School of Public Policy | University of Calgary

MASTER OF PUBLIC POLICY
CAPSTONE PROJECT

Promoting Health Equity Through School Meal Programs in Canada : A Comparative Analysis of South Korea and United States Approaches

Submitted by:

Hyojin Yim

Approved by Supervisor:

Dr. Siu Ming Kwok

August 21, 2024

Submitted in fulfillment of the requirements of PPOL 623 and completion of the requirements for the Master of Public Policy degree

School of Public Policy | UNIVERSITY OF CALGARY

Capstone Approval Page

The undersigned, being the Capstone Project Supervisor, declares that

Student Name: Hyojin Yim

has successfully completed the Capstone Project within the

Capstone Course PPOL 623 A&B

Siu Ming Kwok

(Name of supervisor)

(Supervisor's signature)

August 21, 2024

(Date)

Table of Contents

List of Tables

List of Abbreviations

Abbreviation	Full Term
CEP	Community Eligibility Provision
FDPIR	Food Distribution Program on Indian Reservations
FNS	Food and Nutrition Service
FY	Fiscal Year
GTE	Getting to Equity
HACCP	Hazard Analysis Critical Control Point
IDEA	Individuals with Disabilities Education Act
NGO	Non-Governmental Organization
NSLP	National School Lunch Program
SBP	School Breakfast Program
SNAP	Supplemental Nutrition Assistance Program
TANF	Temporary Assistance for Needy Families
USDA	United States Department of Agriculture

Abstract

This paper explores how Canada's newly implemented national school meal program can benefit from the valuable lessons offered by school meal programs in South Korea and the United States, which promote health equity. South Korea's universal approach ensures that all students receive free, nutritious meals, significantly reducing health disparities and fostering an inclusive environment. The U.S. program is selective but has introduced initiatives like the Community Eligibility Provision to reduce stigma and increase accessibility. The analysis, framed by the Getting to Equity framework, highlights the importance of universal access, reducing barriers to participation, enhancing social and economic resources, and building community capacity as key strategies for promoting health equity. These strategies extend beyond mere nutrition, addressing broader social determinants of health and ensuring that school meal programs contribute to the well-being and development of all children. This paper provides targeted recommendations for Canada, emphasizing the need for a universal school meal program, robust nutritional standards, and inclusive policies that address diverse dietary needs. By adopting these strategies, Canada can effectively combat child food insecurity, enhance health equity, and contribute to long-term educational and socioeconomic outcomes.

Introduction

Health equity refers to the absence of avoidable and unfair disparities in health outcomes among people, rooted in social determinants such as income, education, and access to healthcare (Braveman 2014; World Health Organization 2021). Promoting health equity is not just beneficial for individuals; it can also bring significant economic, national security, social, and other benefits to the nation (Negussie, Geller, and DeVoe 2019). Early intervention, particularly during childhood, is generally more cost-effective than interventions later in life (Marmot and Friel 2008). Moreover, disparities in health outcomes and access to health-promoting resources during childhood can have long-lasting effects, influencing educational attainment, economic opportunities, and overall quality of life (Braveman et al. 2018).

Social determinants, which are crucial elements of health equity, include income, social protection, education, unemployment and job insecurity, food insecurity, and housing (Marmot and Friel 2008; World Health Organization 2021). Food insecurity, particularly among children[1], extends beyond mere access to food; it is a fundamental problem that directly impacts children's development (Grinesky et al. 2018; Gundersen and Ziliak 2015; Hobbs and King 2018; Kimbro and Denney 2015). Children living in food-insecure households are one-third more likely to be hospitalized (Cook et al. 2004). They are also more likely to experience frequent stomachaches and headaches (Alaimo, Olson, and Frongillo 2001) and have higher risks of being overweight and obese (Casey et al. 2006; Jyoti, Frongillo, and Jones 2005). Additionally, they are disproportionately more likely to experience disruptions in social interactions, and persistent symptoms of depression, anxiety, hyperactivity, and inattention (Melchior et al. 2012). These

---

[1] All students participating in school meal programs have been referred to as "children" in this paper. However, when citing research targeting only teenagers or adolescents, the respective terms have been retained.

issues can place significant pressure on the healthcare system, so improving children's health equity should be a top priority in the national strategy to enhance the health and productivity of both children and adults (Council on Community Pediatrics and Committee on Native American Child Health 2010).

Food insecurity is a pressing issue in Canada, with recent data showing that 22.9 percent of people experienced food insecurity in 2022 (Statistics Canada 2024). The situation is particularly concerning for those under the age of 18, with rates soaring to 28.4 per cent in 2022, representing an increase of 3.9 per cent from 2021 (Statistics Canada 2024). In March 2023, approximately 1.9 million people accessed food banks over the course of just one month, with 33.1 per cent of them being children (Food Banks Canada 2023). While food banks can help address unmet food demand, the food provided is often low in nutritional value (Ke and Ford-Joones 2015). Therefore, food banks are considered part of the social safety net, but they are not a sustainable long-term solution.

Schools are not only places where children spend their formative years but also ideal environments for promoting lifelong learning, enhancing health equity, improving access to healthy foods, and implementing comprehensive nutrition interventions that encourage healthy eating habits (Fung et al. 2012; Pulimeno et al. 2020; United Nations System Standing Committee on Nutrition 2017). Therefore, school meal programs can be one of the proactive measures to address child food insecurity, providing children with immediate and consistent nutrition and ensuring they receive at least one balanced meal every day at school (McLoughlin et al. 2020). These interventions contribute significantly to health equity by addressing the nutritional needs of all children, particularly those in low-income or disadvantaged settings (World Health Organization 2020).

As the only G7 country without a standardized national school meal program, Canada's current system is characterized by provincial/territorial and municipal initiatives, resulting in varying levels of coverage and participation (Government of Canada 2024a; Zhong et al. 2023). The range of participation rates across Canada is wide, with some provinces showing much lower rates of engagement. For example, Alberta has only about 5 per cent student participation in school meal programs, while Yukon leads with an 83 per cent participation rate (Ruetza and McKennab 2021). This imbalance can exacerbate food inequality among children across Canada.

In response to this situation, in April 2024, Canada announced the implementation of a historical national school meal program, allocating $1 billion over five years to provide meals to 400,000 children each year (Government of Canada 2024b). This initiative aims to reduce hunger and food insecurity and improve health equity among children, ensuring they receive the necessary nutrition for their growth and development (Government of Canada 2024a).

Previous research on Canada's school meal programs has largely focused on health outcomes (Baxter et al. 2010; Fung et al. 2012), nutritional quality (Gougeon et al. 2011; Everitt et al. 2020), and general recommendations for developing a national school meal program (Everitt et al. 2023; Gupta, Pahwa, and Engler-Stringer. 2023; Hernandez et al. 2018; Ruetz and McKenna 2021). However, there is a critical gap in the literature regarding how school meal programs should be structured to specifically enhance health equity. Addressing this gap is essential for ensuring that these programs effectively contribute to reducing disparities and promoting equitable health outcomes among all children.

To better understand how Canada can effectively implement its new national school meal program, it is useful to examine international examples. South Korea, one of the countries with a universal approach, ensures that all children have access to nutritious meals, thereby reducing health disparities. The United States operates a selective program but is expanding initiatives like the Community Eligibility Provision (CEP), which allows schools in high-poverty areas to provide free meals to all students. However, challenges such as stigma, program accessibility, and financial sustainability remain. This paper aims to complement existing research by offering a comparative analysis of the strengths and limitations of school meal programs in South Korea and the U.S. from a health equity perspective.

This paper addresses the following research questions:

1) How do South Korea and the U.S. implement their school meal programs from the perspective of child health equity?

2) What policy recommendations can be made to ensure Canada's national school meal program effectively promotes child health equity?

To address these research questions, this paper employs the Getting to Equity (GTE) framework to analyze school meal programs in South Korea and the U.S. By applying this framework, the study examines key components that contribute to health equity. The analysis draws on a range of data sources, including academic literature, government documents, and reports from non-governmental organizations. This paper aims to identify best practices and potential challenges when implementing school meal programs that prioritize health equity. These findings will offer insights that can help maximize the program's impact on child health equity and well-being. The lessons learned from these cases, viewed through the prism of health equity, can play a crucial role in shaping a program that effectively addresses food insecurity while promoting the holistic development of Canadian children.

