



The incompatibility of nutrition regulation and market-based internal school food environments in English-Speaking Canada

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Abstract. The intent of this research was to critically examine the purpose and limitations of nutrition regulation in school food environments across Canada. Examining these environments as extensions of the welfare state shows how the neoliberal influence in these spaces makes regulation challenging relative to other countries with a school meal program. Content analysis and semi-structured interviews show that the regulations applied to internal school food environments are unable to achieve their desired outcomes. Factors beyond the scope of the regulations, including unequal access to compliant foods, insufficient enforcement of the regulations, and social and cultural aspects of diet including preference for foods of low nutritional value and access to unregulated spaces near school property, are barriers to effectively implementing a financially viable, healthful school nutrition regulation.

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INTRODUCTION

This research demonstrates the incompatibility of these regulatory levers in a market-based school food environment by bringing together the school nutrition regulations from each Canadian province and Yukon Territory as well as through interviews with those involved in the development and implementation of the regulation, placing these regulations in the context in which they are applied. By moving the examination of school food environments from the subnational jurisdiction to a national scope, this research demonstrates that the limitations experienced in each province and territory are shared, at least in part because of the market-based nature of the school food environments that are common in each location. The national scope also contributes to a larger discussion the school meal as part of welfare state provision in relation to other countries.

BACKGROUND

School Food in Canada

Each of the ten provinces and Yukon Territory have written or revised school nutrition regulations in an effort to align the offerings in school cafeterias, vending machines, tuck shops, and other sites on school property where foods and beverages are sold with the messages about nutrition and health taught in the curriculum (Alberta Government, 2012; British Columbia, 2013; Manitoba, 2014; New Brunswick, 2008; Newfoundland and Labrador, 2008; Nova Scotia, 2006; Ontario Ministry of Education, 2010; Prince Edward Island Eastern School District, 2011; Quebec Ministère de l'Éducation, du Loisir, et du Sport (MELS), 2007; Saskatchewan, 2009; Yukon

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Territory, 2008). These regulations put forward by provincial and territorial governments are either policies, which apply to all schools in the subnational jurisdiction (British Columbia, New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Yukon), or a guideline for school boards/districts/divisions to use to create their own school nutrition policy (Alberta, Manitoba, Newfoundland and Labrador, Quebec, Saskatchewan). Examining the regulation of food and beverage sales in Canadian schools highlights the political economic concerns associated with nutrition regulation in the public sphere.

In Canada, most school-aged children arrive at school with food from home, though some are sent with money to purchase food, where facilities exist (Harper et al., 2008). These facilities can include vending machines, tuck shops, canteens, and cafeterias, and may include the occasional day in which catered food is available for purchase in schools that otherwise have limited facilities to sell food on a regular basis. It is to these spaces that the provincial and territorial regulations apply. The provincial and territorial regulations do not apply to the food brought from home, purchased in spaces off of school property during the school day, and food distributed without cost, for instance classroom treats to celebrate a birthday.

Considerable attention has been given to the presence of pseudo foods, so named because of their lack of nutritional value, that are sold to students on school property in Canadian schools (Winson, 2008; Winson et al., 2012; Winson, 2013). It is these foods that the new and revised school nutrition regulations from the various subnational jurisdictional governments across Canada are attempting to remove or at least reduce in school food environments.

The efficacy of the school nutrition policies as regulatory interventions has been studied at the elementary school level in the Canadian provinces of Prince Edward Island (PEI) (Mullaly, et al., 2010; Taylor, et al., 2011) and Nova Scotia (Fung, et al., 2013; McIsaac, et al., 2015). These studies found that the implementation of school food regulations resulted in students being more likely to bring food from home than eat the food offered at school, suggesting that although the schools may no longer be supplying the pseudo foods, it does not mean that students are eating better. Taylor, et al. (2011) found that principals struggled to fully implement and enforce the regulations due to lost revenue for the school, higher associated costs, and limited availability of compliant food. In the Canadian province of Ontario, Vine and Elliott (2014) focused on the impact of school food and beverage policy on secondary school food environments and found that the policy restrictions for the sale of certain foods and beverages on school property have further encouraged students to leave the school food environment. School administration and cafeteria managers are struggling to make up the increased costs of healthier foods and beverages and efforts are exasperated further by low sales (Vine and Elliott, 2014). The policy in is not in a position to change the taste preferences of the students, who are the primary customers for the school food environments and consequently some schools are at risk of losing their cafeterias altogether (Vine and Elliott, 2014).

