MEAL EXCHANGE

SOCIAL CONNECTEDNESS FELLOWSHIP PROGRAM

Exploring the Intersection of Post-Secondary Student Food Insecurity and Mental Health

Implications for Current and Future Post-Secondary Student Programming and Services

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EXECUTIVE SUMMARY

There remains a dearth of information on how food insecurity intersects with mental health. This qualitative study explores the intersection of post-secondary student food insecurity and mental health and how its findings can be used to support post-secondary student food security programming and services. First, a search of the grey and academic literature was done to better understand the current landscape of food insecurity and mental health among post-secondary students in Canada. Second, to capture the voices and thoughts of a wide range of stakeholders across Canada, interviews were conducted with post-secondary students, student leaders, campus staff, and research experts who work in, are involved in, or have lived experiences with food insecurity, mental health, and student wellness. A thematic analysis of these interviews was conducted to determine the most prevalent and dominant themes shared by interviewees. The findings from this analysis demonstrated that food insecurity among students could affect their mental health by impacting their sense of agency, and personal identity, creating social isolation and community exclusion, and seriously affecting academic performance.

Three recommendations have emerged from this study to better support the post-secondary student and campus community in taking action on the intersection between food insecurity and mental health. The first recommendation is to increase awareness and exposure to food supports and programs among post-secondary students, particularly during critical transitionary periods (i.e., moving onto the campus, moving into student housing, etc.), as these are highly stressful periods for students. The second is to promote a human dignity-based approach to food security programming and support so that students can access resources without fear of alienation and isolation from their community. The third is to encourage cross-sectoral collaboration so that campuses can employ holistic measures to take action on food insecurity and mental health.

Ultimately, addressing the intersection of food insecurity and mental health among post-secondary students will require real, tangible action that brings various stakeholders from the community together.

INTRODUCTION

Key Terms

Food insecurity**:** Food insecurity is inadequate or insecure access to food (both in quantity and quality).[1] It is experienced along a gradient and can be classified as marginal, moderate, or severe.[2] Individuals who experience marginal to moderate food insecurity can face challenges related to food access. This includes a lack of choice over food options or compromising on the quality or quantity of food consumed due to financial constraints. Individuals who face severe food insecurity can face challenges such as skipping meals, having reduced food intake, developing disordered eating behaviours, or going through periods without consuming food.

Mental health: Mental health is a state of well-being that includes our emotional, psychological, and social well-being.[3] Taking care of and recognizing the importance of mental health is important as it can help individuals determine how they cope with stress, relate to others, contribute to their community, and make choices. A significant element of mental health is psychological well-being.

Psychological well-being: Psychological well-being comprises 6 key factors.[4] These factors include:

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[1] Jane Y. Polsky and Heather Gilmour, "Food Insecurity and Mental Health during the COVID-19 Pandemic," *Health Reports* 31, no. 12 (December 16, 2020): 3–11, https://doi.org/10.25318/82-003-x202001200001-eng.
[2] Nathalie Carron and Jacob Plunkett-Latimer, "Canadian Income Survey: Food Insecurity and Unmet Health Care Needs, 2018 and 2019," January 7, 2022, https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2021009-eng.htm.
[3] "Mental Health: Strengthening Our Response," June 17, 2022, https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response.
[4] Carol D. Ryff, "Psychological Well-Being Revisited: Advances in Science and Practice," *Psychotherapy and Psychosomatics* 83, no. 1 (2014): 10–28, https://doi.org/10.1159/000353263.

- **Purpose in life** – the extent to which individuals feel that their lives have meaning, purpose, and direction.
- **Autonomy** – the extent to which individuals feel they view themselves has having control over their lives and decisions.
- **Personal growth** – the extent to which individuals can use their talents and potential.
- **Environmental mastery** – the extent to which individuals feel that they are able to manage their life situations.
- **Positive relationships** – the extent to which individuals feel connections/ties with significant others.
- **Self-acceptance** – the extent to which individuals feel that they have acceptance of themselves.

Social isolation: Social isolation and the inability to feel/be a part of a community can harm mental health and psychological well-being. The Samuel Centre for Social Connectedness (SCSC) has defined social isolation as the "lack of connection to people, place, purpose, and power".[5] SCSC explains that social isolation can 'impede a person from forming meaningful relationships, exercising agency, engaging in authentic expression, feeling a stake in collective outcomes, or realizing a sense of mission as part of the bigger whole."[6]

Overview

[5] "About Us - Samuel Centre For Social Connectedness — Samuel Centre For Social Connectedness," accessed August 19, 2022, https://www.socialconnectedness.org/about-us/.
[6] "About Us - Samuel Centre For Social Connectedness — Samuel Centre For Social Connectedness," accessed August 19, 2022, https://www.socialconnectedness.org/about-us/.

Post-secondary students across Canada are significantly and uniquely more vulnerable to food insecurity due to factors including reduced income, limited education on food insecurity, and limited awareness of and access to resources.[7] Food insecurity among post-secondary students has long been overlooked due to the "starving student"[8] stereotype and ideology, which normalizes the lack of access to healthy food during post-secondary studies. In demystifying food insecurity among post-secondary students, one must also understand that a food insecure post-secondary student can describe a spectrum of people. In other words, a food insecure post-secondary student can encompass various ages, genders, and ethnicities. In recent years, more attention has been given to the post-secondary food insecurity crisis.

Consequently, there continues to be a dearth of information and research available on this topic.[9] What is more, data from Meal Exchange's 2021 National Student Food Insecurity Report demonstrated that higher percentages of 2SLGBTQIA+, Black, Indigenous, and racialized students identified as being food insecure compared to their peers.[10] The lack of access to good food has serious

[7] Sarah Dawn Lee et al., "Food Insecurity among Postsecondary Students in Developed Countries: A Narrative Review," *British Food Journal* 120, no. 11 (January 1, 2018): 2660–80, https://doi.org/10.1108/BFJ-08-2017-0450.
[8] Lisa Henry, "Understanding Food Insecurity Among College Students: Experience, Motivation, and Local Solutions," *Annals of Anthropological Practice* 41, no. 1 (2017): 6–19, https://doi.org/10.1111/napa.12108.
[9] Nayantara Hattangadi et al., "'Everybody I Know Is Always Hungry…But Nobody Asks Why': University Students, Food Insecurity and Mental Health," *Sustainability* 11, no. 6 (January 2019): 1571, https://doi.org/10.3390/su11061571.
[10] Brittany Maguire, Rohini Mohanlal, and Vyshanve Sivasankar, "2021 National Student Food Insecurity Report -2.Pdf," 2021, https://drive.google.com/file/u/1/d/1I9OeMAK3XR7Ki5p1kCxjTY6KdGREusXe/view?usp=sharing&usp=embed_facebook.

negative impacts on a person's nutritional, physical, emotional, and mental health.[11]

The 2021 National Student Food Insecurity Report found that 56.8% of post-secondary students who were surveyed experienced food insecurity.[12] Additionally, this report has found that the COVID-19 pandemic has contributed to worsening food insecure conditions among post-secondary students, with 38.4% of students reporting that their ability to maintain healthy eating habits were negatively affected, and 20.5% of students reporting that COVID-19-related fear and anxiety made it significantly more difficult to access food.[13] At the same time, the Spring 2016 National College Health Assessment (NCHA), a national online survey that collects information on students' health behaviours, attitudes, and perceptions, indicated that depression, anxiety, and suicide attempts are increasing among Canadian post-secondary students.[14] Importantly, available research on this topic has shown that a post-secondary student experiencing food insecurity can experience higher levels of mental distress, such as anxiety, sadness, stress, worry, eating disorders, and depression.[15] A study examining household food insecurity status and mental health of Canadian adults between

