able to choose foods that have whole grains and have a high fibre content.
>
> (Participant #5, female, follow-up)

> One aspect that I really like is that all the food is on shelves and you get to pick what you actually like. So you're not just given, you know, bags of stuff and then some of it you're not going to use.
>
> (Participant #14, male, baseline)

However, participants who had accessed both choice model and non-choice model food banks discussed how long line-ups, crowds, and having to wait outside affected their overall experience of visiting the food bank. Participants explained that it is common for people to line-up outside the food bank for hours before it opened in order to be one of the first served, as it was perceived that the first served may receive better or more food than those served later in the day. The quote below illustrates one person's experience with long wait times:

> In order to get a number on the front you have to come very early and to wait, especially during winter, in this harsh weather so I don't think that's a human thing.... you have to come like two hours before in order to get the number from one of the volunteers outside the food bank…that's horrible I think to wait like three hours before getting the service...Especially in cold winter.
>
> (Participant #4, male, baseline)

In the follow-up interview, respondents were asked if they have observed any changes related to their experiences at the food bank since the baseline interview. Two participants reported that their community food bank had adopted a "draw" system to address long line-ups, rather than serving people on a first-come-first-serve basis. To remove the incentive of lining up early to obtain a number and be served first, the draw system involved distributing random numbers to everyone waiting to be served. One participant explained that because of this change there are no longer lengthy lines to obtain a number, but there have been some negative reactions:

> Now they're doing a draw. And I mean it has upset a few people, there was one lady last month who was not happy with that. But it is what it is, we can't be outside like that waiting. Especially if you have children, it's way too cold.
> (Participant #5, female, follow-up)

Several participants explained that they anticipated shame or embarrassment when first visiting a food bank; however, their interactions at the food bank were more often characterized as non-judgemental and friendly, as illustrated in the quotes below:

> They were really good and they didn't make you feel like oh you're coming to the food bank.
> (Participant #3, female, baseline)

> They don't make you feel like you're a beggar when you're here [at the food bank].

> The [staff and volunteers] were actually really nice. They didn't make you feel bad. They were really friendly and they got to know your name.
>
> (Participant #21, male, baseline)

One participant shared how he was relieved after his first visit to the food bank, as he saw that many other people were experiencing similar difficulties:

> I was a little bit surprised when I arrived when I saw other people are there sitting for their numbers to be called it was like oh, it's not only me, there are a lot of people here. So the stress is relieved a little bit...I thought it's not only me and there are many people as well in this situation, so that gives me a little bit of relief.
>
> (Participant #4, male, baseline)

Participants described how the food bank could facilitate social interactions, connections, and a sense of community. For example, three people who were interviewed stated that they were involved in volunteer activities associated with a food bank:

> It's nice where I've started helping out, giving back to the community. I've been volunteering.
>
> (Participant #1, female, baseline)

Some food banks involved with this study were located within community centres that allowed them to offer additional programs and service, such as workshops, counseling, and social work services. Participants who accessed these services described them as helpful:

> We've had workshops on personal debts, how to budget your money properly, things like that, on diabetes, so different workshops.
>
> (Participant #1, female, baseline)

> They seem to offer a lot of different services. That can be really helpful…they offer counseling and everything.
>
> (Participant #14, male, baseline)

Discussion

This study provides new evidence on the experiences of people who access food banks over two consecutive time points. Participants' experiences were characterized by a "monthly cycle" of living on a low-income and visiting the food bank on a long-term and regular basis. The first theme presented provides a contextual description of the participants and of those who may seek assistance from a food bank. While some participants shared experiences of resourcefulness and hope, the difficulties they described were often associated with feelings of stress and isolation. These experiences echo those discussed in prior research, which has widely portrayed the stress that comes with food insecurity and accessing food banks, but has also provided accounts of hope for the future and resourcefulness (Middleton et al., 2018; Williams et al., 2012). The first theme also exemplified how people living with food insecurity face difficulties in affording their food and other basic needs, including adequate housing and transportation. This theme is consistent with a Canadian study that found food insecure households tend to spend less but allocate a larger proportion of their budget to basic needs

compared to food secure households (St-Germain & Tarasuk, 2018). This highlights the fact that food insecure households prioritize basic needs but face financial constraints that interfere with meeting these needs. Participants in the present study reported that their monthly budget was constrained to the point that they struggled to reliably meet their basic needs and that regular visits to a food bank had become embedded within the monthly cycle of trying to meet their household needs.

Previous research has noted some variation in the experiences that have been associated with visiting a food bank (Middleton et al., 2018). For example, people who access food banks have described negative experiences with social stigma, embarrassment, and shame, yet positive experiences with respectful volunteers and social connections have also been reported (Middleton et al., 2018). The findings within the theme "emotional and social experiences at the food bank" indicated that the participants regarded their interactions with volunteers and staff as being generally friendly and non-judgemental and revealed positive social experiences, such as involvement in volunteer activities, counseling, or other services offered onsite at certain food banks. This theme aligns with the small but growing body of literature that supports the role of food banks in facilitating programs that extend beyond emergency food assistance and target social and health needs of food insecure populations (e.g., social programs, advocacy, and capacity building programs) (Caspi et al., 2016; Dave et al., 2017; Greater Vancouver Food Bank, 2016; Handforth et al., 2013; Martin et al., 2013; Wetherill, White, & Seligman, 2019). However, there were also descriptions of negative experiences; for example, with long line-ups or with the food received at times.

Visiting a food bank has been associated with perceptions of poor food choices, including food that may be spoiled, unhealthy, or unsuitable for an individual's dietary needs (Garthwaite

et al., 2015; Loopstra & Tarasuk, 2012; van der Horst et al., 2014). Consistent with this line of research, the findings presented above provide examples of people receiving food that has passed the best before date or food that did not meet their dietary needs. However, some participants, particularly those who access food banks that offered a choice model of food distribution, shared more positive accounts of the foods received. The choice model of distribution, which invites people to select their food from a display area rather than offering pre-packed hampers, has previously been described as a way to facilitate a more dignified method of food distribution (Remley et al., 2010).

While there was variation in the social and emotional experiences described at different community food banks, the findings indicated that long-term experiences in food bank access were common across most participants. Many participants explained how they have accessed the food bank for several years, and almost all participants continued to access the food bank six months after they were first interviewed for this study. Comparison of the baseline and follow-up interviews revealed little change in food insecurity and food bank access. This theme illustrated how people with an income that is insufficient to meet the basic needs of their household may access food banks on a regular and long-term basis out of necessity. The theme of long-term food bank access conflicts with the conceptualization of food banks as resources of emergency food assistance that serve people on a short-term basis. These findings are in line with previous research that has indicated that most food bank visits are made by people who access these agencies on a long-term or regular basis (Black & Seto, 2018). Compared to people who access on a short-term basis (i.e., the minority of food bank visits), people who access on a longer-term basis tend to be older, have larger household sizes, are more likely to have health or mobility challenges, and are less likely to have employment as a primary income source (Black & Seto,

2018). Consistent with a study conducted in Vancouver, Canada that found people who accessed food banks viewed them as a long-term food access strategy and as a way to cope with financial constraints (Holmes et al., 2018), our findings suggest that accessing the food bank was often a monthly aspect of trying to obtain sufficient food for their household on a limited budget. As one participant stated, visiting the food bank monthly was part of "general surviving". While previous research on the experiences of regular and long-term use of food banks has relied on a single time point (Holmes et al., 2018; Middleton et al., 2018), our findings are a novel contribution that provide evidence that this theme holds true over time.

Despite the fact that people described how they rely on them, most reported that the assistance received at the food back was not enough to meet their family's needs. In line with previous findings, the food assistance did not sufficiently meet demand due to operational limitations (e.g., limiting visits to once per month) and the consistency and quantity of food available (Loopstra & Tarasuk, 2012; McIntyre et al., 2016). Food banks were not established with the intention of offering a long-term solution to food insecurity; however, the present study described how many people who visit these agencies report accessing them on a regular and long-term basis. Long-term access to food banks is not surprising given that food insecurity has remained a persistent issue as income inequalities have grown. People living in this monthly cycle because their income is insufficient to meet their basic needs appear to have no option but to seek assistance from charitable organizations. Without formal government action, food insecurity is reinforced as an issue for charity rather than policy in Canada, with food banks often one of the only resources available to people affected by food insecurity (Riches, 2011; Riches & Silvasti, 2014; Tarasuk et al., 2014a). The recent launch of the national food policy for Canada recognizes and may offer a critical opportunity to address food insecurity, but time and

evaluation will be needed to determine the success of the policy. The findings presented above underline the importance of policies that aim to ameliorate systematic issues that contribute to long-term food insecurity and monitor levels of food insecurity to ensure policy aims are met.

Limitations

The present study was limited to eleven food banks within one Canadian city. Therefore, the results may be of limited generalizability to people who access food banks in other areas, particularly given that the organization of food banks can differ between cities and countries. Researcher bias can be introduced in qualitative research. While steps were taken to minimize the risk of research bias, including involving independent coders and checking themes with researchers who were independent to the planning and data collection activities, we acknowledge the potential for bias to have affected the findings. While a strength of this study was the inclusion of a follow-up interview, a longer study duration and a greater number of follow-up interviews may more accurately capture experiences in patterns of food insecurity and access to food banks.

Conclusion

There was variation in how participants discussed the perceived impact of the food bank and how they described their experiences and interactions at their community food bank. The findings of this study suggest that the participants' emotional and social experiences were impacted by differences in how their community food banks were organized, such as offering a choice model of food distribution and offering additional services on-site. However, between baseline and follow-up, there were few changes in the participants' circumstances as they related to food insecurity and food bank access. As illustrated in the theme of long-term access, relying

on the food bank as a longer-term and regular resource to try and meet one's basic needs was common across different food banks and over time. Food banks were established with the aim of providing emergency food assistance, yet are often perceived as longer-term resources for those with insufficient income to meet their basic household needs. This discrepancy highlights the need for policy change to better address long-term food insecurity.

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Appendix A: Consent Form

CONSENT FORM

Strategies and Experiences in Food Banks, Food Security and Health

Invitation to Participate: I am invited to participate in the study on food bank strategies and experiences, conducted by Dr. Elizabeth Kristjansson's University of Ottawa research group and the Ottawa Food Bank.