Vine and Elliott's (2014) work, along with the work of Winson (2008) and Winson, et al., (2012) draw attention to the relevance of what is referred to as the external school food environment. Researchers have drawn attention to the role food service providers off of school property, including fast food restaurants and convenience stores, have as part of the school food environment (Austin, et al., 2005; Winson, 2008; Davis and Carpenter, 2009; Vine and Elliot, 2014) but these spaces fall outside the purview of the subnational jurisdiction school food regulations. These food environments in close proximity to schools, but not on school property, emphasize the limitations of the provincial and territorial school nutrition regulations because they

are part of the school food environment by virtue of being accessible to students during the school day, but do not fall under the jurisdiction of the school nutrition regulations.

Neoliberalism

Regulatory levers, such as school nutrition regulations, and a government's willingness to enact them are influenced by the political economy of the government in question. Both federal and provincial levels of government in Canada have been influenced by neoliberalism, which is critical for this research as education and health care are the responsibility of the provinces, not the federal government. Neoliberalism refers to a theory of political economy that "proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade" (Harvey, 2005: 2). The component of this definition that is most useful for this research is the prioritization of the free market. Harvey (2005), among others (Bakker and Scott, 1997; Palley, 2005; Connell, 2010) noted the rise and institutionalization of this political economic philosophy in the United Kingdom, United States, and throughout the world including Canada beginning in the 1980s. Leaders of countries and subnational jurisdictions, including provinces and territories, began to minimize the role of the state in terms of private sector regulation as well as welfare provision (Bakker and Scott, 1997; Harvey, 2005; Palley, 2005; Connell, 2010). When examining school food regulations in Canada, neoliberal influence is evident in the inability for provincial and territorial governments to limit where fast food outlets are allowed to be placed in proximity to schools. This is troubling as Austin et al., (2005) and Winson (2008) suggest these businesses are likely targeting these spaces, undermining the efforts of those within the school to improve the overall health and wellness of the school community.

School food and the welfare state

A key consideration in understanding the school food environment in Canada is to understand its unique position among many other countries in this respect (Harper et al., 2008). There are no government funded school nutrition programs, with the exception of the province of Alberta in which some schools offer a lunch program that receives provincial funding (Government of Alberta, 2017). Even though the school day typically requires students to be at school during the lunch hour, the majority of students across the country are not provided this meal (Harper et al., 2008). Many other countries do provide students with a meal during the school day, although the approaches may be different. For instance, in the United States (Levine, 2008; Poppendieck, 2010), and the United Kingdom (Vernon, 2005; Nelson et al., 2007), the school meal was introduced to schools once schools became public and attendance became mandatory. The meals were initially provided charitably to pacify children from lower-income families who were coming to school hungry and disrupting the other children, but after some time the government began to provide the meal so that all students, not just those who were able to access such charity (Vernon, 2005; Levine 2008; Nelson et al., 2007; Poppendieck, 2010). Now, governments supplement the costs of school day meals for students in full or in part, on the basis of means-testing (Vernon, 2005; Levine, 2008; Nelson et al., 2007; Poppendieck, 2010).

In Sweden and Finland, the school meal is provided by the state in full because it is seen as a cost intrinsic to public education (Harper et al., 2008; National Food Agency Sweden, 2013; Finnish National Board of Education). Italy guarantees children's right to local and healthy food,

and though the meal is not free for all students, emphasis is placed on providing students access to quality food while they are at school, and diet and food culture are important parts of the curriculum (Harper et al., 2008; Morgan and Sonnino, 2008; Simonetti, 2012). The idea underlying school food in each of these cases is that all students have the same access to food.