[11] Ibid.
[12] Ibid.
[13] Brittany Maguire, Rohini Mohanlal, and Vyshanve Sivasankar, "2021 National Student Food Insecurity Report -2.Pdf," 2021, https://drive.google.com/file/u/1/d/1l9OeMAK3XR7Ki5p1kCxjTY6KdGREusXe/view?usp=sharing&usp=embed_facebook.
[14] Brooke Linden, Randall Boyes, and Heather Stuart, "Cross-Sectional Trend Analysis of the NCHA II Survey Data on Canadian Post-Secondary Student Mental Health and Wellbeing from 2013 to 2019," *BMC Public Health* 21, no. 1 (March 25, 2021): 590, https://doi.org/10.1186/s12889-021-10622-1.
[15] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

18-64 years old found there to be a significant relationship between food insecurity and poor, self-reported mental health.[16]

Another study examining the relationship between the food insecurity spectrum and mental health outcomes found that if a moderately food insecure household in Canada were to become food secure, a 14% reduction in depressive thoughts might be expected.[17] A third study examining food insecurity and suicidal ideation among 5,270 Canadian adults found that those experiencing moderate and severe food insecurity were more likely to experience suicidal ideation.[18] Furthermore, individuals who are already struggling with mental illness may be at a greater risk for food insecurity.[19] Overall, this evidence has so far demonstrated that as food insecurity worsens, so does mental health; however, it is not yet clearly understood these two challenges overlap to impact post-secondary students in Canada.

An important actor within the space of post-secondary student food insecurity is Meal Exchange, a nationally registered charity dedicated to empowering students and increasing access to good food for students.[20] A current

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[16] Valerie Tarasuk et al., "The Relation between Food Insecurity and Mental Health Care Service Utilization in Ontario," *The Canadian Journal of Psychiatry* 63, no. 8 (August 1, 2018): 557–69, https://doi.org/10.1177/0706743717752879.

[17] Geneviève Jessiman-Perreault and Lynn McIntyre, "The Household Food Insecurity Gradient and Potential Reductions in Adverse Population Mental Health Outcomes in Canadian Adults," SSM - Population Health 3 (December 1, 2017): 464–72, https://doi.org/10.1016/j.ssmph.2017.05.013.

[18] Karen M. Davison, Gillian L. Marshall-Fabien, and Angela Tecson, "Association of Moderate and Severe Food Insecurity with Suicidal Ideation in Adults: National Survey Data from Three Canadian Provinces," Social Psychiatry and Psychiatric Epidemiology 50, no. 6 (June 2015): 963–72, https://doi.org/10.1007/s00127-015-1018-1.

[19] Valerie Tarasuk et al., "The Relation between Food Insecurity and Mental Health Care Service Utilization in Ontario," *The Canadian Journal of Psychiatry* 63, no. 8 (August 1, 2018): 557–69, https://doi.org/10.1177/0706743717752879.

[20] "About Us," Meal Exchange, accessed August 19, 2022, https://www.mealexchange.com/about-us.

priority of this organization is to understand better how the overlap between food insecurity and mental health impacts a student's well-being, community belonging, and livelihood so that they can be better supported on their campuses and optimally commit to their studies.

With the prevalence of campus food insecurity and the rise of mental health issues among post-secondary students, it will be important to better understand 1) the current state of student food insecurity and its impact on mental health, and 2) how Meal Exchange's digital legacy can better support student leaders and campus groups to understand and act on the overlap between food insecurity and mental health. The research question addressed in this study is "what is the intersection between food insecurity and mental health among post-secondary students in Canada?"

Through a literature search, environmental scan, and interviews with student leaders and campus groups, the goals have this study has been to:

1) Provide a better understanding of the nature and intersection of food insecurity and mental health among post-secondary students in Canada.
2) Provide a resource to support student food insecurity projects and post-secondary campuses to address these intersecting challenges better.

LITERATURE REVIEW

Food Insecurity

The 2020 Canadian Community Health Survey found 9.6% of Canadians to have faced food insecurity to some extent.[21] StatsCan has found that a significant determinant of health, and one that is closely associated with food insecurity, is limited income or financial constraints.[22] Household food insecurity is more prevalent among low-wage workers, workers in part-time, short-term, or precarious jobs, racialized workers, and workers providing for multiple dependents with a single income.[23] Other groups who are significantly more vulnerable to food insecurity are unemployed individuals, persons experiencing homelessness, households with children, lone-parent families, and individuals whose primary source of income comes from government social assistance.[24] However, it is important to understand that food insecurity is not just an issue of poverty. In the USA, food insufficiency is a marker used by the Census Bureau to measure if households had enough food to eat for seven days. Census data from the USA found that food insufficiency levels rose among *all* income levels.[25] Notably, households in the USA with annual incomes between $50,000 to $75,000 had the sharpest decline in food sufficiency levels during the COVID-19 pandemic.[26] Food insecurity can also result from a temporary crisis causing situational poverty, such

[21] Jane Polsky and Didier Garriguet, "Household Food Insecurity in Canada Early in the COVID-19 Pandemic," February 16, 2022, https://www150.statcan.gc.ca/n1/pub/82-003-x/2022002/article/00002-eng.htm.
[22] Ibid.
[23] Ibid.
[24] Ibid.
[25] US Census Bureau, "Measuring Household Experiences during the Coronavirus Pandemic," Census.gov, accessed August 19, 2022, https://www.census.gov/householdpulsedata.
[26] Ibid.

as sudden unemployment, an injury, divorce, severe health problems, or environmental disasters.[27]

In Canada, the current state of inflation poses a significant risk to food security.[28] According to Statistics Canada, the inflation rate in February 2022 reached its largest increase since August 1991, at 5.7%.[29] The rising price of groceries, most recently increasing by 9.7% in April 2022 relative to April 2021, has raised significant alarms.[30] Inflation has increased the cost of food alongside other necessities, including housing, energy, clothing, rent, shelter, and transportation. For example, in Toronto, Ontario, the average monthly rent in February 2022 for a one-bedroom unit is estimated to be $2,044 which is an increase of 12.7% compared to 2021.[31] At the same time, it is estimated that an average family of four in Canada may spend nearly $1,000 per month on groceries in 2022.[32] Accounting for other monthly costs, such as transportation and bill payments, leaves individuals with very tight budget financial constraints to spend on important necessities. Food-insecure households already spend significantly greater portions of their budgets on essential costs, such as rent, mortgages, clothing, and

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[27] Alexandria Heslel, "You Cannot Eat a House: The Hunger Secrets in Middle Class," Hunger and Health, September 8, 2017, https://hungerandhealth.feedingamerica.org/2017/09/cannot-eat-house-hunger-secrets-middle-class/.

[28] Stephanie Hogan, "How the Rising Cost of Food Adds up in Your Grocery Cart | CBC News," June 24, 2022, https://www.cbc.ca/news/business/food-prices-inflation-groceries-1.6499640.

[29] Statistics Canada, "The Daily — Consumer Price Index, February 2022," March 16, 2022, https://www150.statcan.gc.ca/n1/daily-quotidien/220316/dq220316a-eng.htm.

[30] Statistics Canada, "The Daily — Rising Prices Are Affecting the Ability to Meet Day-to-Day Expenses for Most Canadians," June 9, 2022, https://www150.statcan.gc.ca/n1/daily-quotidien/220609/dq220609a-eng.htm.

[31] Hannah Jackson, "Average Rental Prices in Toronto Rise Year-over-Year after Dropping in 2021 - Toronto | Globalnews.Ca," March 14, 2022, https://globalnews.ca/news/8681672/toronto-rental-prices-feb-2022/.