Background

School meal programs are often included as a part of national social safety net programs (Cohen et al. 2021), because they play a crucial role in providing balanced nutrition to children and supporting their overall health. Compared to packed lunches, school meals are more likely to adhere to food-based or nutrient-based standards (Pearce, Wood, and Nelson 2013). School lunches accounted for 31 per cent of students' daily energy intake, 40.6 per cent of their daily vegetable intake, and 77.1 per cent of their milk intake (Cullen and Chen 2017). Children who consumed school lunches daily had higher intake levels of fruits, vegetables, fiber, and whole grains, and less likely to consume sugary beverages and snacks compared to their peers who did not participate in school lunch programs (Gleason and Suitor 2003; McLoughlin et al. 2020). School meal programs can provide children with consistent access to nutritious meals, which can mitigate the adverse effects of food insecurity and improve overall health (Fung et al. 2012).

School meal programs have a significant impact not only on the children who participate but also on their families. Ensuring that all students have access to school meal programs can lead to a substantial reduction in monthly grocery expenses for households with two children, potentially up to 19 per cent (Marcus and Yewell 2022). This amounts to approximately $258 CAD per month in Canada, or $3,780 CAD for a family of four over an academic year, significantly enhancing their purchasing power (Ruetz, Edwards, and Zhang 2023). Significant indirect benefits include lower supermarket grocery costs and a reduction in the number of people relying on food banks, enabling families to redirect their savings toward essential expenses like housing, utility bills, and gas (Ruetz, Edwards, and Zhang 2023).

Investing in school meal programs can also stimulate the local economy and benefit the environment. For instance, Investment in school meal programs has been shown to generate local economic activity, with every dollar spent on local produce creating between $1.30 USD and $2.60 USD in economic activity (Community Health Improvement Partners 2016). This supports local farmers and suppliers, contributing to economic growth and reducing unemployment.

School meal programs can be categorized into two main approaches: universal and selective. Universal school meal programs provide free meals to all children, regardless of their socio-economic status. This approach is particularly important because it ensures that every child has access to school meals, which, from a health equity standpoint, offers greater benefits to those children who are at higher risk of poor health outcomes, thereby helping to reduce inequalities (Cohen et al. 2023). Universal meal programs increase participation rates by 5 to 10 per centage points by eliminating the stigma that may cause eligible students to hesitate in joining the meal program, ensuring that more children receive the necessary nutrition (Domina et al. 2024; Zuercher et al. 2022).

On the other hand, selective school meal programs are designed to offer meals specifically to children who meet certain income eligibility criteria, primarily targeting low-income children. These programs focus on ensuring that those who are most in need and at risk of food insecurity receive the necessary nutrients.

The School Meal Program in South Korea

South Korea, one of the countries implementing universal school meal programs, began providing free meals to elementary schools in Seoul, the capital city, in 2011. The program has since expanded to cover all elementary, middle, and high schools, ensuring that every child receives at least one nutritious meal daily. As of 2023, 100 per cent of meals are provided free of charge at all 12,038 elementary, middle, high, and special schools nationwide (Ministry of Education of South Korea 2024).

The program focuses on healthy and traditional foods that are grown organically or without the use of pesticides (Gaddis and Jeon 2020). Article 1 of the Seoul Metropolitan Ordinance on Support for Eco-Friendly Free School Meals (2023) states that eco-friendly school meals prioritize health, environmental considerations, and ecological balance.

The implementation of universal school meals has been associated with an average weight reduction of 2.1 per cent among overweight students, a benefit observed across both genders (Bethmann and Cho 2022). Children who participated in the school lunch program not only had higher energy intake but also consumed more essential nutrients, including phosphorus, potassium, vitamin A, carotene, vitamin B1, and niacin, compared to their peers who skipped lunch or did not participate in the program (Kim et al. 2023). The school lunch program participants exhibited more adequate nutrient intake than their non-participating or lunch-skipping counterparts, with those who skipped lunch being at significantly higher risk—2.5 times for obesity, 1.9 times for being overweight, and 2.5 times for central obesity (Kim et al. 2023). Moreover, overall satisfaction with the school meal program, particularly regarding hygiene, was found to have a substantial impact on students' overall happiness at school (Kwon, Kim, and Lee 2018).

The program is funded by the Korean government through a cost-sharing agreement, with contributions from national, regional, and local levels (Gaddis and Jeon 2020). For example, in Seoul, the budget for school meals is shared with the Office of Education covering 50 per cent, the Seoul Metropolitan Government 30 per cent, and the district offices 20 per cent (Seoul

Metropolitan Department of Lifelong Education 2023). As a result, disparities in school meal costs arise depending on local finances.

Despite the challenge, the South Korean case provides valuable insights into the benefits of universal school meal programs. The integration of eco-friendly practices, such as prioritizing organic and pesticide-free foods, demonstrates how such initiatives can support both child health and environmental objectives. Furthermore, the program's positive outcomes, including reductions in obesity rates, improved nutrient intake, and decreased behavioral incidents, underscore the multifaceted benefits of universal school meal programs, making a compelling case for their broader adoption to promote health equity and societal well-being.

The School Meal Program in the U.S.

In the U.S., since the 1930s, the federal government has made investments in child nutrition programs, starting with federal support for school meal initiatives (U.S. Congressional Research Service 2023). The U.S. Department of Agriculture's (USDA) Food and Nutrition Service (FNS) administer several of the programs, with the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) (U.S. Department of Agriculture 2024a). All children at participating schools have the option to participate in the NSLP or SBP; however, these programs are particularly vital in supporting low-income children by providing reduced-price or free lunches based on means testing (Peterson 2014).

Free meals are provided to students from households with incomes at or below 130 per cent of the Federal Poverty Guidelines qualify for free meals. Additionally, children from households that receive benefits from the Supplemental Nutrition Assistance Program (SNAP) are also eligible. For those with household incomes between 130 per cent and 185 per cent of the

Federal Poverty Guidelines, reduced-price meals are available. As of 2023, 28.6 per cent of all students, including paid participants, were enrolled in the NSLP (U.S. Department of Agriculture 2024b). Among these, 19.0 per cent were free participants, and 1.1 per cent received reduced-price meals. In the SBP, 14.7 per cent of students participated, including those who paid for their meals, with 11.1 per cent receiving free meals and 0.5 per cent receiving reduced-price meals (U.S. Department of Agriculture 2024b).

Children participating in the NSLP have been shown to consume more whole grains and dairy products compared to non-participants (Gearan et al. 2021). The NSLP has also been found to reduce food insecurity among eligible children by at least 3.8 per cent, decrease the rate of health deterioration by a minimum of 29 per cent, and lower obesity rates by at least 17 per cent (Gundersen, Kreider, and Pepper. 2012). SBP contributes to a 26 per cent increase in milk consumption per week, a 16 per cent increase in average weekly fruit consumption, and a 13 per cent reduction in soda intake (Frisvold 2015).

The estimated value of receiving daily lunches through the NSLP for a week is approximately $15 USD, whereas breakfast provided through the SBP is valued at around $9 USD. (Gundersen and Ziliak 2014; School Nutrition Association 2024). Despite the substantial benefits, a significant proportion of eligible children do not access free or reduced-price meals (Lopez-Neyman and Warren 2016; Rogus, Guthrie, and Ralston 2018). This is frequently attributed to the stigma associated with receiving these meals and, in some cases, dissatisfaction with the meal offerings (Gundersen and Ziliak 2014; Poppendieck 2010, p.152).

The U.S. school meal programs face challenges, one significant issue being school meal debt. Unpaid meal debt refers to the amount owed to school meal programs when students receive meals without payment or other forms of federal reimbursement (Fleischhacker and

Campbell 2020). A significant portion of this debt arises from the means-tested nature of the SMP and NSLP, as families with incomes slightly above the eligibility cutoff for free or reduced-price meals may find it challenging to pay the full cost of meals (Food Research & Action Center 2020).

Another challenge lies in accurately identifying and enrolling eligible children. According to The Office of Research, Nutrition, and Analysis (2007), 23.2 per cent of submitted applications contained errors, while administrative processing errors accounted for an additional 8.3 per cent. The most common mistake in household reporting involved inaccuracies in total income amounts, affecting 20 per cent of students whose eligibility was either certified or denied. Furthermore, some families are unaware that they can reapply for SMP or NSLP at any point during the academic year following an initial denial (Gagliano, Yassa, and Winsler. 2023).

Despite these challenges, the NSLP has had a significant positive impact on child nutrition and food security in the U.S. It provides a valuable safety net for low-income families and helps ensure that millions of students receive at least one healthy meal each school day (Ralston et al. 2017).