Purpose of the Research: The purpose of this study is to examine and report on the types of strategies food banks in Ottawa currently employ, as well as what is working and what could be improved in implementing these strategies. We aim to describe the experiences of people who use the food bank and how food banks can affect the lives of the people who use them. This information will be used to inform and enhance the programs and services offered at food banks. The researchers will use the results to study and share information about food banking strategies and food insecurity among food bank clients so that others can learn from this project.

Participation: My participation will consist of:

One initial in-person interview and four follow-up interviews. The interviews will cover topics including: experiences using food banks, what I find helpful or what could be improved at the food bank, how programs at the food bank have affected my life, and my diet, health, and social support. The initial interviews will take about 30 to 60 minutes. The follow-up interviews will each take about 30 minutes. After my initial interview I will be contacted about 6 months later for my first follow-up interview. I will have the option of an in-person interview or a telephone interview. The interviews will be audio-recorded and transcribed by the researchers. All identifying information will be removed from the transcript. I will then be contacted for follow-up interviews 1-year, 18-months, and 2-years after my initial interview.

Risks: The researchers have made it clear that I am here to share my views, opinions and experiences without having to divulge any very personal information or going into details that I am not comfortable sharing. I have received assurance from the researcher that every effort will be made to minimize these risks *by allowing me to express what I want in a safe and warm atmosphere. If I need to talk to someone else, the researchers will direct me to the appropriate person.*

Benefits: My participation in the interviews will give me an opportunity to share my thoughts about and experiences related to the programs available at the food bank and if/how it has affected my day to day life. Sharing my views means that those involved with the food bank and others will gain a better understanding of the experiences of the people who use the food bank. This can help program coordinators understand what is working well, and what could be changed so that they can improve aspects of their programs. My experiences will also be of interest to the

people who fund the program, the general public and city officials. This research may also be of interest to other communities interested in this type of program.

Compensation: As compensation for my time and input into the study, I will receive a $10 gift card for each of the individual interviews I attend. If I chose to withdraw from the study, I will still receive the payment for any interviews that I attended prior to withdrawing from the study. I will be given two city bus tickets at each in-person interview I attend as compensation for my travel expenses.

Funding: Funding for this study is provided by a Learning Hub Grant paid to the Ottawa Food Bank by the Maple Leaf Centre for Action on Food Security.

Confidentiality and anonymity: The interviews will be audio-recorded and transcribed by the researchers. An alphanumeric code will be used to link my name to my interview transcripts and only the researcher will know which interview belongs to which name. I have received assurance from the researcher that my feedback will be presented in an aggregate way. My name or any other information that would allow me to be individually identified will not be used in the results of this evaluation without my permission. Portions of my interview may be quoted in the results, but no descriptive information that could be used to possibly identify me will be used. If I would like to review quotes that will be used from my interview, I will be given the chance to review the quotes. Data collected for this study will be used for the purposes of Ms. Enns's PhD thesis and for honours theses of students involved in this project.

Conservation of data: The audio recording and transcript of my interviews will be securely stored on the researcher's password protected computer and on a password protected back-up server. The data will be kept for a period of seven years after the start of this study. Only authorized members of the research team will have access to this computer.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the process at any time and/or refuse to answer any questions, without affecting my relationship with the staff, volunteers or researchers. If I choose to withdraw, I can decide whether I want the data gathered up until the time of my withdrawal to be included in the study. If I withdraw abruptly and the researcher is not sure of my wishes, the data gathered up until my withdrawal will not be included in the study.

Acceptance: I, _____, agree to participate in the above study.

***Participant's signature: _____ Date: _____**

Please check this box if you would like to review quotes that will be used from your interviews**:** ☐

There are two copies of this consent form, please keep one of the copies.

If I have any concerns about this evaluation, I can contact the lead researcher: Dr. Elizabeth Kristjansson. If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5

Tel.:
Email:

Co-investigator:
Aganeta Enns, M.Sc.
Faculty of Social Science, University of Ottawa
E-mail:

Appendix B: Recruitment Text

Verbal recruitment guide for interviews

[Note. Participants in this study were concurrently recruited for the survey in study 3. Recruitment took place in person within the participating food banks.]

In addition to surveying people who access the food bank, we are also conducting one-on-one interviews with a small group of people who use the food bank. The first interview will take approximately 30 to 60 minutes and will be facilitated in a private room in the same building as the food bank. The interview can be scheduled at a time that is convenient for you. A trained interviewer will ask you about experiences using food banks, what I find helpful or what could be improved at the food bank, how programs at the food bank have affected my life, and my diet, health, and social support. We will contact you every 6 months for the next 2 years to participate in follow-up interviews, which can be conducted over the phone or in person. All information you share will be kept confidential. You will be offered a $10 grocery store gift card for each interview you attend.

[**Note**: Interested participants will be provided with a copy of the interview consent form to review and a member of the research team will be available to answer questions and provide additional information on the study.]

Appendix C: Baseline Interview Guide

Food Bank Interview #1

Experience and interactions at the food bank:

1. Can you tell me about the first time that you came to the food bank? Probe: What were your first impressions of the food bank?
2. How would you describe the overall experience using the food bank? Probe: what have your interactions with other people been like at the food bank?
3. What, if anything, do you think they do well at the food bank? Probe: what do you like about the food bank?
4. What, if anything, would you like to see change at the food bank? Probe: what, if anything, do you think they could do better at the food bank?
5. What kind of impact, if any, has the food bank made in your life?

Perceived diet & health:

6. Can you tell me a little about the foods that you usually eat? Probe: what is your diet like in a typical week?
7. How confident do you feel in your skills and knowledge to prepare healthy meals?
8. How would you describe your overall physical health currently?
9. How would you describe your overall mental health currently? Probe: This could include your mood, happiness, stress, or anything related to your mental well-being.
10. Can you tell me about some things you do to keep healthy, mentally or physically?

Support, Involvement, & Strengths:

11. Can you tell me about some of the challenges you face in your life?

    11a. Follow up question: what kinds of things do you do when you face challenges?

12. What kinds of social support do you currently have in your life? Probe: by social support I mean any people in your life, such as friends, family, or other people you know, that provide you with any kind of support.
13. Are you involved in any community programs? Probe: could you please describe them? Probe: in what ways do you find these programs helpful?
14. What kinds of support, if any, would be most helpful for you currently?

Closing Reflection:

15. Is there anything else you would like to share with us?

Appendix D: Follow-up Interview Guide

Food Bank Interview Guide: 6-month

Experience and interactions at the food bank:

1. Have you used the food bank in the past 6 months? If yes, how often did you go to the food bank?
2. How would you describe your overall experiences with the food bank over the past 6 months? Probe: Have you noticed any changes at the food bank in the past 6 months?

Perceived diet & health:

3. In the past 6 months, have there been any changes to your diet? Probe: have you made any changes in the foods you usually eat?
4. Have there been any recent changes in your physical health?
5. Have there been any recent changes in things that affect your mental health? Probe: has anything changed that affects your mood, stress, happiness, or anything else related to your mental well-being?

Social support:

6. In the past 6 months, did you get involved in any new community programs? If so, could you please describe them? In what ways, if any, have these programs been helpful?
7. Have there been any other changes in your social support in the past 6 months?

8. What kinds of support, services, or programs, if any, would be most helpful for you right now?

Background and life circumstances:

1. Over the past 6 months have you experienced any major life changes? Probe: such as, changes in where you live, your employment or income source, or anything else major?

Closing reflection:

2. Is there anything else you would like to share with us?

Chapter 4: Study 3

Characteristics of Food Banks in Ottawa, Canada and Food Insecurity over Two Consecutive Time Points

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Abstract

Food insecurity is a pervasive public health issue that has been associated with negative dietary and health outcomes. Responses to food insecurity have largely fallen to the charitable sector in Canada and food banks are one of the most common of these responses. This study aimed to examine changes in food insecurity, diet, and physical and mental health over six months among people who have accessed food banks and the association of outcomes with operational characteristics of the food banks accessed. The three operational characteristics included (1) whether any food security-related programming that extended beyond emergency food provision were offered onsite, (2) whether the food bank was integrated within a community resource centre, and (3) whether the food bank had a choice model of food distribution. The sample included 321 participants who accessed 11 food banks in Ottawa, Canada. Participants were surveyed at baseline and six-months after baseline. Mixed linear model analyses were performed. The adjusted models revealed that accessing food banks that were integrated within community resource centres was significantly associated with reduced food insecurity over the six-month study period. Accessing a food bank that offers a choice model of food distribution was significantly associated with increased fruit and vegetable consumption over six-months. This study provides novel evidence on distinct food banking characteristics in a Canadian context and their associations with food insecurity and diet.

Characteristics of food banks in Ottawa, Canada and food insecurity over two consecutive time points

Food insecurity involves inadequate or uncertain access to a sufficient quantity and/or quality of food due to financial constraints (Anderson, 1990; Bickel et al., 2000). Food insecurity in Canada represents a pervasive public health issue that impacts roughly 12.7% of households (Tarasuk & Mitchell, 2020). The responses to this issue have largely fallen to the charitable sector as there has been little national, coordinated action to address food insecurity in Canada. While the Government of Canada recognized food insecurity in the recently released national food policy (Government of Canada, 2019), the impact of Canada's first-ever national food policy will depend on how the policy is funded, implemented, and how the outcomes will be measured. In the meantime, food banks are currently one of the most common responses to food insecurity in Canada (Riches & Silvasti, 2014; Tarasuk, Dachner, & Loopstra, 2014). The number of food banks operating and the number of people seeking food assistance has rapidly increased in recent decades. Food Banks Canada, a national network of food banks, reported that over one million visits were made to food banks in Canada over the course of one month in 2019 (Food Banks Canada, 2019).

The number of people who visit a food bank may represent only a fraction of the households that experience food insecurity (Tarasuk et al., 2019). However, compared to people who are food insecure but do not access food banks, the people who seek assistance from a food bank also report more severe food insecurity and lower income (Loopstra & Tarasuk, 2015; Tarasuk et al., 2019). More severe food insecurity has been associated with lower fruit and vegetable consumption (Kirkpatrick & Tarasuk, 2008; Holben, 2012; Kendall, Olson, & Frongillo, 1996). Low intake of fruits and vegetables contributes to the global burden of non-

communicable disease and death (Afshin et al., 2019; Lim et al., 2013) and is indicative of low overall diet quality (Garriguet, 2009). Moreover, food insecurity has been linked with poorer overall physical health, self-reported mental health, and increased risk of chronic disease (Ramsey, Giskes, Turrell, & Gallegos, 2011; Seligman, Laraia, & Kushel, 2010; Stuff et al., 2004; Yau, Adams, & White, 2018).