[32] Mike Visser and Richard Southern, "Grocery Prices to Keep Soaring in 2022," CityNews Toronto, December 30, 2021, https://toronto.citynews.ca/2021/12/30/grocery-prices-2022/.

transportation. Now with the budgeting constraints caused by the wide-reaching impacts of inflation on these essential items, these households may be more likely to make financial compromises when it comes to food.[33]

People experiencing food insecurity are more likely to have nutrient-deficient diets with lower consumption of dairy products, fruit, and vegetables, compared to people who are food secure.[34] This means that people experiencing food insecurity are more likely to experience nutrient deficiencies, which can result in poorer physical health outcomes and increased vulnerability to chronic health conditions such as diabetes, hypertension, and arthritis.[35] For children, food insecurity can have serious repercussions on developmental growth and health.[36] However, the health impacts of food insecurity includes not just physical health, but also emotional, mental, and social health.[37] Researchers have found that as the severity of food insecurity increases, so does the risk of experiencing depression, anxiety disorders, mood disorders, and/or suicidal thoughts.[38]

In discussing food insecurity, it is important to understand that this public health challenge does not affect everyone equally. Food insecurity affects 1 in 8

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[33] PROOF, "What Does Record Inflation Mean for Household Food Insecurity in Canada?," PROOF (blog), March 16, 2022, https://proof.utoronto.ca/2022/what-does-record-inflation-mean-for-household-food-insecurity-in-canada/.

[34] Jo-Anne Puddephatt et al., "'Eating to Survive': A Qualitative Analysis of Factors Influencing Food Choice and Eating Behaviour in a Food-Insecure Population," *Appetite* 147 (April 1, 2020): 104547, https://doi.org/10.1016/j.appet.2019.104547.

[35] Ibid.

[36] Danielle Gallegos et al., "Food Insecurity and Child Development: A State-of-the-Art Review," International Journal of Environmental Research and Public Health 18, no. 17 (August 26, 2021): 8990, https://doi.org/10.3390/ijerph18178990.

[37] Valerie Tarasuk et al., "The Relation between Food Insecurity and Mental Health Care Service Utilization in Ontario," *The Canadian Journal of Psychiatry* 63, no. 8 (August 1, 2018): 557–69, https://doi.org/10.1177/0706743717752879.

[38] Ibid.

households in Canada; however, racialized Canadians are disproportionately impacted by food insecurity.[39] Food insecurity rates are highest in Nunavut, where Indigenous households make up the majority of the population.[40] According to Canada's 2016 Census of the Population, the Black population in Canada makes up 3.5%[41] of the country's total population, and Indigenous peoples in Canada make up 4.9%[42] of the total population. Despite making up a smaller portion of the total population in Canada, Black Canadians and Indigenous peoples experience disproportionately higher levels of food insecurity. The 2017-18 Canadian Community Health Survey found that across Canada, 28.2% of Indigenous households and 28.9% of Black households are food insecure, while only 11.1% of White households are food insecure.[43] Indigenous peoples are significantly more likely to face food insecurity compared to white Canadians, even when accounting for factors like homeownership, income, and education levels which are considered to be protective factors against food insecurity.[44] It is because of deeply embedded racial biases and policies that this disparity between white and racialized Canadians persists when it comes to food insecurity.[45]

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[39] Tim Li, "When It Comes to Tackling Food Insecurity, Tackling Anti-Black Racism Is an Important Part of the Puzzle," *PROOF* (blog), October 26, 2021, https://proof.utoronto.ca/2021/anti-black-racism/.
[40] Samantha Burton, "Food Insecurity in Nunavut: An Ongoing Issue | Canada Without Poverty," https://cwp-csp.ca/, June 1, 2021, https://cwp-csp.ca/2021/06/food-insecurity-in-nunavut-an-ongoing-issue/.
[41] Statistics Canada Government of Canada, "Diversity of the Black Population in Canada: An Overview," February 27, 2019, https://www150.statcan.gc.ca/n1/pub/89-657-x/89-657-x2019002-eng.htm.
[42] Government of Canada; Crown-Indigenous Relations and Northern Affairs Canada;, "First Nations," fact sheet; resource list, November 14, 2008, https://www.rcaanc-cirnac.gc.ca/eng/1100100013791/1535470872302.
[43] Valerie Tarasuk and Andy Mitchell, "Household Food Insecurity in Canada:," *Topics in Clinical Nutrition* 20, no. 4 (October 2005): 299–312, https://doi.org/10.1097/00008486-200510000-00003.
[44] K Jefferies et al., "Food Security in African Canadian Communities: A Scoping Review - PubMed," accessed August 10, 2022, https://pubmed.ncbi.nlm.nih.gov/34149022/.
[45] Ibid

Post-Secondary Student Food Insecurity

A 2016 Meal Exchange survey conducted at 5 Canadian Universities (Brock University, Dalhousie University, Lakehead University, Toronto Metropolitan University, and University of Calgary) found that about 2 in 5 students experience food insecurity.[46] However, beyond this survey, there has been little research conducted on food insecurity among post-secondary students in a Canadian context.[47]

Quantitative data has shown that in Canada, about 40% of post-secondary students experience food insecurity, which is higher than the prevalence rate among the general Canadian population which sits at 12%.[48] [49] The existing literature has demonstrated that post-secondary students are susceptible to experiencing transitory food insecurity due to the unanticipated and frequent expenses associated with higher education.[50] Transitory food insecurity is experienced as the inadequate access to food over a short period of time. It is defined as “a sudden drop in the ability to produce or access enough food to

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[46] Brittany Maguire, Rohini Mohanlal, and Vyshanve Sivasankar, “2021 National Student Food Insecurity Report -2.Pdf,” 2021, https://drive.google.com/file/u/1/d/1l9OeMAK3XR7Ki5p1kCxjTY6KdGREusXe/view?usp=sharing&usp=embed_facebook.

[47] Nayantara Hattangadi et al., “‘Everybody I Know Is Always Hungry…But Nobody Asks Why’: University Students, Food Insecurity and Mental Health,” *Sustainability* 11, no. 6 (January 2019): 1571, https://doi.org/10.3390/su11061571.

[48] Brittany Maguire, Rohini Mohanlal, and Vyshanve Sivasankar, “2021 National Student Food Insecurity Report -2.Pdf,” 2021, https://drive.google.com/file/u/1/d/1l9OeMAK3XR7Ki5p1kCxjTY6KdGREusXe/view?usp=sharing&usp=embed_facebook.

[49] Jane Polsky and Didier Garriguet, “Household Food Insecurity in Canada Early in the COVID-19 Pandemic,” February 16, 2022, https://www150.statcan.gc.ca/n1/pub/82-003-x/2022002/article/00002-eng.htm.

[50] Nayantara Hattangadi et al., “‘Everybody I Know Is Always Hungry…But Nobody Asks Why’: University Students, Food Insecurity and Mental Health,” *Sustainability* 11, no. 6 (January 2019): 1571, https://doi.org/10.3390/su11061571.

maintain good nutritional status."[51] A driver of this can be limited financial resources.[52] Post-secondary students are uniquely vulnerable to income-related strains, impacting their access to food and other basic needs. These include mandatory tuition fees, living costs, transportation, and extracurricular expenses.[53] With the many expenses incurred by post-secondary students, food-related expenses are often considered discretionary within this population.[54] In other words, food-related expenses may be budgeted out of a student's expenses to meet other basic needs (i.e., tuition, cost of living, etc.).[55]

Adding to already existing income-related pressures experienced by post-secondary students are the rising tuition costs, unaffordable housing, and expensive campus food environments.[56] In fact, on average, between 2006 and 2016, tuition fees at Canadian universities have risen by 40%.[57] In the face of rising costs and tuition, youth have also seen higher unemployment rates throughout the COVID-19 pandemic due to service sector lay-offs and closures. The combination of rising grocery prices, increasing rent costs, cost inflation of basic necessities, and rising tuition costs, there are extremely significant strains placed on students

[51] Ibid.
[52] Robert Hughes et al., "Student Food Insecurity: The Skeleton in the University Closet," February 24, 2011, https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1747-0080.2010.01496.x.
[53] Ibid.
[54] Ibid.
[55] Ibid.
[56] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[57] Statistics Canada Government of Canada, "The Daily — Tuition Fees for Degree Programs Increase in 2020/2021," September 21, 2020, https://www150.statcan.gc.ca/n1/daily-quotidien/200921/dq200921b-eng.htm.