It can be argued that the provision, or lack thereof, of the school day meal tends to reflect the country's approach to the provision of the welfare state, including education. Each of the countries included in the review thus far have de-commodified education, which is to say education is provided by the state, collectively paid for through taxes instead of purchased by individuals in the market (Esping-Andersen, 1990). The approaches to the provision of the meal during the school day differ accordingly. For instance, Sweden and Finland exemplify what Esping-Andersen (1990) would call the social-democratic welfare regime and in these countries the state provides students with the necessary materials to attend school, including the meal. In the United States, which otherwise has a liberal welfare regime in which social welfare programs are typically purchased from the market (Esping-Andersen, 1990), school is provided by the state, and any state-provided school-day meal is made available on the basis of a means-test; in other words, students from low-income families may qualify for a free or reduced-price meal, with the expectation that students are provided with food from home or money to purchase from school facilities at full cost (Levine, 2008; Poppendieck, 2010). Otherwise, students are free to bring food from home, or purchase food as they choose and as their income, or that of their families, will allow. The United Kingdom has a similar model of school meal provision (Vernon, 2005; Nelson, et al., 2007). In cases of the United States and United Kingdom, the state intervenes only when the individual is unable to purchase sufficient food from the market (Vernon, 2005; Nelson et al., 2007); it is an act of charity for those from a low-income household.

An advantage of having the state provide a meal during the school day, as opposed to a strictly market-based food provision system, is the spaces surrounding school are less of a factor in the regulation of nutrition and well-being of the students. The school food environment may be a market for some, such as in the case of the United States and United Kingdom, but the de-commodification in whole or in-part, means the market is not free; price is less of a deciding factor in food choices for at least a portion of the student population, and these spaces compete less with those near schools, although competition does still exist (Austin et al., 2005; Poppendieck, 2010). Another advantage of having the state provide the school meal is the ability to direct the students' diet while in the care of the teachers and school administration. When the state provides students the meal, what Morgan and Sonnino (2008) refer to generally as the public plate, the ability to encourage the consumption of nutritious foods can be realized by providing students with food and beverages that comply with desired outcomes of a mandate or in the Canadian example, the nutrition regulations, while also circumventing the resistance many young people have to consuming more nutritious products. (Mullaly, et al., 2010; Taylor, et al., 2011; Fung, et al., 2013; McIsaac, et al., 2015).

Whether social-democratic or liberal in approach, many countries are offering food to students during the school day. For Canadian students, however, no meal is provided by the state while attending mandatory public education. Although provincial governments provide 74% of funding school boards across the country receive according to the most recently available data, there are many costs for which school boards require other sources of funding, including sales of goods and services (Statistics Canada, 2015). As a result of underfunding, individuals are expected to purchase certain school related goods and services through the market, including the school-day meal.

The regulation of school food environments in Canada highlights the unique character of these spaces relative to other OECD countries. Having a purely market-based internal school food environment makes it difficult to implement state regulation effectively. The ability of these regulations to support school-aged children in making healthy food choices is undermined by the many aspects of the school food environment that fall outside of the jurisdiction of the bodies that issued the school nutrition regulations.

METHODS

A manifest content analysis of the school nutrition regulatory documents and transcripts of semi-structured interviews was carried out to examine the school nutrition regulations and their impact on school food environments.

Data Collection

The documents issued by each of the subnational jurisdictions addressing school nutrition were included in the data collection. The documents were selected beginning with a search of the provincial and territorial government websites pertaining to education and health searching for phrases including and related to “school nutrition policy”, “school nutrition regulation”, and “food and beverage policy for schools”. Each of the ten provinces and Yukon Territory had some documentation pertaining to the regulation of the nutrition of foods and beverages permitted for sale on school property. New Brunswick, Nova Scotia, PEI, and Saskatchewan had more than one document that addressed school nutrition regulation. This method for finding relevant documents did not produce any results for Northwest Territories or Nunavut, so they were not included in this research.

To learn about the outcomes of the school nutrition regulations in their respective school food environments, those who were involved with the development and/or implementation of the regulations were contacted to participate in semi-structured interviews. Semi-structured interviews allow for participants to be asked the same set of questions, but also to elaborate by being asked a series of probing questions (Galletta, 2013).

After receiving approval from the Research Ethics Board of the University of Guelph, a condition of which is the participants identities are to be kept confidential, recruitment was initially guided by contacting the department within the subnational jurisdictional government from which the document was obtained. In some instances, the author, or authors of the documents were named in the document or on the website the document came from, providing the researcher with a contact to begin investigating potential interview participants. Where authors were not given, the department was contacted by telephone or email, depending on the contact information given in the document itself or the document website, asking to be directed to the person with knowledge of the development and/or implementation of school nutrition regulations for that subnational jurisdiction. Following contact with subnational jurisdictional governments, English language, public school boards/districts/divisions were contacted which, along with some snowball sampling, garnered participation from those responsible for implementing the regulations. Informed consent was obtained from all participants included in the study.