Getting to Equity Framework

GTE framework, developed by Kumanyika (2017), is designed to guide obesity prevention strategies with a focus on equity. The framework aims to prioritize equity issues when implementing policy, systems, and environmental strategies (Table 1). The GTE framework promotes gathering information to address essential questions by concentrating on those who are not receiving benefits and exploring the reasons for their exclusion (Cohen et al. 2023).

The GTE framework has been instrumental in analyzing and optimizing the reach and effectiveness of child nutrition programs during the COVID-19 pandemic (Cohen et al. 2023; Harper et al. 2023; McLoughlin et al. 2020). This framework proved to be a useful tool for evaluating how school meal programs described and implemented equitable approaches to adapt to the challenges they faced (Harper et al. 2023).

Table 1. Getting to Equity framework

Category	Explanation
Increase Healthy Options	Focuses on interventions for obesity prevention and equity, such as improving supermarket locations, establishing food standards in schools and public places, enhancing access to parks and recreational facilities, and improving neighborhood walkability and transit systems.
Reduce Deterrents to Healthy Behaviors	Aims to balance health-promoting and health-damaging exposures by decreasing unhealthy food marketing, making unhealthy options less affordable, and reducing conditions that discourage healthy behaviors.
Improve Social and Economic Resources	Addresses inequities through non-health-specific solutions with health benefits, such as reducing poverty, enhancing employment and housing conditions, supporting antihunger programs, programs like the SNAP and the Special Supplemental Nutrition Program for Women, Infants, and Children, and providing legal services to remove discriminatory policies.
Build Community Capacity	Emphasizes community engagement in health interventions by involving community members in the process, fostering collective efficacy, forming strategic partnerships, and encouraging entrepreneurship in low-resource communities.

Source: Getting to Equity in Obesity Prevention: A New Framework, National Academy of Medicine (Kumanyika 2017)

Methods

Policy Analysis Framework

The GTE framework was utilized to analyze the national school meal programs of South Korea and the United States from the perspective of health equity. The version adapted by McLoughlin et al. (2020) and Harper et al. (2023) was used to better suit the analysis of school meal programs. These adaptations retained the core principles of the GTE framework but integrated additional elements to reflect the unique perspective of ensuring equitable access to school meal programs.

However, McLoughlin and Harper's studies were conducted during the COVID-19 emergency, which introduced specific considerations unique to the pandemic context. For this analysis, this paper has excluded elements that are specific to the COVID-19 emergency, ensuring that the focus remains on the general principles of health equity and nutrition access in school meal programs. As a result, the specific items used in the four quadrants are listed in Table 2.

Table 2. Policy Analysis Framework

Category	Specific Items
Increase Healthy Options	- Center access to meals while prioritizing diet quality - Share resources to increase availability, diversity, and accessibility paired with bulk ordering - Identify and respond to special dietary needs - Provide nutrition education aligned with meal options
Reduce Deterrents to Healthy Behaviors	- Address fear of discrimination - Practice consistent communication and use multiple channels
Improve Social and Economic Resources	- Increase household minimum wage - Access to food assistance programs

Category	Specific Items
Build Community Capacity	- Establish community partnerships - Leverage community resources - Collaborate across sites and sectors to effectively communicate about and promote meals

Data

Academic journals, books, and peer-reviewed articles were reviewed to gather evidence on the impact of school meal programs on children's health equity, with a focus on key studies and meta-analyses in nutrition, education, and public health. Government documents, including policy papers, legislative texts, and program evaluations, were also collected to provide a comprehensive understanding of school meal programs in South Korea and the U.S. Additionally, reports from NGOs involved in child nutrition and health were reviewed.

The period affected by COVID-19 was excluded from the analysis because, during this time, the U.S. temporarily implemented a nationwide universal school meal program. In June 2022, the USDA ended this waiver and returned to the previous model (Toossi 2024).

In South Korea, the school meal program framework is consistent nationwide, but each local government sets its own implementation plan. This analysis focuses on data from Seoul, with additional information from other municipalities as needed.

Findings

South Korea School Meal Program

1) Increase Healthy Options (Seoul Metropolitan Department of Lifelong Education 2023)

In South Korea, the school meal program is primarily operated under a direct management system, with 97.9 per cent of schools cooking and serving meals on-site. The remaining 2.1 per cent of schools, which lack facilities or are under renovation, outsource meal preparation (Ministry of Education of South Korea 2024; School Meals Act, Articles 6 and 15; Seoul Metropolitan Department of Lifelong Education 2023). This ensures that all schools provide hot meals daily.

According to the School Meals Act (Article 11), school meals must include a variety of foods to meet children's nutritional needs and help establish healthy eating habits. The Enforcement Rule (Article 5, Appendix 3) sets nutrition management standards based on gender and age, and the quality of food ingredients is reviewed by the School Management Committee (School Meals Act Enforcement Decree Article 4). Ingredients are purchased from certified suppliers under the Food Sanitation Act, with a focus on using eco-friendly products and GAP (Good Agricultural Practices), HACCP (Hazard Analysis Critical Control Point)-certified items. To ensure hygiene and safety, inspections are conducted during delivery in the presence of nutrition teachers and parents. It is recommended that over 70 per cent of the purchased agricultural products be eco-friendly. The origin of food ingredients is communicated to families via monthly menus and posted on the school website.

The procurement of food ingredients is based on data from sources such as the School Meals Market Survey, School Meals Portal, Ministry of Education, and the Korea Agro-Fisheries and Food Trade Corporation. Under the supervision of the District Office of Education, nearby schools form “joint purchasing groups” to coordinate contracts and jointly procure ingredients. Schools in regions with a School Meal Service Support Centers order their ingredients through the centers. As of 2023, 41.2% of the 243 local governments nationwide operate a School Meal Service Support Center (Korea Agro-Fisheries and Food Trade Corporation 2023).

For health reasons, students who cannot participate in school meals do not receive individual menu provisions, but special education students in itinerant classes and students with gastrostomy are provided with separate support within the scope of food costs (Ministry of Education of South Korea 2024).

Monthly menus indicating ingredients that may trigger allergies are distributed to families through school newsletters and posted on the school website. Additionally, schools survey children for specific food allergies (e.g., soy, milk, eggs) and encourage the provision of alternative foods.

With the introduction of the “Safe Life” subject in the 2015 revised curriculum, education on dietary safety has become mandatory for first and second graders in elementary school. Schools are encouraged to operate dietary education rooms, offer traditional food experience programs, and promote children self-governance activities.

2) Reduce Deterrents to Healthy Behaviors

South Korea’s universal school meal program eliminates the need for individual eligibility assessments, ensuring that all children can participate without the stigma associated with receiving free meals. As of the 2023 academic year[2], the average number of children

[2] The academic year in South Korea runs from March to February of the following year.

utilizing school meals daily is approximately 5.26 million, which constitutes 99.9 per cent of the total student population (Ministry of Education of South Korea 2024).

Schools aim to operate an open school meal program by running interactive communication platforms such as bulletin boards on the school website and dietary education centers to gather feedback from students and parents (Seoul Metropolitan Department of Lifelong Education 2023). Additionally, schools hold “School Meal Open Days” to share the meal preparation process, conduct tasting events, and distribute menus in Korean both on the school website and through individual notices (Daegu Metropolitan Office of Education 2024).

3) Improve Social and Economic Resources

The Korean Education Development Institute (2020) analyzed that with the implementation of free school meals, the proportion of educational expenses borne by parents of students in public elementary, middle, and high schools decreased from 27.98 per cent in 2015 to 16.82 per cent in 2019, a reduction of 11.16 per centage points over five years. In monetary terms, the average annual burden per parent decreased from 8,516,000 KRW (about $8,516 CAD) in 2015 to 6,725,000 KRW (about $6,725 CAD) in 2019, resulting in a reduction of 1,791,000 KRW (about $1,791 CAD) over the five-year period. Given the full expansion of free school meals to high schools, it can be inferred that the burden of educational expenses on parents has likely decreased even further.

The school meal program itself acts as a form of food assistance, ensuring that children receive at least one nutritious meal per day. This is crucial for families facing food insecurity. The program aligns with broader food assistance initiatives that aim to provide nutritional support to low-income families, thereby enhancing food security and reducing the financial burden on households.

4) Build Community Capacity (Seoul Metropolitan Department of Lifelong Education 2023)

To strengthen the continuity of traditional food culture education, schools aim to enhance this cultural heritage by inviting local experts such as traditional food masters, culinary specialists, and agricultural professionals to lead traditional food culture experience programs. Additionally, to promote sustainable eating practices and reduce carbon emissions for a sustainable planet, schools encourage food system transformation education through collaboration with the community and public-private partnerships, applying natural circulation principles to food. Schools are also encouraged to purchase local ingredients whenever possible to stimulate the local economy (Daegu Metropolitan Office of Education 2024).