to have enough money left at the end of the day to purchase adequate and nutritious food.[58]

When breaking down post-secondary student insecurity by demographic, particularly by race and ethnicity, it is evident that racialized post-secondary students in Canada experience the highest rates of food insecurity, which parallels national findings in the general Canadian population.[59] The 2021 National Student Food Insecurity Report conducted by Meal Exchange found that Indigenous, Latinx, and Black post-secondary students experienced the highest levels of food insecurity, while White students experienced the lowest rates.[60] The same National Report found that among post-secondary students who identified as lesbian, gay, or bisexual, 69.3% experienced food insecurity.[61] Rates of food insecurity were also the highest among international students due to high international tuition fees and the cost of housing.[62] Unaffordable and precarious housing is a significant determinant of food insecurity, with the National Report finding that 100% of students who identified as living in precarious housing reported experiencing severe food insecurity.[63] Moreover, students who primarily fund their education through a bank or government loans/grants experience significantly high rates of food insecurity. Of the students' surveys, 64% of those on government loans were food insecure.[64] This is because of the nature of inadequate loans and grants that

[58] Brittany Maguire, Rohini Mohanlal, and Vyshanve Sivasankar, "2021 National Student Food Insecurity Report -2.Pdf," 2021, https://drive.google.com/file/u/1/d/1l9OeMAK3XR7Ki5p1kCxjTY6KdGREusXe/view?usp=sharing&usp=embed_facebook.
[59] Ibid.
[60] Ibid.
[61] Ibid.
[62] Ibid.
[63] Ibid.
[64] Ibid.

do not provide enough financial assistance for post-secondary students to meet their basic needs, including dietary needs.[65]

An important protective factor against food insecurity is food literacy, which includes skills related to cooking, food budgeting, meal planning, and food storage[66]. However, studies have demonstrated that most post-secondary students do not have adequate levels of food literacy skills to engage in these activities, which increases their risk of food insecurity.[67] What is more, the busy academic and extracurricular schedules of students can make it more difficult for them to engage in grocery shopping, meal planning, and cooking.[68] There also continues to be little focus made by post-secondary institutions to widely emphasize the importance of food literacy skills among their students.[69]

To cope with food insecurity, post-secondary students will often be forced to compromise the nutritional quality of the food they consume by leaning towards cheaper foods, which often tend to be less nutrient dense and processed.[70] One study found that 60% of students experiencing food insecurity sacrifice the nutritional quality of their meals.[71] Another study found that students experiencing food insecurity engage in coping strategies that include rationing their food,

[65] Ibid.
[66] Rebecca L. Hagedorn et al., "Expenditure, Coping, and Academic Behaviors among Food-Insecure College Students at 10 Higher Education Institutes in the Appalachian and Southeastern Regions," Current Developments in Nutrition 3, no. 6 (June 2019): nzz058, https://doi.org/10.1093/cdn/nzz058.
[67] Ibid.
[68] Rebecca L. Hagedorn-Hatfield, Lanae B. Hood, and Adam Hege, "A Decade of College Student Hunger: What We Know and Where We Need to Go," Frontiers in Public Health 10 (2022), https://www.frontiersin.org/articles/10.3389/fpubh.2022.837724.
[69] Ibid.
[70] Ibid.
[71] Rebecca L. Hagedorn et al., "Expenditure, Coping, and Academic Behaviors among Food-Insecure College Students at 10 Higher Education Institutes in the Appalachian and Southeastern Regions," Current Developments in Nutrition 3, no. 6 (June 2019): nzz058, https://doi.org/10.1093/cdn/nzz058.

skipping meals, seeking out community events offering free meals, and using food banks and support programs.[72]

Despite the alarming and worsening state of food insecurity among post-secondary students, studies underscored how food insecurity on post-secondary campuses continues to be highly normalized and accepted by our society today, in what is known as the "starving student" stereotype.[73] This stereotype accepts the narrative that not having access to enough and healthy food during higher education is a normal part of being a post-secondary student.[74] Unfortunately, many students have also normalized the experience of food insecurity in post-secondary education and are often reluctant to seek help. A part of this reluctance has to do with the prevalent external societal stigma and shame associated with accessing food banks or support programs.[75] This external shame has often been internalized by many to create feelings of embarrassment and limited control in being able to access food on their own accord.[76] Moreover, research conducted in the United States and Canada has found that a lack of education around food insecurity among post-secondary students impacts how these students self-identify as food insecure.[77] This lack of education and awareness on food insecurity, how it can manifest, and how it can impact oneself

[72] Elizabeth A. Smith et al., "Food Insecurity, Carotenoid Values and Coping Strategies of Students on a Mid-Sized College Campus," American Journal of Health Studies 35, no. 3 (December 31, 2020), https://doi.org/10.47779/ajhs.2020.240.
[73] Olivia Neff, "Food Insecurity Prevalence on College Campuses, the Stigma Associated with Food Pantries and the Best Practices Moving Forward," December 2019, 21.
[74] Ibid.
[75] Ibid.
[76] Ibid.
[77] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

can act as a significant barrier for students in seeking out important preventive and interventive supports and programs to mitigate food insecurity and its consequences.

Along with limited knowledge of the concept of food insecurity, many post-secondary students have limited awareness or exposure to food resources and programs available within their campuses, wider communities, and in their local food environments.[78] This limited knowledge of resources can make it difficult for students to know where affordable food can be purchased, where meal support programs can be accessed, where they can seek support in developing skills in food preparation and storage, and where they can access important culturally or religiously relevant foods.[79]

It is clear that the combination of many factors, including high tuition costs, the rising cost of living, limited awareness of food literacy skills among students, and the social stigma and shame of food support programs and supports, creates a very dangerous reality for the life, health, and well-being of post-secondary students experiencing food insecurity.

The Current State of Post-Secondary Food Insecurity and Mental Health

While there is a scarcity of research examining the intersection of post-secondary student food insecurity with mental health in the Canadian context, several studies have highlighted the impact that food insecurity can have on the

[78] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[79] Mahitab Hanbazaza et al., "Food Insecurity Among International Post-Secondary Students Studying on a Canadian Campus: A Qualitative Description Study," *Canadian Journal of Higher Education* 51, no. 2 (August 8, 2021): 33–45, https://doi.org/10.47678/cjhe.vi0.188977.

psychological wellness of students. A study conducted in 2019 found that undergraduate university students in Canada experiencing severely high levels of food insecurity are much more likely to report psychological distress compared to their food secure counterparts.[80] Data from the University of Manitoba points reported that two-thirds of their students experiencing food insecurity reported having fair to poor mental health.[81] In another study, researchers found that children and youth between the ages of 12-24 who experience food insecurity are at a higher likelihood of self-reporting poor or fair mental health compared to their non-food insecure counterparts.[82] This is relevant given that over 75% of post-secondary students are between the ages of 17-27 years old, with the median age being 22.8.[83]

Food insecurity among post-secondary students has been found to increase the likelihood of depressive and anxious symptoms.[84] Food insecurity has also been associated with poor sleep quality among post-secondary students, which can worsen mental health outcomes among this population.[85] The COVID-19

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[80] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

[81] Meghan Entz, Joyce Slater, and Annette Aurélie Desmarais, "Student Food Insecurity at the University of Manitoba," Canadian Food Studies / La Revue Canadienne Des Études Sur l'alimentation 4, no. 1 (May 26, 2017): 139–59, https://doi.org/10.15353/cfs-rcea.v4i1.204.

[82] Fei Men, Frank J. Elgar, and Valerie Tarasuk, "Food Insecurity Is Associated with Mental Health Problems among Canadian Youth," *Journal of Epidemiology and Community Health* 75, no. 8 (August 2021): 741–48, https://doi.org/10.1136/jech-2020-216149.