For the purposes of this study, food banks are defined as not-for-profit agencies that provide a short-term supply of uncooked grocery items directly to people within their local geographic area who seek assistance. Food banks were established with the intent of providing emergency short-term food assistance and there is evidence to support that they can alleviate short-term food insecurity (Roncarolo et al., 2016). However, as food banks have become entrenched in society and the issue of people relying on these resources on a regular, long-term basis has been illuminated (Black & Seto, 2018; Holmes et al., 2018a), several authors have questioned the role of food banks in addressing long-term food insecurity (Riches & Silvasti, 2014; Tarasuk et al., 2014). Critiques of food banks have emphasized that these resources face operational limitations and do not have the capacity to address the root causes of food insecurity (McIntyre et al., 2016; Riches & Silvasti, 2014) Yet, food banks remain critical resources that households rely on each month to meet their basic needs and these resources have been evolving in recent years to better address the needs of the people who access them (Wakefield, 2013).

There have been several cases of food banks in the United States that have implemented an alternative model of food distribution that involves choosing food from display areas, similar to shopping at a grocery store, rather than offering the traditional model of pre-packed food hampers (e.g., Martin et al., 2013; Remley et al., 2013; Wilson et al., 2017). This model will herein be referred to as the choice model of distribution. Studies conducted in the United States

have found that the people who access food banks prefer the choice model of distribution over traditional distribution models (Remley et al., 2010) and that access to choice model food banks is associated with improved dietary outcomes (Martin et al., 2013; Wilson et al, 2017). However, there is a dearth of research on the choice model of distribution in a Canadian context.

There is a growing body of evidence that has described and evaluated how food banks in North America have built upon and extended beyond the traditional model of food banking to better address food insecurity and related needs among the populations they serve. For example, there have been several examples of food banks in the United States that have integrated a range of targeted nutrition-focused initiatives, health promotion programs, and financial or employment-related programs into their existing services, which have been associated with positive influences on food security, dietary, and health outcomes (e.g., An et al., 2019; Campbell et al., 2013; Martin et al., 2013; Seligman et al., 2015). While these food-bank based programs have been heterogeneous, overall, the literature suggests that food banks may be strategic settings to facilitate programs that target the diet, health, and social needs of marginalized populations.

The shifting practices of food banking in Canada point to the need for further longitudinal research to examine their impact (Dodd & Nelson, 2018; Collins et al., 2014). The relationships between food bank-integrated programming as well as alternative models of food banking (e.g., the choice model of distribution) and food insecurity have been understudied in Canada. The few studies that have examined the strategies and characteristics of Canadian food banks that extend beyond the traditional model of emergency food provision have typically been limited to descriptive and cross-sectional designs. For example, there has been some description of food banks in Canada that have integrated additional programming to target longer-term food security

and related needs, such as such as community kitchens and gardens, support programs, community engagement and advocacy efforts, education and skill building programs (e.g., Greater Vancouver Food Bank, 2016; Levkoe & Wakefield, 2011). The present study aims to address this gap in the literature by examining the operational characteristics of food banks, including integrated programming and choice distribution models, in Ottawa, Canada and their associations with food insecurity, diet, and health.

Objectives and Design

The objectives of this study were to: (1) describe the food insecurity, food bank use, fruit and vegetable consumption, and physical and mental health of people who access food banks over a six month period and (2) to examine the associations between change in food insecurity, fruit and vegetable consumption, and physical and mental health over time and food bank operational characteristics.

A longitudinal survey-based study was conducted to examine the associations between the operational characteristics of food banks in Ottawa, Canada and the food insecurity, diet, and mental and physical health among the people who access them over two time points six months apart. A survey method was selected to collect consistent and structured information from each participant at each time point, which allows for systematic comparisons.

Methods

Participants

A purposive sample of 321 adults recruited from 11 food banks in Ottawa, Ontario was retained in the final analyses. Participation was limited to people who had accessed one of the 11

participating food banks, were comfortable conversing in English or French, and were 18 years of age or older. The average age was 44.5 years (SD=12.8) and 52.6% of participants identified as women, which is comparable to data from the Ottawa Food Bank that indicates 52% of people who access food banks in Ottawa were women (Ottawa Food Bank, 2019). The majority of participants indicated that they were born in Canada (72.3%) and 90.6% responded to the survey in English (Table 1). Approximately 30% of the sample identified as belonging to a visible minority group (Statistics Canada, 2017). As displayed in Table 1, 66% of respondents indicated that they are not married or living with a partners and 42.6% reported that they live with one or more dependents (including children or adult dependents). By comparison, a report of food banks in Ontario indicated that 53% of people who accessed them belonged to single person households and 33% of people who received assistance were children (Feed Ontario, 2019).

Procedures

The baseline survey was administered between November 2017 and April 2018. The follow-up survey was administered between June 2018 and December 2018. As much as possible, we tried to maintain a space of six months between an individual's baseline and follow-up surveys. The survey collected information on demographics, frequency and duration of food bank access, food insecurity, diet, and physical and mental health. Participants were recruited in the waiting areas of 11 food banks in Ottawa, Ontario, Canada. The authors identified and recruited food banks in collaboration with the Ottawa Food Bank, a municipal network of community agencies. Coordinators of eligible food banks within the Ottawa Food Bank network were contacted by email with information on the study. Food bank coordinators who were interested in collaborating on the study and facilitating data collection at their food bank were

asked to directly contact the research team by phone or email. The authors facilitated in-person meetings with food bank coordinators to provide further study information, answer questions, and obtain information on the food banks. The participating food banks each served 400 or more people per month and each served a defined geographic region within the municipality. The areas served included urban, suburban, and rural areas.

Research team members approached people in the waiting areas of the 11 food banks, provided information about the study, and invited individuals to complete the survey. Participants were asked to review a consent form and provided time to ask questions. Participants were offered the option of completing a paper and pencil version of the baseline survey, electronic version provided on a tablet, or having a research assistant read the survey questions in a one-on-one interview. There were also handouts available (Appendix B) that provided a link to the online survey if participants preferred to take the survey on their own device. Survey respondents were presented with the option of entering into a draw for one of eight $50 grocery store gift cards. At baseline, 730 surveys were collected. All participants were contacted by telephone, e-mail, or mail approximately six months after completing the baseline survey and invited to complete the follow-up survey. Respondents were offered the option of completing an online version of the survey, a paper-and-pencil mailed version, or completing the survey with a research assistant in a telephone interview. Flexibility in contact and survey administration methods was used to ensure it was accessible; for example, many participants did not have regular access to the internet or a telephone. Participants who responded to the follow-up survey were offered a $5 grocery store gift card. In order to examine changes between baseline and follow-up, only cases with data for both time points were retained in the analyses, resulting in the final sample of 321 participants. Informed consent was obtained from all

participants. Approval was obtained from the University of Ottawa Research Ethics Board prior to data collection.

Measures

The survey included measures of demographics, food bank access, food insecurity, physical health, mental health, and fruit and vegetable consumption.

Demographic questionnaire: The demographic section of the survey included questions on participant gender, age, income, sources of income, employment status, and number of dependents. These items were adapted from the socio-demographic items included in national Canadian surveys (e.g., National Household Survey).

Food bank access: Items on the frequency of food bank use and length of time since first accessing the food bank were included. Participants were asked, "How long have you been using this food bank?" followed by response options ranging from less than 6 months to more than 5 years. An item asking for the frequency of food bank visits over the past 3 months was also included.

Food insecurity: Food insecurity was assessed using the Canadian Household Food Security Survey Module (HFSSM). The HFSSM is an 18-item measure of a household's inadequate or insecure access to food due to financial constraints. The HFSSM was adapted from the well-validated tool developed by the United States Department of Agriculture. Scores on the measure are categorized by food insecurity severity (Carlson, Andrews, & Bickel, 1999). In Canada, the HFSSM module of the Canadian Community Health Survey (CCHS) has been used to monitor food insecurity across the nation (Tarasuk & Mitchell, 2020). Food insecurity is often categorized into levels but it may be treated as a continuous variable (Bickel et al., 2000).

Categories of food insecurity were calculated based the scoring criteria provided in Bickel and colleagues (2000). In this study, scores were summed and transformed into a total score ranging from 0 to 10, with higher scores indicative of more severe food insecurity. A variable to represent change in food insecurity was calculated by subtracting scores at 6-months from baseline scores resulting in a score between 9 and -9, with negative values indicative of improved food insecurity.

Physical and mental health: The 12-item version of the Short-Form Health Survey Version 2 (SF-12v2) was used to measure perceived physical and mental health (Ware, Kosinski, & Keller, 1996). Continuous physical component summary (PCS) and mental component summary (MCS) scores were calculated using Optum ProCore software. The SF-12v2 is a widely used measure of self-reported health. It has demonstrated good reliability and validity among diverse populations. Using data collected from a large, national survey in the United States, the PCS and MCS were both found to have high internal consistency ($\alpha > .80$), and moderate to high convergent and divergent validity when compared to other measures (Cheak-Zamora, Wyrwich, & McBride, 2009). The SF-12v2 has also been used and demonstrated to be a valid outcome indicator among marginalized or vulnerable populations (e.g., Chum, Skosireva, Tobon, & Hwang, 2016; Larson, 2002). Variables to represent change in physical health and mental health were calculated by subtracting scores at 6-months from baseline scores, with positive scores from the resulting change variables indicative of improved self-reported health.

Fruit and vegetable consumption: Two items were included to measure frequency of fruit and vegetable consumption. Participants were asked: “During the past month, how many times a day did you eat fruit?” and provided a set of 10 frequency responses from never to five or more times per day. To measure vegetable consumption, participants were asked: “During the past month,

how many times a day did you eat vegetables?" and provided with the same response options provided in the fruit consumption item. These items have been adapted from the National Cancer Institute's Fruit and Vegetable Screener (National Cancer Institute, 2015) and have been used previously in studies involving people who access Canadian food banks (Fowokan et al., 2018; Holmes et al., 2018b). Scores were summed and transformed to create a total score of frequency of fruit and vegetable intake. A variable to represent change in frequency of fruit and vegetable consumption was calculated by subtracting scores at 6 months from baseline scores, with positive scores from the resulting change variables indicative of increased produce intake.