The “One School, One Village” sisterhood program encourages urban-rural exchange and rural experience learning programs (Daegu Metropolitan Office of Education 2024). Since the establishment of School Meal Service Support Centers, it has been observed that they have a positive impact on the development of regional agriculture by supplying safe and high-quality agricultural products to school meals (Lee and Kim 2017). Schools pay the School Meal Service Support Center for food ingredients monthly, and 1 per cent of the payment for agricultural products is managed by farmer representatives as a self-help fund. This fund compensates farmers for losses when school delivery prices fall significantly below market prices due to sudden price fluctuations, thereby contributing to the economic sustainability of the local community (Cho et al. 2015).

In accordance with the Act on the Promotion of Food Donations, some local governments have enacted and implemented ordinances to promote the donation of uneaten leftovers from school meals to social welfare facilities and food banks. This initiative aims to reduce food waste and support community welfare.

U.S. School Meal Program

1) Increase Healthy Options

In the U.S., the NSLP and the SBP are the primary federal initiatives providing meals to children. These programs are administered by the USDA and are designed to ensure that children receive nutritious meals that meet specific dietary guidelines.

The Healthy, Hunger-Free Kids Act of 2010 significantly reformed school meal standards, mandating that meals include more fruits, vegetables, whole grains, and low-fat dairy products while reducing sodium, saturated fat, and trans-fat (U.S. Department of Agriculture 2022). Schools are required to adhere to these nutritional standards to receive federal reimbursements for meals served. The USDA provides technical assistance and resources to help schools meet these standards, including menu planning tools and training for food service staff.

To further enhance the nutritional quality of school meals, the USDA promotes the use of locally sourced and organic ingredients through initiatives like the Farm to School Program. According to the Farm to School Census (2019), 34.3 per cent of schools operate edible gardens. These gardens contribute to enhancing food literacy by teaching children about the origins and production of food. Additionally, they provide opportunities for children to engage in food preparation firsthand.

School Food Authorities (SFAs) primarily purchase foods for school meal programs using federal funds, including USDA-provided foods (U.S. Congressional Research Service 2023). They must follow federal procurement rules, including the "Buy American" requirement, which prioritizes domestic products (U.S. Congressional Research Service 2023). SFAs can buy local foods as long as they meet all regulations (U.S. Congressional Research Service 2023). Many SFAs handle meal preparation themselves, either at a central kitchen or onsite, while others may contract private companies for procurement or meal prep (U.S. Congressional Research Service 2023). However, SFAs retain control over program operations, ensuring compliance with nutrition standards and financial oversight (U.S. Congressional Research Service 2023).

According to the USDA's nondiscrimination regulation (7 CFR 15b) and the regulations governing the National School Lunch Program and School Breakfast Program, schools must provide meal substitutions for students with disabilities, specifically those within the 13 disability categories outlined under Individuals with Disabilities Education Act (IDEA), if a licensed physician certifies the need for such accommodations (U.S. Department of Agriculture 2001). Children with food allergies or intolerances typically do not fall under the definition of a disability as per Section 504 of the Rehabilitation Act or Part B of IDEA (U.S. Department of Agriculture 2001). Consequently, while schools may choose to make food substitutions for these students, they are not obligated to do so. Funding for these accommodations can be supported through programs like IDEA or Medicaid (U.S. Department of Agriculture 2001).

2) Reduce Deterrents to Healthy Behaviors

The eligibility criteria for free school meals are primarily based on the Federal Poverty Guidelines, which consider both household income and family size (U.S. Department of

Agriculture 2024c). However, the CEP, established under the Healthy, Hunger-Free Kids Act of 2010, allows eligible schools, groups of schools, or districts to provide free meals to all children without requiring individual household applications. Originally, schools needed an Identified Student Per centage (ISP) of 40 per cent to qualify, but this threshold was lowered to 25 per cent starting in the 2023-2024 school year, broadening eligibility (U.S. Congressional Research Service 2023). Schools participating in CEP must operate both the NSLP and the SBP, ensuring all children have access to free, nutritious meals, thereby reducing administrative burdens and eliminating the stigma associated with free meal programs (U.S. Congressional Research Service 2023).

Currently, states like California, Colorado, Illinois, Michigan, Minnesota, Maine, Massachusetts, New Mexico, and Vermont are providing free breakfast and lunch to all children regardless of family income starting (Butz 2023). Additionally, many other states are planning, drafting, discussing, or negotiating expanded free school meal legislation for the 2023-2024 school year and beyond.

3) Improve Social and Economic Resources

According to the Rockefeller Foundation and the Center for Good Food Purchasing (2021), the NSLP, despite costing approximately $18.7 billion annually, has been shown to deliver significant health and economic benefits, estimated at around $40 billion. This translates to a minimum net benefit of $21 billion to society in terms of health and economic equity. These figures highlight the program’s substantial return on investment, emphasizing its value not just in improving public health but also in enhancing economic outcomes for the broader community.

In areas with high participation in universal free school meals through the CEP, monthly food purchases were found to decrease by 19 per cent (Marcus and Yewell 2022). The cost-saving effect is even more significant in regions where the program was more widely implemented (Marcus and Yewell 2022).

Handbury and Moshary (2021) demonstrated that the local adoption of the CEP led to a decline in grocery purchases by households with children, resulting in a 10 per cent decrease in grocery sales at major retail chains. The retailers implemented price adjustments across their entire chain, with the most affected retailer reducing prices by 2.5 per cent in all of its stores. This price reduction contributed to the wider distribution of the program's welfare benefits across the region.

Children from households receiving benefits through the SNAP, the Food Distribution Program on Indian Reservations (FDPIR), or Temporary Assistance for Needy Families (TANF), as well as those who are enrolled in Head Start, in foster care, or identified as migrants, runaways, or homeless, are automatically eligible to participate in the NSLP and SBP without consideration of household income (U.S. Congressional Research Service 2023).

4) Build Community Capacity (U.S. Congressional Research Service 2023)

The Farm to School Program, established by the Healthy, Hunger-Free Kids Act in 2010, aims to bring regionally and locally produced foods into school cafeterias to enhance child nutrition. The program supports goals such as increasing fruit and vegetable consumption among children, supporting local farmers and rural communities, and providing nutrition and agriculture education. It has a mandatory funding base of $5 million, with additional discretionary funds added in recent years. In the 2018-2019 school year, the NSLP used local foods in 71.7 per cent of meals, while the SBP used them in 68.4 per cent (Farm to School Census 2019).

A key component of the program is the Farm to School grants, awarded competitively by the FNS to schools, nonprofits, and agricultural producers to improve access to locally produced foods. These grants can be used for training, planning, equipment purchases, school gardens, nutrition education, and other related activities. In FY2023, FNS awarded $10.7 million for 103 grants, benefiting over 3,000 schools and 1.2 million students. In FY2022, an additional $60 million from the American Rescue Plan Act was allocated to states for Farm to School initiatives over a four-year period.

Table 3. Comparative Analysis of School Meal Programs in South Korea and the U.S.

Category	South Korea	U.S.
Increase Healthy Options	- Direct management system in 97.9 per cent of schools with on-site meal preparation or transportation from nearby schools. - School meals must meet nutritional standards. - Emphasis on eco-friendly and certified ingredients (e.g., non-GMO, HACCP). - Schools must provide additional support to children in special education and those with gastrostomies. - Mandatory dietary safety education.	- NSLP and SBP provide meals that meet specific dietary guidelines. - USDA promotes the use of locally sourced and organic ingredients through initiatives like the Farm to School Program. - SFAs must follow federal procurement rules, including the “Buy American” requirement. - Schools must accommodate children within the 13 disability categories. - Enhancing food literacy through the operation of edible gardens.
Reduce Deterrents to Healthy Behaviors	- Universal meal program eliminates eligibility assessments, ensuring all children can participate without stigma. - Schools operate open meal programs with feedback mechanisms	- CEP allows eligible schools to provide free meals to all children without individual applications. - States like California, Colorado, and others now provide free breakfast and lunch to all children, regardless of income.