[83] Statistics Canada Government of Canada, "The Daily — Canadian Postsecondary Enrolments and Graduates, 2015/2016," December 7, 2017, https://www150.statcan.gc.ca/n1/daily-quotidien/171207/dq171207c-eng.htm.

[84] Rachel A. Wattick, Rebecca L. Hagedorn, and Melissa D. Olfert, "Relationship between Diet and Mental Health in a Young Adult Appalachian College Population," Nutrients 10, no. 8 (July 25, 2018): E957, https://doi.org/10.3390/nu10080957.

[85] Hannah Peach, Jane Gaultney, and David Gray, "Sleep Hygiene and Sleep Quality as Predictors of Positive and Negative Dimensions of Mental Health in College Students. - PsycNET," accessed August 21, 2022, https://psycnet.apa.org/record/2017-04295-001.

pandemic has also had serious effects on the mental health of students experiencing food insecurity, as one study found post-secondary students to experience higher rates of psychological distress, loneliness, and suicidal behaviour.[86]

During times of stress, resilience is an important factor against poor mental health outcomes.[87] Social connectedness is an important element of this resilience. However, many students experiencing food insecurity have reported feeling high levels of social isolation, a lack of belonging, and being unsupported by their campus community.[88] Thus, this lack of social connectedness can worsen the mental health of food-insecure post-secondary students.[89]

Research has also found that many post-secondary students experiencing food insecurity experience constant feelings of anxiety and worry about having enough food.[90] However, these worries were then worsened by the stress of academic responsibilities.[91] Post-secondary students experiencing food insecurity are more likely to have lower grade point averages, difficulties concentrating at school, and drop-out rates in comparison to food-secure students.[92] Furthermore, a

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[86] Rita DeBate et al., "Food Insecurity, Well-Being, and Academic Success among College Students: Implications for Post COVID-19 Pandemic Programming," Ecology of Food and Nutrition 60, no. 5 (October 2021): 564–79, https://doi.org/10.1080/03670244.2021.1954511.

[87] Rachel A. Wattick, Rebecca L. Hagedorn, and Melissa D. Olfert, "Impact of Resilience on College Student Mental Health during COVID-19: Journal of American College Health: Vol 0, No 0," accessed August 22, 2022, https://www.tandfonline.com/doi/abs/10.1080/07448481.2021.1965145?journalCode=vach20.

[88] Anthony Meza et al., "'It's a Feeling That One Is Not Worth Food': A Qualitative Study Exploring the Psychosocial Experience and Academic Consequences of Food Insecurity among College Students," Journal of the Academy of Nutrition and Dietetics 119, no. 10 (October 2019): 1713-1721.e1, https://doi.org/10.1016/j.jand.2018.09.006.

[89] Ibid.

[90] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

[91] Ibid.

[92] Ibid.

systematic review–though they did not examine food insecurity–demonstrated that higher levels of student debt are associated with higher levels of stress among students, and a higher likelihood of experiencing poor mental health and depression.[93] Higher education is a path that individuals seek out with the hopes of obtaining a degree that may provide better health and social outcomes. However, foregoing meals in order to attend higher education should not be the reality of post-secondary students, as it has serious, harmful consequences on the lives and health of students.

METHODOLOGY

Research Overview

This qualitative study aimed to critically explore the impact of food insecurity on the mental health of post-secondary students in Canada using in-depth interviews. Interviews were conducted between June-August 2022. The following section provides a breakdown of the methodological approach used to conduct the interviews and the thematic analysis of these interviews.

Recruitment

Participants were recruited in several ways. These included 1) a recruitment callout on the Meal Exchange Instagram platform, monthly newsletter, and email network, and 2) direct email recruitment to food security initiatives, mental health organizations, and researchers working within the post-secondary student food insecurity and/or mental health space.

[93] Ibid.

Participants

A total of 10 interviews were conducted with post-secondary students, student leaders, campus staff/groups, research experts, and community organizations who are working, knowledgeable in, and/or have lived experiences within the spaces of food insecurity, mental health, and student wellness. While participants were recruited from across Canada, most of those interviewed were from Ontario, Canada from urban settings.

Data Collection

Interviews were conducted virtually through the online platform, Zoom. Participants were provided an interview guide before their online interview.

At the beginning of each interview, an informed consent process was conducted with participants in which verbal consent was obtained before proceeding to questions. The interviews aimed to gather insight into the needs and concerns of those working, knowledgeable in, and/or having lived experiences within post-secondary student food insecurity, mental health, and student wellness. In particular, the interview questions were designed to better understand participants' experiences, values, and opinions on post-secondary student food insecurity and the intersectional nature of food insecurity with mental health. Additionally, participants were asked for their recommendations in developing a resource to support post-secondary student food insecurity initiatives and campuses to better address this intersecting topic.

Data Processing and Analysis

Once the interviews were completed and transcribed, all transcripts were analyzed for recurring themes. Thematic analysis aims to better understand the themes of a data set and draw understanding from them. Themes are ideas that capture "...something important about the data in relation to the research question and represents some level of patterned response or meaning."[94] As a result, for the purpose of this study, themes were determined by prevalence. Within this study, prevalence of themes was based on two criteria: (1) prominence in data, and (2) if the research team found the theme to be extremely pertinent or important to the research, even if uncommon.

Limitations

A significant limitation to this method is the generalizability of this study's findings. Given that qualitative data is not intended to produce findings that are generalizable to a larger population, future quantitative research could be conducted to complement our findings. In addition, the sample size of this study is considered to be smaller than the minimum sample size required for a robust thematic analysis. [95]

Another limitation to generalizability is within the recruitment methods employed for this research. Participants were generally recruited through a process of convenience sampling. Convenience sampling meant that participants were either previously connected to Meal Exchange or held a prominent leadership position within their community. As a result, it is likely that these individuals are

[94]Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (January 1, 2006): 77–101, https://doi.org/10.1191/1478088706qp063oa.
[95] Ibid.

more engaged in their community than the average person and may also have stronger opinions regarding the development of an awareness resource compared to the general population.

A limitation also exists in the representativeness of those who were interviewed. While a recruitment call-out was made across Canada, most interviewed participants were from Ontario, Canada. This means that this study is limited in its geographical representation. This impacts the applicability of the findings and recommendations produced from this study to post-secondary institutions in rural settings and outside of Ontario, as their voices, opinions, and thoughts are not well accounted for.

Moreover, the literature review conducted for this study may be limited in its applicability to a Canadian context due to the lack of recent research examining food insecurity at Canadian post-secondary institutions. Most post-secondary student food insecurity literature examined in this study has come from the USA. It thus may not be entirely similar to the experiences of Canadian post-secondary students.

ISSUE, EVIDENCE, AND KEY FINDINGS

A thematic analysis was conducted to answer the following research question: “What is the intersection between food insecurity and mental health among post-secondary students in Canada?”. In consideration of this question, several themes were identified: (1) harm to one’s sense of agency, (2) social isolation and community exclusion, (3) negative impact on personal identity, and (4) implications on student success.