Food bank operational characteristics. As there were no existing methods to categorize food banks by their operational characteristics, variables were created for this study through a process of reviewing past literature and gathering information on the operations, services, and programs of the 11 community food banks involved in the present study. To gather this information, two members of the study team (AE and EK) met with food bank coordinators, collected organizational information (e.g., information packages, brochures, and agency websites), and interviewed food bank staff and volunteers. Three food bank characteristics (binary independent variables listed below) were generated using these methods and in consultation with study collaborators at the Ottawa Food Bank. The three characteristics are not mutually exclusive and food banks may have possess more than one.

The first variable (named "additional programming") categorized food banks that offered any additional programming beyond emergency food provision of grocery items onsite at their location (coded 1) compared to those that offered no additional programs offered onsite (code 0). Programming included integrated alternative food security programs (e.g., collective kitchens) and programs that aim to improve aspects of individuals' lives that may be associated with food

insecurity (e.g., supports related to employment, applying for social assistance, housing, or budgeting). There was heterogeneity in the types of programs offered, how many and how often programs were offered. This variable was included to examine whether offered any kind of food security-related programming that extends beyond the traditional food banking model onsite was associated with the outcomes. Six of the 11 food banks offered additional programming onsite (Table 2). The second variable (named "choice model") categorized food banks that employed a choice model of food distribution (coded 1) compared to those that did not (coded 0). The choice model is similar to the client-choice models that have been described in previous research (e.g., Jones, Ksobiech, & Maclin, 2019; Remley et al., 2013). Four of the 11 food banks employed choice models of distribution. All four operated by inviting people to walk around a food display area that typically had sections for different food categories (e.g., produce, starches, proteins), accompanied by a volunteer, and select a number of items (the amount typically determined by household size) from each section. The third variable (named "CRC") categorized food banks that were integrated within a community resource centre (CRC) (coded 1) compared to those not integrated in a CRC (coded 0) (Table 2). While CRCs were not identified in the authors' review of the peer-reviewed literature, this distinct food bank characteristic emerged in the process of gathering information from the participating food banks. CRCs are multiservice community centres that offer a range of coordinated food, health, and social services. This characteristic was distinguished from the first variable in that the CRCs offer a model of coordinated and comprehensive services within one location, including food and nutrition programs that extend beyond emergency food provision (e.g., collective kitchen, community garden, cooking workshops, community meals), programs to support physical health and mental health (e.g., access to public health programs, medical clinics, mental health supports and counselling) , and

social services (e.g., child, parenting, and family programs, social groups, and assistance with housing, employment, and financial services). For example, if a person were to access a food bank integrated within a CRC, they could be referred to and access coordinated services onsite to better meet their specific needs that extend beyond emergency food assistance. Three of the 11 food banks were integrated within CRCs.

Data Analysis

Descriptive statistics were generated to summarize the sample characteristics. T-tests were used to test for significant differences between baseline and follow-up food insecurity, physical, and mental health. Chi square tests were used to determine differences between baseline and follow-up fruit and vegetable consumption. The data involved repeated measures from participants nested within food banks; thus, multilevel models were used to account for the hierarchical structure of the data. The distributions of the dependent variables were checked for normality. A series of mixed linear model analyses were conducted to examine the influence of the three food banking characteristics on food insecurity, fruit and vegetable consumption, and physical and mental health while controlling for the following confounding variables: gender, age, income, presence of dependents in the household, and frequency and duration of food bank access. The analyses were conducted using the PROC MIXED command in SAS version 9.4. Bonferroni corrections were applied to correct for multiple comparisons. The lsmeans statement was used to compute least square means to compare adjusted means across different levels of the independent variables.

The three dichotomous independent variables are described in detail in the operational characteristics section above and include: 1) additional programming, 2) choice model, and 3)

CRC. The impact of participants nested within food banks was treated as a random effect. The first model examined change in food security as the outcome variable. The model was then repeated three times for each of the following outcome variables: change in fruit and vegetable consumption, change in physical health, and change in mental health.

Results

Descriptive Results

The initial baseline sample included 730 participants recruited from 11 community food banks. A sample of 340 participants was contacted at the six month follow-up. Of this sample, 19 were excluded due to substantial missing data (>50% of the questionnaire missing). Only participants who completed both the baseline and follow-up surveys were retained in the analyses. Therefore, the final sample included 321 participants who completed both of the surveys. There was a larger proportion of missing data in the initial baseline sample; however, there were no significant differences between the demographic characteristics of the initial baseline sample (n = 730) and the sample retained in the analyses (n = 321). A comparison of the initial baseline sample and study sample is provided in Table 3.

Food Bank Access

When surveyed at baseline, 25.2% of participants reported that they had accessed the food bank for less than six months, and 10.3% reported 6 to 11 months of access. Furthermore, 44.5% reported more than one year but less than five years of access, and 19.6% of participants indicated that they had accessed the food bank for more than five years (Table 4). In the baseline

survey, just over half of participants (52.6%) reported that they had accessed the food bank at least once per month, which is typically the maximum number of visits allowed per month.

The follow-up survey conducted six months after baseline revealed that 90% of participants reported that they had accessed a food bank at least once during the previous six months. In the three months preceding the follow-up survey, roughly half of the participants (50.2%) reported that they had accessed the food bank at least once per month, 33.9% accessed the food bank within the past three months but less than monthly, and 15.6% had not accessed the food bank within the past three months (Table 4).

Food Insecurity

At baseline, 72.9% of participants reported moderate to severe food insecurity (Table 5). The mean level of food insecurity, as measured on a 10-point scale, was 5.6 (SD=2.2). At follow-up, the mean level of food insecurity was 5.3 (SD=2.3) and 69.2% of participants reported moderate to severe food insecurity. The small change in food insecurity from baseline to six months was not significant ($p > .05$).

Diet and Health

At baseline, the majority of participants (72.4%) reported that they ate fruits and vegetables less than once daily, 22.2% consumed fruits and vegetables one to four times per day, and 5.3% said five or more times per day. At follow-up, 67.2% of participants indicated that they consumed produce less than daily, 28.4% reported one to four times per day, and 4.4% indicated than they ate fruits and vegetables five or more times per day. At baseline, the mean score on the physical health subscale of the SF-12v2 was 45.1 (SD=10.2) and M=39.7 (SD=11.2) for the

mental health subscale (Table 5). At follow-up, the mean score on the physical health subscale was 44.1 (SD=11.7) and M=40.7 (SD=11.8) for the mental health subscale. There were no significant differences between baseline and follow-up diet and health measures ($p > .05$).

Food Bank Operational Characteristics

The first model examined changes in food insecurity over the six month study period. Controlling for frequency and duration of food bank visits, age, gender, income, and dependents, this model showed that there were significant differences in change in food insecurity between people who accessed food banks integrated within community resource centres (CRCs) and those who accessed non-CRC food banks (B = 1.30, $p < .01$). The least square means revealed that participants who accessed CRC food banks reported significantly greater reductions in food insecurity at follow-up compared to those who accessed non-CRC food banks (LSM = -1.10, SE=0.2, $p < .01$).

The second model examined changes in fruit and vegetable consumption over the six-month study period. There was a significant difference in fruit and vegetable change between people who accessed choice model food banks compared to non-choice model food banks (B = -0.68, $p < .01$). The least square means revealed that participants who accessed choice model food banks reported significantly greater increases in fruit and vegetable consumption at follow-up compared to those who accessed non-choice models (LSM = 0.57, SE=0.09, $p < .001$). The third and fourth models examined changes in physical health and mental health, respectively. The models revealed that there were no significant differences in physical and mental health between the food banking strategies examined in these analyses. Frequency and duration of food bank use

were included in all four models but were not significantly associated with food insecurity, diet, or health. The models did not reveal any significant effects at the food bank level.

Discussion

The objective of this study was to examine the associations between food bank characteristics and food insecurity, diet, and mental and physical health over two consecutive time points among people who access food banks. In line with previous studies of people who access food banks in Canada, the proportion of people reporting severe food insecurity was notably higher in our sample than national estimates (Holmes et al., 2018b; Loopstra & Tarasuk, 2015). At both baseline and 6 months later at the follow-up time point, 31 and 38% of participants reported severe food insecurity, respectively. Nationally, 3% of Canadian households report severe food insecurity and roughly 25% of food insecure households in Canada are severely food insecure (Tarasuk & Mitchell, 2020). The majority of the sample reported that they consumed fruits and vegetables less than once per day. At baseline and follow-up time points, approximately five percent of participants reported consuming fruits and vegetables five times per day or more, notably lower than the proportion of the general Canadian population (28.6%), which consumes produce at five or more time per day (Statistics Canada, 2019). This is consistent with previous studies that have noted low produce intake among people who access food banks (e.g., Fowokan et al., 2018; Holben, 2012).

The choice model was the only food bank characteristic that was significantly associated with change in fruit and vegetable consumption. Accessing a food bank that employed a choice model of food distribution was significantly associated with reporting increased fruit and vegetable consumption at follow-up compared to baseline. This finding provides further support

for the link between access to choice model food banks and improvements in dietary outcomes (Martin et al., 2013; Wilson et al., 2017). Previous research has demonstrated that produce is often preferred over other food options among people accessing food banks (Campbell et al., 2011); thus, offering increased choice may increase produce intake. That is, if people are able to view the produce items available and select their preferred items, they may be more likely to consume them. Moreover, choice models are often able to promote fruits and vegetables with displays and offer more nutrition information and suggestions or recipes to people accessing the food banks through increased interaction with volunteers as they are guided through display areas (Remley et al., 2013; Wilson et al., 2017).

One study conducted in Montreal, Canada found that access to traditional food banks was associated with improved short-term perceived health (Roncarolo et al., 2016). However, our findings revealed no significant associations between food bank characteristics and changes in physical and mental health. Food banks have been proposed as strategic partners in population health and there is growing recognition that food banks may be effective settings to facilitate health promotion programs for hard-to-reach populations that may be at higher risk of experiencing chronic disease, such as diabetes and cardiovascular disease (Laraia, 2013; Stuff et al., 2004; Wetherill et al., 2019). While no significant differences in physical and mental health were detected over the six-months of the present study, there were changes in factors that are associated with health outcomes (i.e., food insecurity and diet); thus, the duration of the follow-up period may not have been sufficient to identify changes in health outcomes. Further investigations of targeted food-bank based programs and longer-term studies of changes in overall physical and mental health as well as changes in chronic disease risk factors are warranted.