Category	South Korea	U.S.
Improve Social and Economic Resources	- Free meal program reduces educational expenses for parents, decreasing from 27.98 per cent in 2015 to 16.82 per cent in 2019. - Average annual burden per parent decreased by 1,791,000 KRW (about $1,791 CAD) over five years.	- NSLP delivers significant health and economic benefits, with a return of around $40 billion annually on an $18.7 billion cost. - SNAP, FDPIR, TANF beneficiaries, and certain other groups are automatically eligible for NSLP and SBP, without considering household income.
Build Community Capacity	- Schools encourage traditional food culture education through collaboration with local experts and public-private partnerships. - "One School, One Village" program promotes urban-rural exchange and rural learning. - School Meal Service Support Centers positively impact regional agriculture and manage farmer compensation funds. - Food donation initiatives aim to reduce food waste and support community welfare.	- Farm to School Program aims to bring locally produced foods into cafeterias, enhancing nutrition and supporting local agriculture. - Grants support various activities like training, equipment purchases, and school gardens.
Strength	- High participation rate (99.9 per cent) in school meals. - Emphasis on eco-friendly and high-quality ingredients. - Strong focus on traditional food culture and local community engagement. - Comprehensive system ensuring nutritional and hygiene standards. - Uneaten school meals are donated to help reduce food waste and support community welfare.	- CEP districts and some states implement universal school meal programs. - Farm to School Program effectively support local agriculture. - The range of disabilities that qualify for special dietary accommodations is broad. - Children in certain assistance programs are automatically eligible for NSLP and SBP.

Category	South Korea	U.S.
Limitation	- Meal quality varies across regions due to financial differences - Limited in addressing the diverse dietary needs of children with disabilities.	- Stigma deters eligible children from using free/reduced meals. - Rising unpaid meal debts. - Errors and lack of awareness limit access for eligible children.

Conclusion and Recommendation

The development of a national school meal program in Canada offers a significant opportunity to advance health equity by addressing the critical issue of child food insecurity. Drawing on the experiences of South Korea and the United States have made it clear how school meal programs should approach promoting health equity.

For Canada, implementing a universal school meal program would ensure that all children, particularly those from vulnerable communities, have access to the nutrition they need to thrive. This approach would not only address immediate nutritional needs but also contribute to long-term health equity by mitigating the adverse effects of poverty on children's health and development. To achieve this, this paper proposes the following recommendations:

Recommendation 1. Implement a Universal School Meal Program to Eliminate Stigma

A universal approach to school meals, as demonstrated by South Korea, ensures that all children have equal access to nutritious meals regardless of their socio-economic status. This approach not only guarantees that every child receives at least one balanced meal each day but also eliminates the stigma that often accompanies means-tested programs. In contrast, the U.S. NSLP, which primarily targets low-income students, has been shown to suffer from participation barriers due to stigma (Poppendieck 2010). This stigma can discourage eligible children from taking advantage of the program, leading to missed opportunities for nutritional support (Gundersen and Ziliak 2014). To address these issues, the U.S. introduced the CEP, which allows schools in high-poverty areas to provide free meals to all children, thereby reducing stigma and increasing participation. In 2022 school year, 67.5 per cent of eligible school districts nationwide had adopted the CEP in at least one school (Food Research & Action Center 2023). While this represents significant progress, it also highlights that a substantial portion of eligible schools, particularly those with lower poverty levels, have not yet adopted the provision, potentially limiting its full impact in reducing stigma and expanding access to nutritious meals for all children.

It would be ideal for Canada to thoroughly prepare and launch the school meal program nationwide simultaneously. However, if Canada chooses to take a phased approach rather than immediately implementing a universal school meal program across the country, this paper recommends prioritizing the introduction of universal school meal programs in regions with the highest child poverty rates and food insecurity. Ensuring that meals are free at the point of participation and delivered in a non-stigmatizing environment will be crucial for maximizing participation and achieving health equity.

Recommendation 2. Enhance Nutritional Quality and Address Diverse Dietary Needs

South Korea's emphasis on eco-friendly and high-quality ingredients, including organic and non-GMO foods, provides a model for enhancing the nutritional quality of school meals. The program's focus on traditional foods and the integration of local agricultural products helps ensure that meals are both nutritious and culturally relevant (Gaddis and Jeon 2020; Ministry of Education of South Korea 2024). Additionally, the School Meals Act mandates that school meals must include a variety of foods to meet the nutritional needs essential for children's growth and health, with specific requirements based on gender and age (School Meals Act, Articles 5 and 11; Seoul Metropolitan Department of Lifelong Education 2023). The U.S. has also made strides in improving the nutritional standards of school meals through the Healthy, Hunger-Free Kids Act of 2010, which mandates the inclusion of more fruits, vegetables, and whole grains while reducing sodium and unhealthy fats (U.S. Department of Agriculture 2022).

Both South Korea and the U.S. provide valuable lessons on how to accommodate the diverse dietary needs of children. South Korea's proactive approach to identifying and addressing food allergies through school surveys and alternative food provisions ensures that students with special dietary needs are not excluded from the meal program (Ministry of Education of South Korea 2024; Seoul Metropolitan Department of Lifelong Education 2023). The U.S. mandates that schools provide tailored meals for children falling within 13 disability categories defined by the IDEA. These categories include conditions such as autism, deafness, emotional disturbance, and others, ensuring that children with a wide range of disabilities have access to meals that meet their specific dietary needs (U.S. Department of Agriculture. 2001).

Canada should consider that the program should not only adhere to rigorous nutritional standards but also offer tailored meal options for children with a broad range of disabilities. Expanding the categories of children eligible for specialized dietary accommodations, similar to the U.S. model, will ensure that no child is left behind due to dietary restrictions or health conditions.

Recommendation 3. Strengthen Local Food Systems and Promote Sustainability

The South Korean program's emphasis on eco-friendly and locally sourced ingredients, coupled with the U.S. Farm to School Program, highlights the importance of integrating local food systems into school meal programs. These initiatives not only support local farmers and economies but also contribute to environmental sustainability by reducing the carbon footprint associated with food production and transportation. A key lesson from South Korea, especially through the implementation of School Meal Service Support Centers, is the value of establishing centralized hubs. These centers facilitate the procurement and distribution of local, organic, and sustainable food to schools, ensuring consistent quality while bolstering regional agricultural communities by pooling resources and negotiating better terms for food purchases (Korea Agro-Fisheries and Food Trade Corporation 2023).

Sustainability is critical considerations for the long-term success of Canada's national school meal program. South Korea's experience highlights the importance of equitable funding and cost-sharing mechanisms between national, regional, and local governments (Gaddis and Jeon 2020). In the U.S., the rising issue of unpaid meal debts underscore the need for careful planning and resource allocation (Fleischhacker and Campbell 2020).

Canada's national school meal program should prioritize the procurement of locally sourced, organic, and sustainable food. This can be accomplished by establishing strong partnerships with local farmers, food producers, and suppliers, thereby not only strengthening the local economy but also advancing environmental sustainability. Implementing centralized hubs, such as School Meal Service Support Centers, across Canada could further facilitate these partnerships by coordinating the procurement and distribution of fresh, high-quality ingredients to schools in all regions, regardless of their financial status. These hubs would ensure consistency in quality and accessibility, particularly in underserved or remote areas.

Additionally, to prevent financial disparities and ensure nationwide participation, Canada should establish a transparent and fair cost-sharing model. This model would involve collaboration between the federal, provincial/ territorial, and municipal governments to distribute costs equitably across all regions. By doing so, Canada can ensure that every province and territory can fully participate in the program without facing financial strain.

Recommendation 4. Ensure Robust Monitoring, Evaluation, and Adaptation

South Korea's systematic approach to monitoring the quality and safety of school meals provides a valuable example. In South Korea, the School Management Committee regularly reviews the nutritional content and quality of meals, while the joint purchasing groups (Seoul Metropolitan Department of Lifelong Education 2023). Additionally, South Korean schools hold "School Meal Open Days", where parents and community members can observe meal preparation and provide feedback, enhancing transparency and community involvement.

To ensure the effectiveness and continuous improvement of its school meal program, Canada should implement a robust monitoring, evaluation, and adaptation framework. Canada should establish oversight mechanisms that include regular assessments of meal quality, nutritional standards, and children satisfaction. To enhance transparency and community engagement, Canada could introduce School Meal Open Days, allowing parents and community members to participate actively in the program by observing the meal preparation process and providing feedback. Additionally, Canada should be prepared to adapt the program based on feedback and evolving needs, ensuring that it remains responsive to changes in dietary trends, cultural preferences, and health guidelines.

Recommendation 5. Foster Food Literacy Through Curriculum Integration.