Theme #1: Harm to Sense of Agency

Having an inadequate or insecure source of income was a common driver of food insecurity expressed by several participants during the interviews. Post-secondary students who were interviewed described how their self-esteem and sense of agency were jeopardized when they did not have the funds available to access food and importantly, good quality, nutritious food. Student leaders working within the food insecurity space described how students, with limited income and small budgets, would often compromise their nutrition by turning towards cheaper, less nutritious food.[96] [97] In this way, having an inadequate source of income can make students feel as though they have a lack of power and autonomy over their food choices, which can jeopardize psychological well-being given that autonomy is one of the six factors influencing this form of well-being.[98]

"What happens is, they choose cheaper, less nutritious options because they are concerned about their cost of living, or their family's cost of living"[99]

Moreover, students described how their thinking was often preoccupied with wondering if they would be able to buy enough meals or groceries.[100] This preoccupation left them feeling as if they had no control over their lives, causing them to believe that their situation was a personal failing of their own, rather than their situation as being a consequence of larger societal and post-secondary institutional failings that do not protect post-secondary students from the risk and

[96] Karim, Fairuz. "Interview 8" July 2022
[97] Ibid. "Interview 10" July 2022
[98] Carol D. Ryff, "Psychological Well-Being Revisited: Advances in Science and Practice," *Psychotherapy and Psychosomatics* 83, no. 1 (2014): 10–28, https://doi.org/10.1159/000353263.
[99] Ibid. "Interview 8" July 2022
[100] Ibid. "Interview 9" July 2022

effects of food insecurity. These failings include the increasingly unaffordable food costs, rising housing costs, and expensive tuition fees that make it extremely difficult for students to afford their basic necessities.[101] Students expressed how the practice of self-blaming and personal shaming over not being able to access food can create feelings of low self-esteem, anxiety, and worry.[102] Moreover, studies have demonstrated that the preoccupation with thinking of food while experiencing food insecurity increases psychosocial stress,[103] as well as an increased risk of developing an eating disorder.[104] This illustrates the closely interwoven connection between food insecurity and mental health concerns. Eating disorders, classified as mental health disorders[105] are prevalent amongst post-secondary students due to the academic stresses of school, the transition into a new social environment, and higher rates of disordered eating patterns within this population.[106] However, food insecurity due to the rising cost of living and the lack of financial support from post-secondary institutions should not be why a student is at a greater risk of developing a long-term insecure relationship with food.

Furthermore, students who were interviewed expressed how they desired to have control over their financial situation, which resultantly caused them to avoid

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[101] Robert Hughes et al., "Student Food Insecurity: The Skeleton in the University Closet," February 24, 2011, https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1747-0080.2010.01496.x.
[102] Ibid. "Interview 4" July 2022
[103] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[104] Carolyn Minnick, "Are Experiences of Food Insecurity Associated with Disordered Eating among Young Adults Living in Canadian Urban Centers?," 2021., 53.
[105] "Eating Disorders | NAMI: National Alliance on Mental Illness," 2022, https://www.nami.org/About-Mental-Illness/Mental-Health-Conditions/Eating-Disorders.
[106] Daniel Eisenberg et al., "Eating Disorder Symptoms Among College Students: Prevalence, Persistence, Correlates, and Treatment-Seeking," Journal of American College Health : J of ACH 59, no. 8 (2011): 700–707, https://doi.org/10.1080/07448481.2010.546461.

asking for support from their families, even when they were struggling with finances and experiencing stress from their situation. For one student, this created sadness and worry[107].

"I was very stressed about jobs and everything, my mom [asked] 'Have you eaten? Do you have enough food? Do you have enough money for lunch?', and I just started crying. I was really sad because I was absolutely broke at the time; I wasn't working, I basically had no income per month. And I didn't know what to do. I did want to be financially independent, I didn't want to ask my parents for money, even though they were absolutely fine supporting me"[108]

A student also described the financial struggles that they, and many of their classmates, experienced from engaging in full-time unpaid co-op jobs.[109] With the lack of control over their income, many had to work one or multiple part-time jobs on top of their already full-time co-op position to afford their basic expenses. The student described how this created serious financial strain, causing them to constantly worry about having enough money to purchase food. In combination, this seriously harmed their perceived control and autonomy over their financial and nutritional situation and, in turn, their psychological well-being.[110] This finding is in line with a study conducted with undergraduate students experiencing food insecurity, who found that income generated from co-op positions may not be sufficient enough for students to pay their basic expenses and, consequently, act as a barrier to food security.[111] This points out another failure by post-secondary

[107] Ibid. "Interview 10" July 2022
[108] Ibid.
[109] Ibid.
[110] Ibid.
[111] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

institutions to ensure that their students are protected in the labour market and can receive adequate monetary compensation for their work.

Theme #2: Social Isolation and Community Exclusion

Participants described how social isolation is a significant part of food insecurity, and one that can create serious feelings of alienation, anxiety, depression, and sadness among post-secondary students.[112] [113] [114] [115] [116] [117] [118] [119] [120] [121] Participants and the literature explain how community inclusion and feelings of belonging are intrinsic to an individual's wellbeing, the post-secondary student experience, long term mental health, and resilience against poor mental health outcomes such as anxiety and depression.[122]

> *"You know, community, that's a huge part of their experience, and so feeling like they're belonging and they're a part of that community is something that a lot of post-secondary students prioritize… food insecurity is something that they fear could keep them away from that. One of the biggest barriers to accessing nutritious affordable food or accessing food at all is the stigma against it, [and] the perception of others."*[123]

Participants expressed how the fear of being socially isolated by one's peers can make food insecure students reluctant to seek assistance at food banks or pantries. This is largely due to the cultural stigma surrounding food insecurity

[112] Ibid. "Interview 1" June 2022
[113] Ibid. "Interview 2" June 2022
[114] Ibid. "Interview 3" June 2022
[115] Ibid. "Interview 4" June 2022
[116] Ibid. "Interview 5" June 2022
[117] Ibid. "Interview 6" June 2022
[118] Ibid. "Interview 7" July 2022
[119] Ibid. "Interview 8" July 2022
[120] Ibid. "Interview 9" July 2022
[121] Ibid. "Interview 10" July 2022
[122] Rebecca L. Hagedorn-Hatfield, Lanae B. Hood, and Adam Hege, "A Decade of College Student Hunger: What We Know and Where We Need to Go," Frontiers in Public Health 10 (2022), https://www.frontiersin.org/articles/10.3389/fpubh.2022.837724.
[123] Ibid. "Interview 9" July 2022

and accessing food banks.[124] [125] This social stigma may keep students away from accessing support to help them to feel accepted and less alienated by the broader student community.[126] This leaves post-secondary students who are already struggling with the significant challenge of food insecurity with the additional challenge of not being able to ask for help, because of a fear of social isolation, leaving them to struggle silently.[127] It is in this way that a lack of social support can take a serious toll on the mental health of food insecure students.

Participants discussed how food, and in particular communal eating, are important elements of community, especially post-secondary student communities.[128] [129] [130] [131] [132] Going out to eat with peers or going out for coffee in between classes are often shared eating experiences among students.[133] [134] In the interviews, participants explained how this can create a challenge for students experiencing food insecurity. They may be experiencing constant worry of having to balance their social lives with the ability to meet their basic needs (i.e., purchase

[124] Chloe Pineau et al., "Exploring Experiences of Food Insecurity, Stigma, Social Exclusion, and Shame among Women in High-Income Countries: A Narrative Review," *Canadian Food Studies / La Revue Canadienne Des Études Sur l'alimentation* 8, no. 3 (October 30, 2021), https://doi.org/10.15353/cfs-rcea.v8i3.473.
[125] Olivia Neff, "Food Insecurity Prevalence on College Campuses, the Stigma Associated with Food Pantries and the Best Practices Moving Forward," December 2019, 21.
[126] Aseel El Zein et al., "Why Are Hungry College Students Not Seeking Help? Predictors of and Barriers to Using an On-Campus Food Pantry," *Nutrients* 10, no. 9 (August 25, 2018): 1163, https://doi.org/10.3390/nu10091163.
[127] Ibid.
[128] Ibid. "Interview 1" June 2022
[129] Ibid. "Interview 2" June 2022
[130] Ibid. "Interview 3" June 2022
[131] Ibid. "Interview 6" June 2022
[132] Ibid. "Interview 9" July 2022
[133] Ibid. "Interview 10" July 2022
[134] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.

food), and in turn, the fear of being isolated from their peers.[135] [136] [137] The inability to form positive relationships with peers can jeopardize psychological well-being, which is key to positive mental health outcomes.[138] One participant explained how the constant worry of having to balance one's personal needs with being able to spend time with friends can negatively impact a student's mental health.