Seventeen people agreed to participate in the interviews: two from Yukon Territory, one from British Columbia, two from Alberta, two from Saskatchewan, three from Manitoba, three from Ontario, two from New Brunswick, and two from Newfoundland, who participated in the interview together. Representation from each subnational jurisdiction with a school nutrition

regulation was sought, however, the researcher was unable to get participation from Quebec, Nova Scotia, or PEI. Each participant was chosen because of his or her involvement in school nutrition regulation in a professional capacity, either at the subnational jurisdictional level, the school district/division/board level, school level, or working with a school-based nongovernmental organization involved in food and beverage provision. Telephone interviews took place between April and September 2015 and lasted between twenty and ninety minutes. Interviews were recorded, with participant knowledge and permission. The recordings were transcribed, providing the documents used for the content analysis of the interviews. Two participants responded to the interview schedule by e-mail at their request to accommodate their schedules, and the electronic documents returned to the researcher served as the documents for the content analysis. Interview participants who chose to respond by e-mail were asked the same questions as those who participated by phone and offered an opportunity to follow-up with the researcher, creating similar circumstances and allowing for the inclusion of their responses.

Two interview schedules were developed: one with questions about the development process for those who were primarily involved with the development of the regulations, and another one designed for those who are primarily involved in the implementation of the regulations in schools. The difference between the two was the inclusion of questions specific to the position held by the participant. Otherwise, the interview schedules were identical. Broadly, the interview schedules identified the participant's role with the school nutrition regulations, inquired as to whether changes have been made as a result of the regulations, and what problems persist in the school food environments. Example questions include: "Have there been noticeable results since the regulations were implemented?" and "What changes, if any, have the regulations had on how food and beverages are sourced for schools?". While the participants were asked directly about changes to the internal school food environment as a result of the new or revised nutrition regulations, because the interviews were semi-structured, interview participants were able to discuss changes to the internal school food environment at any point during the interview.

Analytical Strategy

The regulatory documents and semi-structured interviews were analyzed with the assistance of NVivo 10 for Mac. Beginning with the analysis of the regulatory documents, using sentences or bullet points, depending on the way the document was written as the unit of data, each document was initially open coded. Excluded from the analysis were images, tables of contents, glossaries, bibliographies, and examples. Each unit of data was classified according to the idea contained within it; these ideas are nodes. If the unit of data contained more than one idea it was coded to all appropriate nodes. Following the initial coding process, the nodes were reviewed and refined for consistency and validity.

A similar process was used for the analysis of the transcripts of semi-structured interviews. Although the transcripts were not subject to the same initial coding process, over the course of the interviews, and during the analysis, it was clear that there were themes being brought up by the participants that were not addressed in the manifest content of the documents. Where an idea or theme emerged from the interview data and was present in more than one interview, a node was created, and it was coded as a node and included in the analysis. It is important to note that because of the semi-structured nature of these interviews, themes may be present in subnational jurisdictions but were not mentioned by the participant and thus are not present in the results.

Only the researcher coded, due to financial restrictions preventing the hiring of additional coders. Additional coders can help with ensuring the external validity of the codebook (Weber, 1990; Neuendorf, 2002), however, having only one coder helped ensure the codebook had internal

validity, as multiple coders could interpret the meanings of the codes differently (Neuendorf, 2002).

Results of the content analysis were initially analyzed using presence and absence of nodes, followed by an examination of frequency counts and percent coverage in document for each node. The frequency counts are limited in their utility for analysis due to differing lengths of and number of documents used by each subnational jurisdiction. As such, presence and absence of the nodes in the subnational jurisdictional documents were the principal findings used for analysis. These descriptive data were helpful for providing a broad perspective of what ideas were addressed in all of the documents in each subnational jurisdiction. The descriptive data were cross-tabulated according to subnational jurisdiction to provide an overview of school food regulation in each province and territory to facilitate comparison.