Food literacy encompasses "food skills and broader environmental contexts" (Government of Canada 2022). In South Korea, the integration of food literacy into the school curriculum, particularly through the “Safe Life” subject, has been instrumental in promoting healthy eating habits and awareness among students (Seoul Metropolitan Department of Lifelong Education 2023). The U.S. uses edible gardens to allow students to grow food themselves and experience healthy eating habits firsthand (Farm to School Census 2019). This approach not only teaches children about the importance of nutrition but also engages them in the process of food preparation and safety. Individuals with high levels of food literacy demonstrate greater confidence in making healthy food choices and they are more likely to adopt and maintain healthy eating habits (Lai et al. 2021; Lavelle et al. 2016).

Canada should consider incorporating food literacy into its school curricula as part of the national school meal program. This could involve developing specific courses or modules focused on nutrition, food safety, and sustainable food practices. Such education would equip children with the knowledge and skills necessary to make informed food choices, fostering lifelong healthy eating habits. Additionally, hands-on activities like school gardens could be included to enhance practical learning and connect children with local food systems.

Limitations

While the recommendations provided offer a comprehensive framework for the implementation of Canada’s national school meal program, certain limitations must be acknowledged.

The cultural, economic, and geographical diversity of Canada presents unique challenges that may require region-specific adaptations of the program. Canada is a vast country with significant variations in population density, cultural practices, and economic conditions across its provinces and territories. A one-size-fits-all approach may not be feasible, as the needs and resources available in urban centers like Toronto or Vancouver can differ greatly from those in remote or Indigenous communities. This diversity necessitates a flexible program design that can be tailored to local contexts, ensuring that all children, regardless of where they live, have access to nutritious meals.

The analysis does not fully account for the impact of the COVID-19 pandemic, which has significantly influenced school meal programs worldwide. The pandemic brought about unprecedented disruptions to education systems, including school meal delivery. In many regions, traditional in-school meal programs were replaced or supplemented by alternative methods such as meal deliveries or take-home packages. Also, the U.S. implemented a nationwide universal school meal program, temporarily providing free meals to all children regardless of income. These changes may have long-lasting effects on how school meal programs are structured and delivered. By not fully incorporating the pandemic's impact, the analysis may overlook critical insights and innovations that have emerged during this period, which could inform the future design of the program.

Reference

Alaimo, Katherine, Christine M. Olson, and Edward A. Frongillo. 2001. "Food insufficiency and American school-aged children's cognitive, academic, and psychosocial development." *Pediatrics*, *108*(1), 44-53. https://doi.org/10.1542/peds.108.1.44

Baxter, Suzanne Domel, James W. Hardin, Caroline H. Guinn, Julie A. Royer, Alyssa J. Mackelprang, and Christina M. Devlin. 2010. "Children's body mass index, participation in school meals, and observed energy intake at school meals." *International Journal of Behavioral Nutrition and Physical Activity,* 7: 1-8. https://doi.org/10.1186/1479-5868-7-24

Bethmann, Dirk, and Jae Il Cho. 2022. "Korea, The impacts of free school lunch policies on adolescent BMI and mental health: Evidence from a natural experiment in South." *SSM-Population Health,* 18, 101072. https://doi.org/10.1016/j.ssmph.2022.101072

Braveman, Paula. "What is health equity: and how does a life-course approach take us further toward it?." *Maternal and child health journal* 18(2014): 366-372. https://doi-org.ezproxy.lib.ucalgary.ca/10.1007/s10995-013-1226-9.

Braveman, Paula, Elaine Arkin, Tracy Orleans, Dwayne Proctor, Julia Acker, and Alonzo Plough. 2018. "What is health equity?" *Behavioral Science & Policy,* 4(1): 1-14. https://doi.org/10.1177/237946151800400102

Butz Leah. 2023. "States that Have Passed Universal Free School Meals (So Far)." Hunter College New York City Food Policy Center. https://www.nycfoodpolicy.org/states-that-have-passed-universal-free-school-meals

Casey, Patrick H., Pippa M. Simpson, Jeffrey M. Gossett, Margaret L. Bogle, Catherine M. Champagne, Carol Connell, David Harsha, Beverly McCabe-Sellers, James M. Robbins, Janice E. Stuff, and Judith Weber. 2006. "The Association of Child and Household Food Insecurity With Childhood Overweight Status." *Pediatrics,* 118(5): e1406-e1413. https://doi.org/10.1542/peds.2006-0097

Cho, Hyeyeong, Jihyun Yoon, and Soyoung Kim. 2015. "A Case Study of School Meal Service Support Centers." *The Korean Journal of Community Living Science,* 26(2): 335-349. https://www.dbpia.co.kr/journal/articleDetail?nodeId=NODE06391901

Cohen Juliana F. W., Amelie A. Hecht, Gabriella M. McLoughlin, Lindsey Turner, and Marlene B. Schwartz. 2021. “Universal School Meals and Associations with Student Participation, Attendance, Academic Performance, Diet Quality, Food Security, and Body Mass Index: A Systematic Review.” *Nutrients,* 13(3): 911. https://www.doi.org/10.3390/nu13030911

Cohen, Juliana F.W, Kristen Cooksey Stowers, Angela Odoms-Young, and Rebecca L Franckle. 2023a. “A Call for Theory to Guide Equity-Focused Federal Child Nutrition Program Policy Responses and Recovery Efforts in Times of Public Health Crisis.” *Journal of the Academy of Nutrition and Dietetics,* 123(1): 15-28. https://doi.org/10.1016/j.jand.2022.07.016

Community Health Improvement Partners. 2016. *The State of Farm to School in San Diego County.* https://www.sdchip.org/wp-content/uploads/2015/12/State-of-F2S-in-SD-County-2015.pdf

Cook, John T., Deborah A. Frank, Alan F. Meyers, Carol Berkowitz, Maureen M. Black, Patrick H. Casey, Diana B. Cutts, Nieves Zaldivar, Anne Skalicky, Suzette Levenson, Tim Heeren, and Mark Nord. 2004. “Food Insecurity Is Associated with Adverse Health Outcomes among Human Infants and Toddlers.” *The Journal of Nutrition,* 134(6): 1432-1438. https://doi.org/10.1093/jn/134.6.1432

Council on Community Pediatrics and Committee on Native American Child Health. 2010. “Policy statement--health equity and children's rights.” *Pediatrics,* 125(4): 838-839. https://doi.org/10.1542/peds.2010-0235

Cullen, Karen Weber, and Tzu-An Chen. 2017. “The contribution of the USDA school breakfast and lunch program meals to student daily dietary intake*.” Preventive medicine reports,* 5, 82-85. https://www.doi.org/10.1016/j.pmedr.2016.11.016

Deagu Metropolita Office of Education. 2024. “2024 Eco-Friendly School Meal Support Plan Report.” https://www.dge.go.kr/main/na/ntt/selectNttInfo.do?mi=6744&nttSn=2088832

Domina, Thurston, Leah Clark, Vitaly Radsky, and Renuka Bhaskar. 2024. “There Is Such a Thing as a Free Lunch: School Meals, Stigma, and Student Discipline.” *American Educational Research Journal*, 61(2): 287-327. https://doi.org/10.3102/00028312231222266

Everitt, Tracy, Rachel Engler-Stringer, Wanda Martin, and Hassanali Vatanparast. 2020. “Comparing diet quality of school meals versus food brought from home.” *Canadian Journal of Dietetic Practice and Research*, 81(4): 179-185. https://doi.org/10.3148/cjdpr-2020-013

Everitt, Tracy, Stephanie Ward, Wanda Martin, and Rachel Engler-Stringer. 2023. "Factors contributing to school food program acceptance: a review of Canadian literature." *Health Promotion International*, 38: 1-12. https://doi.org/10.1093/heapro/daac160

Farm to School Census. 2019. "Farm to School Census Results Overview." accessed August 4, 2024. https://farmtoschoolcensus.fns.usda.gov/census-results-overview

Fleischhacker, Sheila, and Elizabeth Campbell. 2020. "Ensuring equitable access to school meals." *Journal of the Academy of Nutrition and Dietetics,* 120(5): 893-897. https://doi.org/10.1016/j.jand.2020.03.006

Food Banks Canada. 2023. *Hunger Count 2023.* https://foodbankscanada.ca/hungercount

Food Research & Action Center. 2020. "Child Nutrition Reauthorization: School Meals Debt." https://frac.org/wp-content/uploads/cnr-addressing-school-meals-debt.pdf

Frisvold, David E. 2015. "Nutrition and cognitive achievement: An evaluation of the School Breakfast Program." *Journal of Public Economics,* 124, 91-104. https://doi.org/10.1016/j.jpubeco.2014.12.003