Overall frequency and duration of food bank use were not associated with change in food insecurity; however, accessing food banks integrated within CRCs was significantly associated with reporting less severe food insecurity at follow-up compared to baseline. Visiting a food bank integrated within a CRC may serve to increase access to a range of coordinated services that CRCs facilitate to support individuals' food security and related health and social needs. It is becoming increasingly common in Canada for food banks to integrate into CRCs; however, no previous studies on the CRC-integrated model were identified in the authors' literature review. While this is the first study to the authors' knowledge to investigate the association between CRC food banks and food insecurity, these findings generally align with case studies of food banks that have integrated coordinated or wrap-around services to address the needs of the communities that they serve. For example, studies on the Freshplace (Martin et al., 2013) and More than Food (Martin et al., 2019) food bank models in the United States, which facilitate wrap-around services that aim to improve individuals' food security, support, and health may offer some comparison to the CRC model. Participation in both of these models has been associated with improved food security. However, this comparison should be made with caution as there are differences in the context and operations of these multicomponent programs.

There are arguments against the role of food banks as a response to food insecurity, which suggested that charitable food programs do not have the capacity to address long-term food insecurity and the underlying causes (Riches & Silvasti, 2014; Tarasuk et al., 2014). Food banking leaders and researchers have recognized these criticisms, advocated for policy action to address the root causes of food insecurity, and voiced ways in which food banks may become more involved in working towards more effective ways of addressing food insecurity (Wakefield et al., 2013). However, while food banks remain vital for many Canadians who experience food

insecurity, they may also act as strategic access points for targeting services to otherwise hard-to-reach populations (Wetherill et al., 2019).

Limitations

Certain limitations should be considered when interpreting the results of this study. The findings presented above are drawn from one municipal region in Ontario, Canada; thus, may be of limited generalizability to other geographic regions. The findings are based on participant self-reported data, which can be susceptible to participant recall and social desirability bias. The measure of fruit and vegetable consumption that was included on the survey may represent an additional measurement limitation, as it was a brief adapted measure that has not been validated. Moreover, participation was limited to a convenience sample of English and French-speaking adults. Furthermore, over half of the baseline survey sample was lost to follow-up and analyses were limited to participants who completed both time points. This method may have introduced bias due to the loss of information from incomplete cases.

The present study compared different models of food banking; however, it was not feasible within the scope of the present study to compare our findings to a control group (i.e., a comparable sample that is food insecure but does not access food banks). Future studies on the effects of food banks may consider including a control group in their study design. While a strength of this study was the inclusion of a follow-up time point, the data was limited to a six-month period; thus, only shorter-term effects could be examined. Future research should consider longitudinal designs to examine patterns of food bank access, food insecurity, and related dietary and health outcomes over a longer period.

Conclusions

This study provides novel evidence on distinct food banking operational characteristics and the associations between food bank access and food insecurity in one Canadian city. The findings revealed that the choice-model of food distribution was associated with increased fruit and vegetable consumption and accessing food banks integrated within CRCs was associated with improved food insecurity. While food banks do not provide a solution to long-term food insecurity, they may be effective partners in helping to address the needs of the people who access their services.

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Table 1

Demographic characteristics of the study sample

Category	*n*	%
Gender		
Men	137	42.7
Women	169	52.6
Transgender or non-binary	<5	1.2
Not stated	11	3.4
Born in Canada		
Yes	232	72.3
No	83	25.9
Not stated	6	1.9
Language		
English	291	90.6
French	30	9.4
Ethnicity		
Not a visible minority	179	55.8
First Nations, Métis, or Inuk	34	10.6
Visible minority	94	29.3
Not stated	14	4.4
Highest level of Education		
Less than high school	51	15.9
High school diploma or equivalent	90	28.0
Some college or university	61	19.0
College diploma or certificate	58	18.1
Bachelor's degree	22	6.9
Degree above bachelor's level	22	6.9
Not stated	17	5.3
Marital Status		
Married or living with a partner	104	32.4
Not married or living with a partner	212	66.0
Not stated	5	1.6
Dependents		
No dependents	176	54.8
One or more dependents	136	42.6
Not stated	9	2.8
Total	321	100

Table 2

Food bank characteristics

Characteristic	*n*	%
Additional programming (6 food banks)	144	45.1
Choice model (4 food banks)	117	36.7
Integrated within CRC* (3 food banks)	81	25.2

Note. Food banks may possess more one than operational characteristic.
*Community Resource Centre

Table 3

Demographic characteristics of the initial sample of survey respondents (n = 730) and study sample included in analyses (n = 321)

	Initial sample		*Study sample*	
Category	*n*	*%*	*n*	%
Gender				
Men	323	44.2	137	42.7
Women	350	47.9	169	52.6
Transgender or non-binary	8	1.1	<5	1.2
Not stated	49	6.7	11	3.4
Born in Canada				
Yes	487	66.7	232	72.3
No	207	28.4	83	25.9
Not stated	36	4.9	6	1.9
Language				
English	645	88.4	291	90.6
French	85	11.6	30	9.4
Ethnicity				
Not a visible minority	374	51.2	179	55.8
First Nations, Métis, or Inuk	57	7.8	34	10.6
Visible minority	231	31.6	94	29.3
Not stated	68	9.3	14	4.4
Highest level of Education				
Less than high school	160	21.9	51	15.9
High school diploma or equivalent	181	24.8	90	28.0
Some college or university	124	17.0	61	19.0
College diploma or certificate	110	15.1	58	18.1
Bachelor's degree	48	6.6	22	6.9
Degree above bachelor's level	43	5.9	22	6.9
Not stated	64	8.8	17	5.3
Marital Status				
Married or living with a partner	229	31.4	104	32.4
Not married or living with a partner	466	63.8	212	66.0
Not stated	36	4.9	5	1.6
Dependents				
No dependents	377	51.6	176	54.8
One or more dependents	309	42.3	136	42.6
Not stated	44	6.0	9	2.8
Total	730	100	321	100

Table 4

Frequency and duration of food bank access

Variable	*n*	%
Duration of food bank access		
Less than 6 months	81	25.2
6 to 11 months	33	10.3
1 to 5 years	143	44.5
More than 5 years	63	19.6
Not stated	<5	<1
Frequency of food bank access in past 3 months at baseline		
Less than once per month	151	47.1
Once per month or more often	169	52.6
Not stated	<5	<1
Accessed a food bank 6 months after baseline		
Yes	289	90.0
No	27	8.4
Not stated	5	1.6
Frequency of food bank access in past 3 months at follow-up		
Did not access in past 3 months	50	15.6
Less than once per month	109	33.9
Once per month or more often	161	50.2
Not stated	<5	<1

Table 5

Food insecurity, fruit and vegetable consumption, and physical and mental health at baseline and follow-up

Variable	Baseline %	Follow-up %
Food Insecurity		
Food Insecurity 10-point scale*	5.6 (2.2)	5.3 (2.3)
Marginal to low food insecurity	27.1%	30.8%
Moderate to severe food insecurity	72.9%	69.2%
Physical health*	45.1 (10.2)	44.1 (11.7)
Mental health*	39.7 (11.2)	40.7 (11.8)
Fruit and vegetable consumption		
Less than once per day	72.4%	67.2%
1 to 4 times per day	22.2%	28.4%
5 times per day or more	5.3%	4.4%

Note. Physical health scores ranged between 15.2 (min) and 67.7 (max). Mental health scores ranged between 5.4 (min) and 68.3 (max).

*Mean and standard deviation shown for continuous variables.

Table 6

Associations between food bank operational characteristics and food insecurity, fruit and vegetable consumption, and physical and mental health

Fixed effects	Food Insecurity		Fruit & Vegetable Consumption		Physical Health		Mental Health	
	B	SE	B	SE	B	SE	B	SE
CRC	1.30*	0.33	-0.14	0.27	3.26	2.39	-2.42	3.02
Programs	-0.46	0.22	0.23	0.18	1.35	1.48	0.58	1.83
Choice	-0.71	0.22	-0.68*	0.17	-1.84	1.71	0.29	2.23
FB Freq	-0.13	0.22	0.16	0.19	0.41	1.16	0.44	1.22
Duration	0.28	0.24	-0.18	0.21	-1.83	1.23	2.59	1.30
Age	-0.01	-0.01	<0.01	0.01	-0.01	0.05	0.05	0.05
Depends	0.47	0.24	0.06	0.21	-0.92	1.38	1.04	1.46
Income	-0.31	0.25	0.01	0.21	0.92	1.27	1.33	1.34
Gender	-0.27	-0.24	0.49	0.21	1.00	1.23	0.43	1.29

*$p < .01$

Appendix A: Consent Form

CONSENT FORM

Strategies and Experiences in Food Banks, Food Security and Health

Invitation to Participate: I am invited to participate in the study on food bank strategies and experiences, conducted by Dr. Elizabeth Kristjansson's University of Ottawa research group and the Ottawa Food Bank.

Purpose of the research: The purpose of this study is to examine and report on the types of strategies food banks in Ottawa currently employ, as well as what is working and what could be improved in implementing these strategies. We aim to describe the experiences of people who use the food bank and how food banks can affect the lives of the people who use them. This information will be used to inform and enhance the programs and services offered at food banks. The researchers will use the results to study and share information about food banking strategies and food insecurity among food bank clients so that others can learn from this project.

Participation: My participation will consist of:

1) Taking part in an initial survey that covers topics including: experiences using food banks, experiences with food insecurity, my diet, health, social support, and demographic information. I have the option of participating in an online version of the survey. If I chose to participate using the device provided by the research team, I agree to return the device once my participation in the survey has ended. Upon request, I have the option of participating in a paper-and-pencil version of the survey. The survey will take approximately 20 minutes to complete. If I am not comfortable reading the survey, I have the option of having a trained interviewer read the survey to me and provide my responses verbally to the interviewer.