"The amount of anxiety that a student can experience just from trying to balance life with friends, your personal life, as well as your personal needs. [This] blurring of boundaries between the student's needs and wants…can definitely play a huge impact on the student's mental health at the time."[139]

Theme #3: Negative Impacts on Personal Identity

An important element of food security that was described during the interviews, and found within the literature, is that food security involves the ability to access both healthy and preferable foods, which allows an individual to live a functional life.[140] [141] [142] [143] This is because food is closely associated with our personal identities, cultures, histories, and traditions.[144] [145]

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[135] Ibid. "Interview 9" July 2022
[136] Ibid. "Interview 10" July 2022
[137] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[138] Carol D. Ryff, "Psychological Well-Being Revisited: Advances in Science and Practice," *Psychotherapy and Psychosomatics* 83, no. 1 (2014): 10–28, https://doi.org/10.1159/000353263.
[139] Ibid. "Interview 10" July 2022
[140] Ibid. "Interview 2" June 2022
[141] Ibid. "Interview 6" June 2022
[142] Ibid. "Interview 1" June 2022
[143] Mahitab Hanbazaza et al., "Food Insecurity Among International Post-Secondary Students Studying on a Canadian Campus: A Qualitative Description Study," *Canadian Journal of Higher Education* 51, no. 2 (August 8, 2021): 33–45, https://doi.org/10.47678/cjhe.vi0.188977.
[144] Ibid. "Interview 6" June 2022
[145] Mahitab Hanbazaza et al., "Food Insecurity Among International Post-Secondary Students Studying on a Canadian Campus: A Qualitative Description Study," *Canadian Journal of Higher Education* 51, no. 2 (August 8, 2021): 33–45, https://doi.org/10.47678/cjhe.vi0.188977.

"Food plays a role in reflecting someone's sense of identity - being able to access foods that are familiar, or that are important for you, is important for that." [146]

When campus food environments do not offer diverse food options that are culturally and/or religiously appropriate (i.e., halal, kosher food options), this leaves many students without access to foods that make them feel connected, at home, or support their wellbeing/dignity.[147] Food is not just energy, it is also an important relic of home and a way to create comfort in unfamiliar places.[148] [149] This lack of diversity can cause serious harm to a student's personal identity, which can, in turn, harm their ability to feel connected to their campus and peers. Each student has a unique personal history and cultural background that can influence their identity and relationship with food. When individuals do not have the ability to engage in the authentic expression[150] of themselves by having access to their preferred cultural or traditional foods, it can marginalize and disengage them from the larger social group and community, creating isolation and alienation.[151] This disengagement and lack of support from the campus community can increase the risk of short-term and long-term stress, loneliness, and depression among post-secondary students, which can leave lasting negative health outcomes.[152]

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[146] Ibid. "Interview 6" June 2022
[147] Mahitab Hanbazaza et al., "Food Insecurity Among International Post-Secondary Students Studying on a Canadian Campus: A Qualitative Description Study," *Canadian Journal of Higher Education* 51, no. 2 (August 8, 2021): 33–45, https://doi.org/10.47678/cjhe.vi0.188977.
[148] Ibid.
[149] Ibid. "Interview 6" June 2022
[150] ''About Us - Samuel Centre For Social Connectedness — Samuel Centre For Social Connectedness," accessed August 21, 2022, https://www.socialconnectedness.org/about-us/.
[151]Rebecca L. Hagedorn-Hatfield, Lanae B. Hood, and Adam Hege, "A Decade of College Student Hunger: What We Know and Where We Need to Go," Frontiers in Public Health 10 (2022), https://www.frontiersin.org/articles/10.3389/fpubh.2022.837724.
[152] Ibid.

Theme #4: Implications on Student Success

Findings within the literature aligned with participants describing how food insecurity can take a toll on a student's ability to concentrate and complete their academic work.[153] [154] [155] [156] . Evidence from the literature, and as participants highlighted, academic success is critical for many, if not all students, and especially important for students who are low income, racialized, on scholarship, or needing to maintain a specific average to achieve their career goals.[157] The negative effect that food insecurity can have on academic success adds to the myriad of other stressors that students are constantly contending with.[158] [159] Academic success can play an important role in a student's personal growth and long-term career success, however, living with food insecurity can adversely impact both the academic success and career trajectory of food-insecure students.[160] The role of food insecurity in jeopardizing student success can have serious negative

[153] Mahitab Hanbazaza et al., "Food Insecurity Among International Post-Secondary Students Studying on a Canadian Campus: A Qualitative Description Study," *Canadian Journal of Higher Education* 51, no. 2 (August 8, 2021): 33–45, https://doi.org/10.47678/cjhe.vi0.188977.
[154] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[155] Ibid. "Interview 8" July 2022
[156] Ibid. "Interview 9" July 2022
[157] Kelli Rogers, December Maxwell, and Sarah Robinson, "Influences of Academic Success among Low-Income Minority Students: A Qualitative Interpretive Meta-Synthesis of Student, Educator, and Parent Experiences - ProQuest," accessed August 20, 2022, https://www.proquest.com/openview/fbe4dcf17073ba9fc364cb83b0c86dbc/1?pq-origsite=gscholar&cbl=2035676.
[158] Ibid. "Interview 8" July 2022
[159] Ibid. "Interview 9" July 2022
[160] J Bottorff et al., "Correlates of Food Insecurity Among Undergraduate Students | Canadian Journal of Higher Education," accessed August 20, 2022, https://journals.sfu.ca/cjhe/index.php/cjhe/article/view/188699.

repercussions on the emotional and psychological well-being of students - both of which are elements of mental health.[161] [162]

> *"Food insecurity is also not always having access to healthy food, so if you're not able to fuel your body properly, it might affect you academically. And for a lot of people, academics means success and is really important to them, so I think that creates like another spiral where you're not able to get academic success, which is another impact on your mental health"* [163]

Limited access to food, especially nutritious food, can hinder academic performance, achievement, concentration within class, and completing assignments.[164] Importantly, post-secondary students experiencing food insecurity may be more likely to reduce their course-load or drop out of school, compared to students who are food secure.[165] One study found that the impact of food insecurity on academic achievement and student success can act to further amplify existing socio-economic inequities among marginalized students (i.e., low-income, minority and racialized students) who already experience a disadvantage in academic and career outcomes; relative to students from high socioeconomic status and non-minority backgrounds.[166]

A participant described the elevated stress levels that one of their peers experienced from not being able to access affordable food on top of the stress of

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[161] Ibid.
[162] Carol D. Ryff, "Psychological Well-Being Revisited: Advances in Science and Practice," *Psychotherapy and Psychosomatics* 83, no. 1 (2014): 10–28, https://doi.org/10.1159/000353263.
[163] Ibid. "Interview 9" July 2022.
[164] Merryn Sanders Maynard et al., "Experiences of Food Insecurity Among Undergraduate Students: 'You Can't Starve Yourself Through School,'" *Canadian Journal of Higher Education* 48, no. 2 (August 31, 2018): 130–48, https://doi.org/10.47678/cjhe.v48i2.188121.
[165] Ibid.
[166] J Bottorff et al., "Correlates of Food Insecurity Among Undergraduate Students | Canadian Journal of Higher Education," accessed August 20, 2022, https://journals.sfu.ca/cjhe/index.php/cjhe/article/view/188699.

their academic responsibilities.[167] Balancing both, and constantly worrying about each of these factors, respectively, took a serious toll on their mental health.[168]

> *"The stress of not having access to affordable food, it affected them incredibly academically, and that really put a burden on their second-year university experience, to the point that they had to repeat a lot of their courses, and, in turn, that actually impacted them a lot because it's costly to retake those courses, especially as an international student."* [169]

RECOMMENDATIONS AND IMPACT

The key findings from this research have pointed to 3 recommendations for student leaders, campus staff/groups, post-secondary institution administrators, and community organizations who are working, knowledgeable in, and/or have lived experiences in food insecurity and mental health, and student wellness. These recommendations are:

1. Increase awareness and exposure to food security supports and resources among post-secondary students, particularly during transitional periods.