Fung, Christina, Stefan Kuhle, Connie Lu, Megan Purcell, Marg Schwartz, Kate Storey, and Paul J Veugelers. 2012. "From "best practice" to "next practice": the effectiveness of school-based health promotion in improving healthy eating and physical activity and preventing childhood obesity." *The international journal of behavioral nutrition and physical activity,* 9(1): 27. https://doi.org/10.1186/1479-5868-9-27

Gaddis, Jennifer E., and June Jeon. 2020. "Sustainability Transitions in Agri-Food Systems: Insights from South Korea's Universal Free, Eco-Friendly School Lunch Program." *Agriculture and Human Values,* 37(4): 1055-71. https://doi.org/10.1007/s10460-020-10137-2

Gagliano, Katrina M., Monica O. Yassa, and Adam Winsler. 2023. "Stop the shame and the hunger: The need for school meal program reform." *Children and Youth Services Review* 155, 107245. https://doi.org/10.1016/j.childyouth.2023.107245

Gearan, Elizabeth C., Kelley Monzella, Alice Ann Gola, and Holly Figueroa. 2021. "Adolescent participants in the school lunch program consume more nutritious lunches but their 24-hour diets are similar to nonparticipants." *Journal of Adolescent Health*, 69(2): 308-314. https://doi.org/10.1016/j.ssmph.2022.101072

Gleason, Philip M., and Carol W. Suitor. "Eating at school: How the National School Lunch Program affects children's diets." *American Journal of Agricultural Economics,* 85(4): 1045-1061. https://doi.org/10.1111/1467-8276.00507

Gougeon, Laura A.R., Carol J. Henry, Dan Ramdath, Susan J. Whiting. 2011. “Dietary analysis of randomly selected meals from the Child Hunger and Education Program School Nutrition Program in Saskatchewan, Canada, suggests that nutrient target levels are being provided.” *Nutrition Research,* 31 (3): 215-222. https://doi.org/10.1016/j.nutres.2011.03.002

Government of Canada. (2022). “Resources for Health Professionals and Policy Makers. Canada’s Food Guide.” https://food-guide.canada.ca/en/guidelines/section-3-importance-food-skills

Government of Canada. 2024a. “National School Food Policy. Employment and Social Development Canada.” accessed July 22, 2024. https://www.canada.ca/en/employment-social-development/programs/school-food/reports/national-policy.html

Government of Canada. 2024b. “A National School Food Program to set kids up for success.” accessed July 22, 2024. https://www.pm.gc.ca/en/news/news-releases/2024/04/01/national-school-food-program-set-kids-success

Grineski, Sara E., Danielle X. Morales, Timothy W. Collins, and Ricardo Rubio. 2018. “Transitional dynamics of household food insecurity impact children's developmental outcomes.” *Journal of Developmental & Behavioral Pediatrics*, *39*(9), 715-725. https://doi.org/10.1097/DBP.0000000000000598

Gundersen, Craig, Brent Kreider, and John Pepper. 2012. “The impact of the National School Lunch Program on child health: A nonparametric bounds analysis.” *Journal of Econometrics,* 166(1): 79-91. https://doi.org/10.1016/j.jeconom.2011.06.007

Gundersen, Craig, and James P. Ziliak. 2014. “Childhood food insecurity in the US: Trends, causes, and policy options.” *The Future of Children (Princeton University),* 1-19. http://www.jstor.org/stable/26304695

Gundersen, Craig, and James P. Ziliak. 2015. “Food insecurity and health outcomes. *Health affairs*, *34*(11), 1830-1839.” https://doi.org/10.1377/hlthaff.2015.0645

Gupta, Suvadra Datta, Punam Pahwa, and Rachel Engler-Stringer. 2023. “An examination of willingness to participate and willingness to pay for a universal school food program in the Canadian context.” *Public Health Nutrition*, 26(12): 3266-3277. https://doi.org/10.1017/S1368980023002070

Handbury, Jessie, and Sarah Moshary. 2021. “School food policy affects everyone: Retail responses to the national school lunch program.” *National Bureau of Economic Research*, No. w29384. https://doi.org/10.3386/w29384

Harper, Kaitlyn, Bree Bode, Kritika Gupta, Ally Terhaar, Aysegul Baltaci, Yuka Asada, and Hannah Lane. 2023. “Challenges and opportunities for equity in US school meal programs: a scoping review of qualitative literature regarding the COVID-19 emergency.” *Nutrients,* 15(17): 3738. https://doi.org/10.3390/nu15173738

Hernandez, Kimberley, Rachel Engler-Stringer, Sara Kirk, Hannah Wittman, and Sasha McNicholl. 2018. “The case for a Canadian national school food program.” *Canadian Food Studies,* 5(3): 208-229. https://doi.org/10.15353/cfs-rcea.v5i3.260

Hobbs, Savannah, and Christian King. 2018. “The unequal impact of food insecurity on cognitive and behavioral outcomes among 5-year-old urban children.” *Journal of Nutrition Education and Behavior*, *50*(7), 687-694. https://doi.org/10.1016/j.jneb.2018.04.003

Healthy, Hunger-Free Kids Act of 2010. 13 December 2010, Pub. L. No. 111-296.

Jyoti, Diana F., Edward A. Frongillo, and Sonya J. Jones. 2005. “Food Insecurity Affects School Children’s Academic Performance, Weight Gain, and Social Skills.” *The Journal of nutrition*, 135(12): 2831-2839. https://doi.org/10.1093/jn/135.12.2831

Ke, Janice, and Elizabeth Lee Ford-Joones. 2015. “Food insecurity and hunger: A review of the effects on children’s health and behaviour.” *Paediatrics & child health,* 20(2): 89-91. https://doi.org/10.1093/pch/20.2.89

Kim, Yeji, Kumhee Son, Jieun Kim, Miji Lee, Kyung-Hee Park, and Hyunjung Lim. 2023. “Associations between School Lunch and Obesity in Korean Children and Adolescents Based on the Korea National Health and Nutrition Examination Survey 2017–2019 Data: A Cross-Sectional Study.” *Nutrients*, 15(3): 698. https://doi.org/10.3390/nu15030698

Kimbro, Rachel Tolbert, and Justin T. Denney. 2015. “Transitions into Food Insecurity Associated with Behavioral Problems and Worse Overall Health among Children.” *Health Affairs,* 34(11): 1949-1955. https://doi.org/10.1377/hlthaff.2015.0626

Korea Agro-Fisheries and Food Trade Corporation. 2023. “2023 Eco-Friendly Agricultural Products Distribution and Agricultural Income, School Meal Status Survey: Report on the Status of Eco-Friendly Agricultural Products in School Meals.” https://www.kamis.or.kr/customer/nature/schoolfood.do?action=detail&brdctsno=436388&pagenum=1&search_option=&search_keyword=&

Korean Education Development Institute. 2020. “2020 Comprehensive Report on the Analysis of Public and Private School Accounts.” https://eduinfo.go.kr/portal/bbs/bbsListPage.do?bbsCd=FSL1004&code=fsl&leftCd=1&subCd=

Kumanyika, Shiriki. 2017. “Getting to Equity in Obesity Prevention: A New Framework.” Discussion Paper, National Academy of Medicine. Washington, DC. https://doi.org/10.31478/201701c

Kwon, Sooyoun, Oksun Kim, and Youngmi Lee. 2018. “Effects of students' satisfaction with school meal programs on school happiness in South Korea.” *Nutrition Research and Practice,* 12(4): 342. https://doi.org/10.4162/nrp.2018.12.4.342

Lai, I-Ju, Li-Chun Chang, Chia-Kuei Lee, and Li-Ling Liao. 2021. “Nutrition Literacy Mediates the Relationships Between Multi-Level Factors and College Students’ Healthy Eating Behavior: Evidence from a Cross-Sectional Study.” *Nutrients*, 13(10), 3451. https://doi.org/10.3390/nu13103451

Lavelle, Fiona, Michelle Spence, Lynsey Hollywood, Laura McGowan, Dawn Surgenor, Amanda McCloat, Elaine Mooney, Martin Caraher, Monique Raats, and Moira Dean. 2016. “Learning cooking skills at different ages: a cross-sectional study.” *International Journal of Behavioral Nutrition and Physical Activity*, *13*, 119. https://doi.org/10.1186/s12966-016-0446-y

Lee, Sang-Yoon, and Ho Kim. 2017. “Social and Economic Effects of Environment-friendly School Food Service Center on Environment-friendly Agricultural Producers -Focused on Three Cases in Chungcheongnam-Do.” *Korean journal of organic agriculture,* 25(3): 523-536. https://www.dbpia.co.kr/journal/detail?nodeId=T14478073

Lopez-Neyman, Stephanie M., and Cynthia A. Warren. 2016. “Barriers and advantages to student participation in the school breakfast program based on the social ecological model: a review of the literature.” *The Journal of Child Nutrition & Management,* 40(2): 1-13. https://schoolnutrition.org/journal/fall-2016-barriers-and-advantages-to-student-participation-in-the-school-breakfast/#full-article

Marcus, Michelle, and Katherine G. Yewell. 2022. “The Effect of Free School Meals on Household Food Purchases: Evidence from the Community Eligibility Provision.” *Journal of Health Economics*, 84, 102646. https://doi.org/10.1016/j.jhealeco.2022.102646

Melchior, Maria, Jean-François Chastang, Bruno Falissard, Cédric Galéra, Richard E. Tremblay, Sylvana M. Côté, and Michel Boivin. 2012. “Food Insecurity and Children’s Mental Health: A Prospective Birth Cohort Study.” Plos One, 7(12): e52615. https://doi.org/10.1371/journal.pone.0052615.