2) I will be contacted to take part in follow-up surveys 6-months, 12-months, 18-months, and 2-years after taking part in the initial survey. The follow-up surveys will cover topics including: experiences using the food bank, food insecurity, diet, health, social support, and demographic information. The researchers will contact me using the contact information I provided in the initial survey. The follow-up surveys will each take approximately 20 minutes to complete. I will be provided with a link to access the follow-up surveys online from any electronic device. If I do not have access to an electronic device, I will

be provided with the options to complete a mailed paper-and-pencil version of the survey or have an interview read the survey to me over the telephone.

Risks: The researchers have made it clear that I am here to respond to questions to share my perspective and experiences without having to divulge any very personal information or going into details that I am not comfortable sharing. I have received assurance from the researcher that every effort will be made to minimize these risks *by assuring me I may withdraw from the study at any time without consequence. If I need to talk to someone else, I may contact the researchers, who will direct me to the appropriate person.*

Benefits: My participation in the survey will give me an opportunity to share what my experience have been like at the food bank and if/how it has affected my day to day life. Sharing my experiences means that those involved in the food bank and others will gain a better understanding of how it works. This can help program coordinators understand what is working well, and what could be improved so that they can improve aspects of the program as it goes along. My experiences will also be of interest to the people who fund the program, the general public and city officials. This research may also be of interest to other communities interested in this type of program.

Compensation: As compensation for my time and input into the study, I will be provided with the option of entering into a draw from one of eight $50 gift cards. I will be provided with this option at the time of the initial survey and at each of the follow-up time points. If I chose to withdraw from the study, I will still be able to enter into the draws for each survey I took part in and collect the gift card if my name is selected as one of the winners.

Funding: Funding for this study is provided by a Learning Hub Grant paid to the Ottawa Food Bank by the Maple Leaf Centre for Action on Food Security.

Confidentiality and anonymity: I have received assurance from the researchers that the responses I will provide will remain strictly confidential. An alphanumeric code will be used to link my name to my survey responses and only the researcher will be able to access this information. I have received assurance from the researcher that my response will be presented in an aggregate way. My name or any other information that would allow me to be individually identified will not be used in the results. If you take part in the online survey, ensure you use standard safety measures such as signing out of your account, closing your browser, and locking your screen or device when you are no longer using them. This will help minimize the risk of security breaches and help ensure your confidentiality. Data collected for this study will be used for the purposes of Ms. Enns's PhD thesis and for honours theses and practicums of students involved in this project.

Conservation of data: The de-identified survey responses, and separate file containing my contact information, will be securely stored on the researcher's password protected computer and on a password protected back-up server. The data will be kept for a period of seven years after the start of this study. Only authorized members of the research team will have access to this computer.

Voluntary Participation: I am under no obligation to participate and if I choose to participate, I can withdraw from the process at any time and/or refuse to answer any questions, without affecting my relationship with the staff, volunteers or researchers. If I choose to withdraw, I can decide whether I want the data gathered up until the time of my withdrawal to be included in the study. If I withdraw abruptly and the researcher is not sure of my wishes, the data gathered up until my withdrawal will not be included in the study.

Acceptance: I agree to participate in the above research study conducted by Dr. Kristjansson's University of Ottawa research group and the Ottawa Food Bank. By clicking the NEXT button below, I hereby agree with the information provided above and give my consent to participate in this study.

You may print a copy of this consent form for your own files.

If I have any concerns about this evaluation, I can contact the lead researcher: Dr. Elizabeth Kristjansson. If I have any questions regarding the ethical conduct of this study, I may contact the Protocol Officer for Ethics in Research, University of Ottawa, Tabaret Hall, 550 Cumberland Street, Room 154, Ottawa, ON K1N 6N5

Tel.:

Email:

Co-investigators:

Aganeta Enns, M.Sc.
Faculty of Social Science, University of Ottawa
E-mail:

Appendix B: Recruitment Documents

Baseline Paper Handout

Ottawa Food Bank
La Banque d'Alimentation d'Ottawa

uOttawa

Voice your experiences:

Help us learn about food banks in Ottawa!

You are invited to participate in a project to tell us about what your experience is like coming to the food bank, what is going well, and what could be better.

If you are over 18 years old, we want to hear from you!

You will be asked to fill in a brief **confidential survey** that includes questions on what you think about the food bank. You will also be asked questions about the foods you eat and your well-being.
When you participate in the survey, you will be entered into a draw for one of eight $50 grocery store gift card.

Following your participation in the survey, you will be invited to take part in brief and confidential follow-up surveys every 6 months for 2 years. When you respond to each 6-month follow-up survey invitation, you will receive another entry into the $50 gift card draw.

Use this online link to read the consent form and take the first survey:

https://tinyurl.com/OttawaFoodBankStudy

If you have questions or would like more information please e-mail Aganeta Enns at [removed] or call [removed].

Follow-up Recruitment Text: Mailed Paper Surveys

uOttawa

Ottawa Food Bank
La Banque d'Alimentation d'Ottawa

Follow-up Survey:

Strategies and Experiences in Food Banks, Food Security, and Health

You are receiving this letter because you completed a University of Ottawa survey at a food bank in Ottawa within the past 6 months. Thank you for completing this survey and sharing your experiences and feedback on the food bank!

Your opinion and experience matter to us and the food bank. To help us gain more information, we invite you to complete this follow-up survey. This survey should take about 15 minutes to complete. **To thank you for completing the follow-up survey included in this package, we have included a $5 gift card.**

You may complete the paper survey included in this package and return it using the addressed enveloped enclosed. If you would prefer to complete the survey online, please visit: tinyurl.com/OttawaFoodBankSurvey. You may also call [removed].

Please note that in our first survey we offered participants a chance to win one of eight grocery store gift cards. We are not holding a draw for this follow-up survey, but will offer everyone who takes the survey a $5 gift card.

Follow-up Recruitment Text: Online (Email) Surveys

You are receiving this e-mail because you completed a University of Ottawa survey at a food bank in Ottawa within the past 6 months. Thank you for completing this survey and sharing your experiences and feedback on the food bank! Your opinion and experience matter to us and the food bank. To help us gain more information, we invite you to complete this follow-up survey. This survey should take about 15 minutes to complete. **To thank you for completing the follow-up survey, you will receive a $5 gift card.**

Please click this link to begin the survey: tinyurl.com/OttawaFoodBankSurvey.

If have any questions or would prefer to complete the survey over the phone or by mail, please reply to this e-mail or phone [removed]

Please note that in our first survey we offered participants a chance to win one of eight grocery store gift cards. We are not holding a draw for this follow-up survey, but will offer everyone who takes the survey a $5 gift card.

Follow-up Recruitment Text: Telephone Surveys

Hello, may I please speak with [participant name]?

My name is [research team member name], I am calling from the University of Ottawa to follow-up on a survey you completed at a food bank within the past 6 months. We are looking to follow-up with everyone who took our survey to get more feedback on the food bank and hear more of your experiences. Your opinion matters to us and the food bank. To thank you for completing this follow-up survey, we will offer you a $5 gift card.

Please note that in our first survey we offered participants a chance to win one of eight grocery store gift cards. We are not holding a draw for this follow-up survey, but will offer everyone who takes the survey a $5 gift card.

You can complete the survey online, over the phone, or by mail. Which would you prefer?

[depending on their stated preference, provide the participant with the following information:]

To complete the survey online, please visit this website: tinyurl.com/OttawaFoodBankStudy.

To complete the survey over the phone, I can schedule a time for a member of our research team to call you when it is convenient.

To complete the survey by mail, please provide your mailing address. I will send a paper version of the survey to you and include a pre-paid addressed envelope for you to return the survey to us.

Do you have any questions or concerns?

Chapter 5: General Discussion

General Discussion

Food insecurity is a persistent and pervasive issue that affects households across Canada (Tarasuk & Mitchell, 2020). Food banks are often one of the few sources of assistance for people facing food insecurity in Canada but have faced criticism for their limited capacity to address the root causes of food insecurity (Riches & Silvasti, 2014; Tarasuk, Dachner, & Loopstra, 2014). While there is a considerable body of literature on food banks and food insecurity, as described in the chapter below, there has been little examination of how food banks in Canada have changed from the traditional model of food banking and of the associations between access to these resources and food insecurity over time. This dissertation offers novel evidence to elucidate the evolving strategies and aims of food banks and how their distinct operational characteristics may impact the people who access them.

Summary of Objectives and Findings

This dissertation aimed to describe current strategies and experiences in food banking and examine the associations between access to different types of food banks and food insecurity, diet, and health over time. A series of three studies were conducted to investigate these aims.

Study 1 was a qualitative investigation of food bank staff and volunteer perspectives on the strategies employed at food banks and how these strategies have shifted over time to better meet the needs of the people they serve. Food bank staff and volunteers described how their food banks have adopted or adapted strategies that endeavor to better meet the household food needs of the people they serve, including increasing the quantity, quality, and variety of food offered, including more produce and options for people with restricted diets. Staff and volunteers recognized that the needs of people who sought assistance often extended beyond a short-term

supply of food and several food banks had integrated practices such as offering additional programs and services onsite, to target the health and social needs that often accompany food insecurity. Participants in this study recognized the systemic issues that create and perpetuate long-term food insecurity and discussed the efforts of some food banks to raise awareness and advocate for policy change to address these issues. Finally, factors that enable and impede food banks in their efforts to implement changes towards greater food security were explicated in this study.

Study 2 was a qualitative study that explored experiences of food bank access and food insecurity over time among people who have accessed food banks. The findings from this study were summarized in three main themes. The first theme captured the context of food bank access among the participants, which was characterized by the challenges of living with an income that is insufficient to afford basic household needs. The second theme, "long-term access to food banks", revealed that most participants accessed these resources on a regular and long-term basis as part of a monthly cycle that involved working to meet their basic needs in the context of financial constraints. The final theme summarized the emotional and social experiences associated with accessing food banks, which included a contrasting range of positive and negative experiences.

Study 3 was a quantitative study that examined the associations between the operational characteristics of food banks and the associations with changes in food insecurity, diet, and health over a six month period. Three operational characteristics were examined: (1) whether or not the food bank offered additional programming that extended beyond provision of emergency food assistance onsite, (2) whether the food bank employed the choice model of food distribution, and (3) whether the food bank was integrated within a community resource centre

(CRC). Accessing a food bank that employed a choice model of food distribution was significantly associated with increased fruit and vegetable consumption at six months compared to baseline. Accessing a food bank that was integrated within a CRC was significantly associated with less severe food insecurity at six months compared to baseline.