2. Develop food security programming and supports that use a human dignity-based approach.

3. Encourage and promote a holistic approach to addressing the intersection of food insecurity and mental health by engaging in cross-sectoral collaboration with diverse stakeholders on and off campuses.

[167] Ibid. "Interview 8" June 2022
[168] Ibid.
[169] Ibid.

Recommendation #1: Increasing Awareness and Exposure

> *"Many people with food insecurity issues might not even realize that this is food insecurity. Or… what it stems from, or the implications– the impact of it on their education and personal life– until it's too late, and that's what we want to try to prevent. More education on it - I think that was something I thought was lacking. Something that could be implemented either definitely in the first year, but also in the second year, where students are becoming post-secondary students and going through that transition, and that's when they're most vulnerable to a lot of these stressors"*[170]

Creating a campus environment in which post-secondary students are aware of support programs and food resources is an important preventative measure that can be taken to reduce potential food insecurity among students and the subsequent consequences to their mental health. The findings from this study point to the fact that many students are unaware of what constitutes food insecurity, and the potential implications that it can have on their overall well-being. The lack of awareness and knowledge can limit the ability of students to seek out proper resources and support. There is also a significant opportunity and need to increase awareness, knowledge, and exposure to supports and resources, especially during the transitory periods that post-secondary students experience (moving on campus, moving off-campus, the first year of university, and the second year of university). Participants discussed these transition periods as particularly stressful because of the changes students experience from moving away from their social support systems and familiar environments.

From the interviews, participants suggested that social media content and active promotion from key actors on campuses (i.e., student wellness centers, student organizations, clubs, and academic offices) can be useful tools to raise

[170] Ibid. "Interview 10" July 2022

awareness of food resources and support programs.[171] Importantly, awareness campaigns should be created in consultation with student groups or student leaders working within the food insecurity and wellness spaces to ensure that the messaging and content is appropriately targeted to the student audience.[172]

Education and awareness are also important tools for de-stigmatizing food insecurity and food banks on campuses.[173] As such, measures taken by student groups, campus staff, or student services to increase awareness and education of food insecurity and its intersectional nature with health and well-being (i.e., mental health), can be a way to create safe spaces on campuses where students are not judged or stigmatized.

Recommendation #2: Human Dignity-Based Approach

"Because a lot of them needed that anonymity and judgement-free zone. Perhaps because it helps to maintain their sense of community and maintain their sense of belonging, by being able to access the things they need, in a way that they don't feel judged in a way that they don't feel any sort of shame"[174]

This study underscored the importance of fostering safe campus environments and spaces in tackling food insecurity and its intersectional impacts on mental health. To build these safe environments, there must be the respectful inclusion and participation of post-secondary students with particular consideration for those who are most affected or vulnerable to food insecurity and its impacts on mental health and wellbeing (i.e., low-income, minority, international, and racialized students). Participants suggested that one approach to creating

[171] Ibid. "Interview 1" June 2022
[172] Ibid. "Interview 9" July 2022
[173] Olivia Neff, "Food Insecurity Prevalence on College Campuses, the Stigma Associated with Food Pantries and the Best Practices Moving Forward," December 2019, 21.
[174] Ibid. "Interview 9" July 2022

judgement-free zones that mitigate the risk of social alienation is by providing anonymity to those accessing food assistance programs and resources. If student groups, campus staff, or student services can work on developing or modifying current programming and resources to ensure that the dignity of students is maintained, and that anonymity, personal protection, and a culture of safety are offered, it can provide an opportunity to mitigate some of the mental stress that is placed on students experiencing food insecurity. An example of a successful food security initiative is the *Lockers of Love* program operated by the Food Collective Centre at McMaster University.[175] This program provides McMaster students and community members with the ability to anonymously pick up non-perishable food items from a locker located on campus. The anonymity of this assistance program has relieved students from the fear of being judged or shamed by their peers.[176] Importantly, the lockers are in an accessible location on campus that allows users to access the program with dignity and respect.[177] [178]

Furthermore, from this study, it is apparent that food assistance programs and resources must be tailored to meet the diverse identities of students. Programming and resources that are not mindful or respectful of the diverse cultural identities of their many students will have effectively excluded them from meaningfully participating in campus life and their larger community. For example, participants in this study expressed the challenges that many students experience

[175] "Food Collective Centre," MSU (blog), accessed August 21, 2022, https://msumcmaster.ca/service/fcc/.
[176] Ibid.
[177] Ibid.
[178] Chris Rae, "Dignity and Respect at the Root of Accessibility," Community Living BC, February 10, 2020, https://www.communitylivingbc.ca/celebrate-diverse-abilities/dignity-and-respect-at-the-root-of-accessibility/.

in finding culturally and religiously (i.e., halal and kosher) food on- and off-campus.[179] [180] In response to this challenge, a map could be created to identify food options on campus and off-campus, but it should be developed with consideration of cultural and religious needs of students such as by pointing out which locations offer halal food options.

Food security resources and programs should be developed to allow students to feel engaged socially, culturally, and academically. This is important given the significant impact of community belonging and social inclusion on mental health. Overall, campuses must make an active effort to create a culture of caring, respect, and dignity for all their students to ensure their health and overall well-being.

Recommendation #3: Encouraging Cross-Sectoral Collaboration

"I've heard of conversations on mental health and food insecurity separately, but there's nothing that comes to mind where it was talked about in relation to each other. There's never really an intersection that's addressed, it's always in separate spaces, so when it comes to the intersectionality between food insecurity and mental health, I would like to see more collaboration across services" [181]

This study shows that the intersection between mental health and food insecurity is still an emerging area of research and thinking. Participants noted that there had been limited to no discussions or actions taken by current food security programs to consider the intersectional nature of food insecurity and mental health. Rather, food insecurity and mental health remain separate entities, addressed in silos, with separate actors/stakeholders/services involved in each of these spaces.

[179] Ibid. "Interview 9" July 2022
[180] Ibid. "Interview 10" July 2022
[181] Ibid. "Interview 10" July 2022

A cross-sectoral, collaborative approach may be useful to promote a more holistic conversation and response to food insecurity with mental health. To bring together stakeholders from across departments on campus, stakeholder mapping is the first step that can be taken. This will allow important actors to be identified and brought into subsequent conversations. Potential ways of bringing people together include holding forums, panels, or town hall sessions where students, staff, administrators, and faculty can discuss their concerns and plan actionable steps. Overall, a collaborative approach that involves students, faculty, services, and staff across campuses from sectors such as hospitality services, student wellness services, and food assistance services, can provide a way of tackling this intersectional issue in a united way so that students can feel supported holistically.

CONCLUSION

Overall, this study provided a deeper understanding of how food insecurity among post-secondary students across Canada can impact their mental health. Through post-secondary students, student leaders, campus staff/groups, research experts, and community organizations who are working, knowledgeable in, and/or have lived experiences with the spaces of food insecurity, mental health, and student wellness, this study has been able to identify the impacts that food insecurity has on a student's mental health. These impacts include harming a student's sense of agency, negatively impacting their identity, creating social isolation and community exclusion, and negatively impacting academic performance.

While the intersectional nature of food insecurity and mental health in a post-secondary student context is still an emerging area of work and research,

three key recommendations can be taken into consideration by student leaders, campus staff/groups, student services, and community organizations, who are looking into mobilizing action on the intersection of food insecurity and mental health on their campuses. These recommendations include increasing awareness and exposure of supports and resources, promoting a human dignity-based approach to food insecurity, and encouraging cross-sectoral collaboration on campuses. An interesting avenue for future research would be to work with student leaders and campus staff to develop metrics or tools to evaluate their impact on food security and mental health. I hope this study will inspire further research and action on post-secondary campuses so that the wellness and health of current and future students in Canada are no longer diminished and deprioritized.

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