Marmot, M., and S. Friel. 2008. “Global health equity: evidence for action on the social determinants of health.” *Journal of Epidemiology & Community Health*, *62*(12), 1095-1097. https://jech.bmj.com/content/62/12/1095

McLoughlin, Gabriella M., Julia A. McCarthy, Jared T. McGuirt, Chelsea R. Singleton, Caroline G. Dunn, and Preety Gadhoke. 2020. "Addressing Food Insecurity through a Health Equity Lens: a Case Study of Large Urban School Districts during the COVID-19 Pandemic." *Journal of Urban Health,* 97: 759-775. https://doi.org/10.1007/s11524-020-00476-0

Ministry of Education of South Korea. 2024. "School Meal Implementation Status for the 2023 Academic Year." https://www.moe.go.kr/boardCnts/viewRenew.do?boardID=316&lev=0&statusYN=W&s=moe&m=0302&opType=N&boardSeq=100304

Negussie, Yamrot, Amy Geller, and Jennifer E. DeVoe, eds. 2019. *Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity.* Washington: National Academies Press.

Pearce, Jo, Lesley Wood, and Michael Nelson. "Lunchtime food and nutrient intakes of secondary-school pupils; a comparison of school lunches and packed lunches following the introduction of mandatory food-based standards for school lunch." *Public health nutrition,* 16(6), 1126-1131. https://doi.org/10.1017/S1368980012003928

Peterson, Cora. 2014. "Investigating the historic long-term population health impact of the US National School Lunch Program." *Public health nutrition,* 17(12): 2783-2789. https://doi.org/10.1017/S1368980013003200

Poppendieck, Janet. 2010. *Free for all: Fixing school food in America*. Berkeley: University of California Press.

Pulimeno, Manuela, Prisco Piscitelli, Salvatore Colazzo, Annamaria Colao, and Alessandro Miani. 2020. "School as ideal setting to promote health and wellbeing among young people." *Health Promot Perspect,* 10(4): 316-324. https://doi.org/10.34172/hpp.20

Ralston, Katherine, Katie Treen, Alisha Coleman-Jensen, and Joanne Guthrie. 2017. "Children's Food Security and USDA Child Nutrition Programs." https://www.ers.usda.gov/webdocs/publications/84003/eib-174.pdf?v=1223.2

Rogus, Stephanie, Joanne Guthrie, and Katherine Ralston. 2018. "Characteristics of school districts offering free school meals to all students through the community eligibility provision of the national school lunch program." ERR-255, U.S. Department of Agriculture, Economic Research Service, https://doi.org/10.22004/ag.econ.276219

Ruetza, Amberley T., and Mary L. McKennab. 2021. "Characteristics of Canadian school food programs funded by provinces and territories." *Canadian Food Studies,* 8(3): 70-106. https://doi.org/10.15353/cfs-rcea.v8i3.483

Ruetz, Amberley T., Gabrielle. Edwards, and Flora Zhang. 2023. "The Economic Rationale for Investing in School Meal Programs for Canada: multi-sectoral impacts from comparable high-income countries" The Arrell Family Foundation. https://amberleyruetz.ca/assets/uploads/ruetz-consulting_the-economic-rationale-for-investing-in-school-meal-programs-for-canada.pdf

School Meals Act. 29 June 2022, Ministry of Government Legislation No. 18639.

School Meals Act Enforcement Decree. 25 April 2023, Presidential Decree No. 33434

School Meals Act Enforcement Rule. 30 June 2021, Ministry of Education Decree No. 240

School Nutrition Association. 2024. "2024 School Nutrition Trends Report. School Nutrition Association" https://schoolnutrition.org/wp-content/uploads/2024/01/2024-Trends-Report.pdf

Seoul Metropolitan Ordinance on Support for Eco-Friendly Free School Meals. 29 December 2023, Seoul Metropolitan Ordinance No. 8993.

Seoul Metropolitan Department of Lifelong Education. 2023. "2023 Eco-Friendly School Meal Support Plan Report." https://ms.smc.seoul.kr/record/recordView.do?key=b686e124877f81c7e995d7d407be97572fe6c1cd116d34881a466e15479a728bbab252f51990c264

Statistics Canada. 2024. "Canadian Income Survey, 2022." Accessed July 23, 2024. https://www150.statcan.gc.ca/n1/daily-quotidien/240426/dq240426a-eng.htm?HPA=1

The Act on the Promotion of Food Donations. 23 April 2019, Ministry of Government Legislation No. 16373.

The Office of Research, Nutrition and Analysis. 2007. "NSLP/SBP Access, Participation, Eligibility, and Certification Study." https://www.fns.usda.gov/research/cn/nslp-sbp-access-participation-eligibility-certification-study-erroneous-payments

The Rockefeller Foundation and the Center for Good Food Purchasing. 2021. "True Cost of Food: School Meals Case Study." https://www.rockefellerfoundation.org/report/true-cost-of-food-school-meals-case-study

Toossi Saied. 2024. "The effect of universal free school meals on children's food hardship." *Food Policy,* 124, 102606. https://doi.org/10.1016/j.foodpol.2024.102606

U.S. Congressional Research Service. 2023. "School Meals and Other Child Nutrition Programs: Background and Funding. U.S." https://crsreports.congress.gov/product/pdf/R/R46234

U.S. Department of Agriculture. 2001. "Accommodating Children with Special Dietary Needs in the School Nutrition Programs." https://www.fns.usda.gov/cn/accommodating-dietary-needs-schools

U.S. Department of Agriculture. 2022. "FACT SHEET: Healthy, Hunger-Free Kids Act School Meals Implementation." accessed August 4, 2024. https://www.fns.usda.gov/pressrelease/2014/009814

U.S. Department of Agriculture. 2024a. "Food and Nutrition Service." accessed August 12, 2024. https://www.fns.usda.gov/nslp/factsheet

U.S. Department of Agriculture. 2024b. "Child Nutrtion Tables." accessed August 5, 2024. https://www.fns.usda.gov/pd/child-nutrition-tables

U.S. Department of Agriculture. 2024c. Child Nutrition Programs: Income Eligibility Guidelines (2024-2025). accessed August 5, 2024. https://www.fns.usda.gov/cn/fr-022024

United Nations System Standing Committee on Nutrition. 2017. *Schools as a system to improve nutrition. A new statement for school-based food and nutrition interventions.* https://www.unscn.org/uploads/web/news/document/School-Paper-EN-WEB-8oct.pdf

World Health Organization. 2020. *Nutrition Action in Schools: A Review of The Evidence Related to the Nutrition-Friendly Schools Initiative*. https://iris.who.int/bitstream/handle/10665/338781/9789241516969-eng.pdf

World Health Organization. 2021. "Health Equity." accessed July 20. https://www.who.int/health-topics/health-equity#tab=tab_1

Zhong, Anthony, Lillian Yin, Brianne O'Sullivan, and Amberley T. Ruetz. 2023. "Historical lessons for Canada's emerging national school food policy: an opportunity to improve child health." *Health Promotion and Chronic Disease Prevention in Canada,* 43(9): 421-425. https://doi.org/10.24095/hpcdp.43.9.04

Zuercher, Monica D., Juliana F. W. Cohen, Christina E. Hecht, Kenneth Hecht, Lorrene D. Ritchie, and Wendi Gosliner. 2022. "Providing School Meals to All Students Free of Charge during the COVID-19 Pandemic and Beyond: Challenges and Benefits Reported by School Foodservice Professionals in California." *Nutrients,* 14(18): 3855. https://doi.org/10.3390/nu14183855