Food Insecurity and Accessing Food Banks in Canada

People who access food banks represent just a subset of the total population of food insecure households in Canada; however, this subset may experience more severe food insecurity and lower income compared to people who are food insecure but do not access food banks (Loopstra & Tarasuk, 2015; Tarasuk et al., 2019). The findings on the severity of food insecurity among people who access food banks were consistent across the three studies included in this dissertation. In line with previous research (Holmes et al., 2018; Loopstra & Tarasuk, 2015), the proportion of the sample in study 3 who reported moderate to severe food insecurity was notably high compared to national estimates of the general population and estimates from food insecure populations in Canada.

The findings on severe food insecurity were further illustrated by the lived experiences described by participants of study 2. In the interviews, participants shared the precarious nature of budgeting for basic needs with limited financial resources and the difficulties of obtaining sufficient food for their households each month. Participants discussed the “monthly cycle” of living with a lower income, which involved having an income that was too constrained to reliably afford basic needs and having to turn to emergency food assistance each month. These results align with previous Canadian research, which indicated that people who are food insecure tend to allocate a greater proportion of their income to basic needs, yet spend less overall

compared to people who are food secure (St-Germain & Tarasuk, 2018). That is, despite prioritizing basic needs, people who are food insecure likely still face financial limitations that interfere with adequately meeting those needs. Thus, accessing a food bank on a regular basis can become a part of "general surviving" (study 2).

Consistent with the few studies that have examined patterns of food bank visits, regular and longer-term access to food banks emerged as a common thread among the three studies in this dissertation. Among a sample of people who accessed food banks in the United States, a survey found that approximately 63% of respondents indicated that they rely on these resources on a regular basis to meet their monthly household food needs (Feeding America, 2014). In Canada, a longitudinal analysis of food bank data from Vancouver, British Columbia found that the majority of food bank visits were made by people who had visited on a chronic basis (Black & Seto, 2018).

In study 1, staff and volunteers recognized that many households rely on the food banks on a chronic basis and that food insecurity is a persistent issue in the communities they serve. The theme "long-term food bank access" in study 2 illuminated this issue from the perspectives of the people who have accessed food banks. Food banks were rarely discussed as short-term resources, but more often as a regular and necessary aspect of trying to meet one's basic needs. Similar results were published in a mixed-methods study of 77 people who accessed food banks in Vancouver, which found that food banks were typically perceived as long-term food access strategies and that high costs of basic needs and insufficient financial resources were associated with food bank use (Holmes et al., 2018b). Study 3 provided further support on the pervasiveness of longer-term food bank access, as almost 20% of the sample at baseline reported that they had been accessing the food bank for over five years. Only a quarter (25.2%) of survey respondents

indicated that they had been visiting the food bank for less than six months. At the follow-up time point (six months), 90% of participants had continued to access a food bank since baseline.

Social and Emotional Experiences in Food Banking

While few studies have examined the duration and frequency of food bank visits, there have been numerous studies conducted in Canada, the United States, and Europe on the emotional experiences associated with accessing food banks. A scoping review of studies that have examined perspectives from people who accessed food banks in high-income countries noted that experiences of having to seek out food assistance and perceptions of the assistance received have often been characterized by social stigma and shame (Middleton et al., 2018). In study 2, some participants discussed experiences consistent with previous literature on the stigma associated with food bank use (Loopstra & Tarasuk, 2012; van der Horst, Pascucci, & Bol, 2014), such as receiving food that has passed the best before date or was insufficient to meet their dietary need, or having to wait in long line ups.

Stigma, shame, and embarrassment also emerged in the results of study 1, as staff and volunteers recognized that these are common experiences. Within this theme, participants also went on to describe food bank efforts to address these issues, such as taking steps to offer a more welcoming and non-judgemental environment (study 1). Negative emotional and social experiences, such as perceptions of shame and indignity, have been the focus of many food bank criticisms (Loopstra & Tarasuk, 2012; McIntyre et al., 2016; van der Horst et al., 2014). Nonetheless, there have also been findings to illustrate how some food banks have facilitated respectful and positive social interactions (Garthwaite et al., Perry et al., 2014). Similarly, there were participants in study 2 who characterized their interactions as friendly, supportive, and non-

judgemental. In regards to changing practices to improve experiences, the choice model of food distribution, which invites people to choose their food items from display areas similar to purchasing food from a grocery store, has been suggested as a preferred and more dignified method of distributing food assistance (Martin et al, 2013; Remley et al., 2010). The participants of study 2 who had accessed choice model food banks did indicate that they preferred this model of distribution compared to pre-packed food hampers. Furthermore, the interviews (study 2) revealed positive experiences with accessing additional programming or services, such as workshops on a range of topics (e.g., budgeting, nutrition, and health promotion), collective kitchens, and counseling and social work services.

Several of the food banks involved in the three studies of this dissertation offered additional programs at their locations that extended beyond the provision of emergency food assistance. Food banks may be strategic locations to reach people at risk of experiencing loneliness, isolation, or low support as food insecurity has been linked with low social support and community cohesion (Boston et al., 2013; Denney et al., 2017; Gichunge et al., 2015; Leung et al., 2015). Participants in study 2 discussed barriers to accessing social supports and some described feelings of isolation or loneliness. However, there were cases in Study 2 in which people described how the food banks that they accessed had facilitated social interaction, connection, and fostered a sense of community. These social experiences were facilitated through volunteer activities and the additional programs and services offered onsite at the food bank.

Dietary and Health Outcomes among People who Access Food Banks

Food insecurity has been linked with a range of negative dietary and health outcomes, with severe food insecurity often correlated with more severe outcomes (e.g., Kirkpatrick & Tarasuk, 2008; Seligman et al., 2010; Stuff et al., 2004). As people who access food banks may be more likely to experience severe food insecurity (Loopstra & Tarasuk, 2015; Tarasuk et al., 2019), they may also be more likely to have a diet low in nutrients and poorer overall physical and mental health. Much like past studies (Fowokan et al., 2018; Holben, 2012), the results of the third study revealed that overall reported fruit and vegetable intake in the study sample was lower compared to estimates from the general population and samples of food insecure people who have not accessed food banks. Fruit and vegetable intake is a pertinent outcome as it is a valid indicator of overall diet quality (Garriguet, 2009) and low intake is associated with the risk of chronic disease (Afshin et al., 2019; Reddy & Katan, 2004).

Some research has suggested that the food offered at food banks may not support improved dietary outcomes among people experiencing food insecurity, as the offered food has been described in terms such as poor quality, including few fresh and healthy options, inconsistent, and insufficient (e.g., Douglas et al., 2015; Garthwaite et al., 2015; Hamelin et al., 2002; Kratzmann, 2003; McIntyre et al., 2016). Some of these criticisms were echoed by participants of study 2 who described receiving food that included few fruits and vegetables and did not meet their needs, particularly among participants with restricted diets (e.g., due to medical conditions). However, this was not a ubiquitous finding, as some participants described the food received as suitable for their needs (study 2). In addition, there were staff and volunteers (study 1) who discussed how their food banks have acknowledged these criticisms, recognized the need for

more nutritious offerings, and implemented efforts to improve the quality and variety of food offered and provide information on nutrition.

There have been cases of food banks in the United States that have effectively implemented interventions to improve nutrition, including examples involving choice models of food distribution (An et al., 2019). In line with American studies of the choice model (Martin et al., 2013; Wilson et al., 2017), study 3 showed that accessing a choice model food bank was associated with increased fruit and vegetable intake over a six month period. Moreover, Study 2 participants who accessed choice model food banks had explained that they appreciated being invited to pick their foods and that they were able to obtain preferred foods that were appropriate to their dietary needs. These findings provide novel evidence to support the implementation of choice model food banks in a Canadian context.

Food insecurity is an important social determinant of health and people who access food banks may represent a population with an elevated risk of experiencing poorer health due in part to the high prevalence of severe food insecurity (Seligman et al., 2010; Stuff et al., 2004; Yau et al., 2018). Food bank staff and volunteers interviewed in study 1 recognized the health needs of the populations that they served and discussed efforts to connect people to services for their physical and mental health. Similarly, Wetherill and colleagues (2019) found that food bank leaders acknowledged the connections between food insecurity and health and perceived people who access charitable food programs to be at a high risk of chronic disease. The results of study 2 illustrated examples of the challenges people who are food insecure may face in maintaining their mental and physical well-being. Similar to prior research (Garthwaite et al., 2015), participants (study 2) described the stress that they experience and the challenges of managing chronic health conditions. While there is some evidence to suggest that food bank access may be

associated with short-term improvements in health (Roncarolo et al., 2016), the findings from study 3 did not provide support for this conclusion as there were no significant associations between any of the operational characteristics examined and changes in mental and physical health over the study period. Given that there was a food bank characteristic significantly associated with improved diet, which in turn is a known to promote health and prevent chronic disease (e.g., Reddy & Katan, 2004; Ness & Powles, 1997), six months may have been too brief a period of time to detect significant changes in health. Longer-term designs may be needed to determine the effects of food banking characteristics on health. Moreover, Study 3 did not specifically examine food bank-based programs that target health, but there has been some description of such programs, such as diabetes-management programs (Seligman et al., 2015) and health screenings (Knoblock-Hahn et al., 2016). Further research into such programs and health outcomes over time is warranted, particularly given that food banks have been posited as effective partners and locations to connect food insecure and hard-to-reach populations with health promotion programs (Wetherill et al., 2019).

The Role of Food Banks in the Response to Food Insecurity

Food banks were established as a response to short-term food insecurity and there has been evidence to suggest that access to traditional food banks is associated with improvements in short-term food insecurity (Roncarolo et al., 2016). In study 3, access to a food bank integrated within a CRC was significantly associated with improved food security. However, as the study was limited to a six month period, so further longitudinal investigation is needed to examine the longer-term impact of accessing a food bank integrated within a CRC.

Food banks have been criticized as insufficient, unstable, inefficient, or ineffective responses to longer-term food insecurity (e.g., Poppendieck, 1999; McIntyre et al., 2016). These critiques align with many of the challenges involved in food banking that staff and volunteers discussed in study 1. Food bank personnel (study 1) were aware of these limitations and in some cases were able to describe how their food bank has changed in response to them. One salient example was that the food bank staff and volunteers recognized the need for more nutritious options, which resulted in changes, such as improving the quality of the food supply and adopting choice models of food distribution. As stated above, the choice model was associated with increased fruit and vegetable consumption (study 3).

The findings from study 1 revealed staff and volunteer perspectives on the growing number of people seeking assistance from their agencies, which is consistent with national estimates of high food insecurity and food bank use (Food Banks Canada, 2019a; Tarasuk & Mitchell, 2020). Increasing demand has presented challenges, such as managing the quantity, quality, and consistency of their food supply, providing services in limited space, and addressing long line-ups, as described in studies 1 and 2. These limitations may be associated with stigmatizing experiences and are consistent with many published accounts of accessing food banks (Loopstra & Tarasuk, 2012; van der Horst et al., 2014). The challenges associated with increasing demand, as described in studies 1 and 2, also illuminated how the emergency food assistance provided may not be adequate assistance to help a household meet their basic needs. Study 3 revealed that food insecurity was not associated with frequency or duration of food bank use (study 3), which suggests that despite accessing food assistance, people continued to experience limited access to an adequate quantity or quality of foods. People who accessed food banks explained that while

the assistance they received was helpful, it was not sufficient and that more assistance would be needed to adequately meet their household food needs over the course of a month (study 2).

The disparity between the assistance available and the assistance that would be needed to help a food insecure household meet their basic needs, coupled with the findings on recurrent and long-term reliance on emergency food assistance, align with suggestions that the needs of people accessing food banks extend well beyond the capacities of these agencies (McIntyre et al., 2016; Tarasuk et al., 2014). Some authors have argued against the role of food banks in addressing food insecurity because they do not have the capacity to ameliorate the systemic causes of chronic food insecurity (Riches & Silvasti, 2014; Tarasuk et al., 2014). Lower income is correlated with high rates of food insecurity and poverty has been seen as the primary root cause of food insecurity (Loopstra & Tarasuk, 2013; Tarasuk, 2017; Tarasuk & Mitchell, 2020). In study 1, some of the volunteers and staff spoke to this issue, as they recognized the systemic and long-term issues that many people face, including poverty, which leads them to rely on the food bank on a chronic basis. Within the community food security theme presented in study 1, participants acknowledged the short-falls of food banking and spoke to the broader-scale policy changes that are needed so that people are not left relying on charity.

There are experts who have argued that charitable food responses, including food banks, do not have the capacity to address the root causes of food insecurity (McIntyre et al., 2016; Riches & Silvasti, 2014; Tarasuk et al., 2014). These authors argue that eliminating or reducing poverty is the only solution to this issue and advocate for implementing poverty reduction strategies, including basic income guarantee programs. There has been evidence to support the effectiveness of poverty reduction strategies on ameliorating rates of food insecurity, such as the notable decline in food insecurity observed in Newfoundland and Labrador between 2007 and

2011 after a poverty reduction strategy that included increased social assistance payments, was implemented (Loopstra, Dachner, & Tarasuk, 2015). A basic income guarantee (BIG) program is a universal intervention that provides a minimum level of household income regardless of employment status. Some authors have cautioned on the limitations of BIG, arguing that exclusive focus on implementing BIG may divert attention from broader societal issues of power and influence (Raphael, Bryant, & Mendly-Zambo, 2019); however, implemented a BIG program would likely be a major advance in improving the living conditions, access to basic needs, and health among people affected by poverty in Canada (Raphael et al., 2019). In 2018, Ontario initiated a BIG pilot program, which demonstrated promise of improving the diet, health, and housing stability of participants (Hamilton & Mulvale, 2019). However, the pilot was cancelled after a new provincial government was elected, which according to media reports, left some people no option but to return to accessing food banks to meet their needs (Lindsay Advocate, 2019; The Star, 2019). While calls for a national guaranteed basic income are yet to be realized, the Canadian government has taken steps to formally recognize food insecurity in the recently announced National Food Policy (Government of Canada, 2019). The National Food Policy, Canada's first-ever national food policy, may represent a move forward for national and more formalized actions to ameliorating food insecurity. While the national policy may represent an opportunity for addressing food insecurity in Canada, the impact will likely depend on how it is implemented, funded, and evaluated (Dachner & Tarasuk, 2018).

Though some suggest that food banks are incongruent with addressing poverty and food insecurity, as mentioned above, people involved with food banks have been active in advocating for policy change and in particular, for poverty reduction and basic income programs. For example, in their reports on 2019 Federal Policy Recommendations, Food Banks Canada (2019b)

recommended the development of a basic income program to address poverty. Similar recommendations and calls for government action to address poverty have been put forth by provincial and regional food banking networks (Feed Ontario, 2020; Greater Vancouver Food Bank, 2016; Ottawa Food Bank, 2018). Furthermore, the results from study 1 demonstrated how some food bank staff and volunteers actively advocated for poverty reduction in their communities. These findings provide further support for Wakefield and colleagues' (2013) exploration of how emergency food agencies have acknowledged and responded to the critiques outlined above. Thus, through shifting practices, food banks may still not have the capacity to ameliorate long-term food insecurity but have found ways to engage in different strategies in response to the needs of the people and communities that they serve. Through these actions, food banks may better align with those arguing for formal policies and actions that take aim at the root causes of food insecurity.

While the findings of this dissertation suggest that food banks may not be a solution to chronic insecurity, they also offer evidence on the ways in which food banks may present strategic opportunities in working to address household and community food insecurity as well as related needs and issues. As stated above, many food bank staff and volunteers are aware that poverty, housing, cost of living, and inadequate income are among the factors that are intrinsically tied to experiences of food insecurity. In Canada, people involved with food banks have first-hand knowledge of who is impacted by food insecurity and how they are affected; thus, they may be important collaborators in efforts to raise awareness and advocate for policy change. Moreover, food banks are common and often long-established resources within communities across the country that have contact with populations who may be marginalized and hard-to-reach. Therefore, these may be effective locations to target programs that aim to address

food insecurity, and the dietary, health, and social outcomes that are known to correlate with food insecurity (Wetherill et al., 2019).

Implications

There is a dearth of research to describe and evaluate distinct food bank practices and characteristics in a Canadian context. Moreover, prior studies have largely been limited to cross-sectional designs; thus, by examining food insecurity and food bank access over a six month period, the studies presented in this dissertation provide new insights into the longer-term nature of these topics. These novel findings also contribute to addressing gaps in the literature and illuminate directions for future investigation. While the results contribute to the scientific evidence on food banking and food insecurity, this research additionally carries implications for practice and policy.

The findings presented in this dissertation may be used to inform food banking and policymaker decisions. These studies provide information on the characteristics of current food banking practices and the factors that enabled or impeded adopting or adapting new practices. Moreover, evidence on the qualitative experiences and quantitative outcomes may help inform food banks in their decisions to continuing or changing their practices in order to better meet the needs of the people they serve. The results on longer-term food insecurity and food bank access suggest that there is a need for more effective food security and poverty reduction policies to address these issues.

Limitations

There are limitations of this dissertation that should be noted. First, the samples for all three studies were drawn from one Canadian city and may be of limited generalizability, particularly as there can be considerable variation in how food banks operate between cities, provinces, and countries. The organization and availability of food banks can vary between geographic areas within Canada and certainly vary between high-income countries. Moreover, policies related to food security, poverty reduction, and other related factors can differ considerably between provinces and countries.

The sample of food banks included in this dissertation was limited to medium to large agencies (i.e., serve over 400 people per month) that were willing to take part in the studies. Therefore, this was not a random sample of food banks and it may not be representative of smaller agencies. In addition, the language restrictions of the three studies may have systemically excluded certain populations. Studies 1 and 2 were limited to English-speaking adults and study 3 was limited to French or English-speaking adults. The author acknowledges that there are people who access food banks in Ottawa who are not comfortable speaking in French or English and that this inclusion criteria may have been a barrier to participation for certain groups, such as recent immigrants to Canada. Due to budgetary and research team limitations, it was not feasible to facilitate data collection in additional languages. This limitation may affect the generalizability of the results.

The author acknowledges there is a risk that qualitative analyses may be subject to researcher bias, which may have affected the findings presented. Steps were taken to minimize the risk of researcher bias in the qualitative analyses of studies 1 and 2.

For study 3, participants who did not take part in both time points were deleted list-wise; this should be noted as a limitation due to the loss of information from incomplete cases. Some of the survey methods employed to collect data in study 3 may have increased the risk of participant recall and social desirability bias. While a strength of studies 2 and 3 was the inclusion of a follow-up time point, six months is a relatively brief period of time and only one follow-up time point was included.

Future Directions

As stated above, food bank operations and the policies that can affect demand for food banks vary across Canada and between high-income countries. Therefore, qualitative investigations of food banking characteristics and strategies in distinct contexts are needed. Future research may consider replicating the studies presented in this dissertation in different geographic regions, including rural areas. Moreover, future investigations are needed to explore how the perspectives and associations examined in this dissertation intersect with gender, ethnicity, race, immigration status (e.g., examining experiences of recent immigrants to Canada), and other aspects of health equity.

Mixed-methods approaches should be employed to examine the relationships between food banking characteristics and food insecurity as well as related outcomes, such as dietary and health outcomes, while providing a description of the context in which the food banks operate. Future investigations on the associations between food banking and food insecurity may consider including a comparison group of people who are food insecure but have not accessed food banks. These comparisons would elucidate any unique contributions of food bank access on food insecurity and related outcomes.

This dissertation presented novel findings on food banking characteristics, including the choice model of food distribution and food banks integrated within CRCs, and the associations with food insecurity and diet. Further study of the choice model and CRC characteristics are needed, particularly in Canadian contexts, to better our understanding of how these characteristics affect the food security and well-being of the people who access them. Finally, longer-term longitudinal studies are needed to examine patterns and experiences of chronic food insecurity and to determine the long-term effects of food bank access and food banking characteristics.

Conclusions

The findings presented in this dissertation offer evidence on the evolving nature of food banking, experiences of accessing these agencies, and on the associations between operational characteristics of food banks and food insecurity. Food banks in Canada are shifting how they operate as they acknowledge their short-falls and challenges of responding to food insecurity. Operational characteristics, including the choice model of food distribution and integration within a CRC, were associated with improvements in food security and diet over a six month period. While some of the characteristics show promise, longer-term access to food banks and experiences of food insecurity persist as a pervasive issue in Canada. These findings highlight the need to advocate for policy changes and more formal approaches to addressing the root causes of long-term food insecurity.

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