RESULTS

Justification of the Regulations

All eleven school nutrition regulations make at least one reference to Nutrition as a Component of Health as reason to intervene in the school food environment (**Table 1**). In this table and subsequent tables, a black square indicates the presence of the node in a regulatory document, and a white square indicates the absence of the node.

Table 1: Summary of Documentary Content Analysis: Justification Nodes

	AB	BC	MB	NB	NL	NS	ON	PE	QC	SK	YT
Childhood Overweight and Obesity											
Health Necessary for Learning											
Hunger											
Nutrition as Component of Health											

References coded to this node refer to the link between nutrition and health, or more specifically how school-aged children who eat nutritiously are typically healthier than their peers who do not. Implicit in this, although given explicitly in nine of the eleven subnational jurisdictional regulations is Health Necessary for Learning (**Table 1**). This includes references to

Revenue Generation	[Redacted]									
Social Determinants of Health	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Social Responsibility	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Socialization	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]
Water	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]	[Redacted]

There is noticeable variation in comprehensiveness of the regulations. Nutrition Criteria – maximum and minimum values for certain nutrients – are popular tools for deciding which foods are appropriate for sale in schools and which are not. Also notable is each subnational jurisdictional school nutrition regulation made at least one reference to Revenue Generation. Many of the references to Revenue Generation pertain to using food as fundraising tools, for example:

- “Fundraising activities should be consistent with healthy eating concepts taught the classroom” (Alberta Government 2012: 55)
- “Fundraising activities respect and support nutrition education and policies” (Manitoba 2014: 4).
- “School fundraising contributes valuable programs and opportunities for students” (Nova Scotia 2006: 5)

This node also includes references in the regulatory documents to the need of the spaces that sell foods and beverages to make costs (Quebec MELS 2007), and that revenue generated may be directed back to the school or school board/district/division (New Brunswick Department of Education 2008).

Interviews revealed that the variation in approach to regulation can be partially attributed to the differences in the spaces for food and beverage vending in schools across Canada. Quotations attributed to interview participants are indicated by their province or territory and position in the school food environment. In many schools at the elementary level, food and beverage sales are limited to one or two times a week, in which the school partners with a restaurant to bring in outside food and beverages (New Brunswick, provincial official; Ontario, school board official). Schools above the elementary level often have vending machines and/or tuck shops with a small selection of food and beverage items (British Columbia, school board official; Manitoba, dietician; Saskatchewan, dietitian). Other schools have full-service cafeterias with commercial cooking equipment able to provide a selection of hot and cold meal options (Alberta, school district official; New Brunswick, school district official; Ontario, school district official; Saskatchewan, cafeteria manager). What they all have in common is any food services available from the school are done so privately. Though school nutrition non-governmental organizations (NGOs) may operate within schools to provide breakfast and snack programs, these are not organized by the school and are run voluntarily by the organization itself. The variation among the internal school food environments are the reason some subnational jurisdictions chose to create guidelines instead of policies, as school boards/districts/divisions are then able to create a policy that suits their needs (Manitoba, provincial official).

There are topics pertaining to school nutrition regulation addressed in the interviews that do not appear in the documents (**Table 3**). Of note is the consistency with which participants mentioned Access to Healthful Food as an objective of the regulations. This refers to increasing

the healthful options in the internal school food environment, as well as encouraging students to make healthier food choices with food brought from home.

Table 3: Summary of Nodes Unique to Interviews (Not in Documents)

	AB	BC	MB	NB	NL	ON	SK	YT
Access to Healthful Foods								
Alternative Food Networks								
Barriers to Success								
Champions								
External School Food Environment (SFE)								
Food from Home								
Food Waste								
Impact*								
Learn by Example								
Lessons Learned								
Nutrition Criteria								
Problems to be Addressed in SFE								

The External School Food Environment was mentioned by participants in six of the eight subnational jurisdictions that participated in the interviews. The majority of responses coded to the External School Food Environment node name it as a barrier to successful implementation of the school nutrition regulations. There were participants who knew of at least one school that struggled to maintain their internal school food and beverage vending sites because they were unable to compete with the external school food environment (Alberta, school district official; New Brunswick, provincial official). There were other participants who noted that the External School Food Environment undermined the effectiveness of the initiatives taking place in school with the nutrition regulations (British Columbia, school district official; Newfoundland and Labrador, 2 provincial officials; Ontario, school board official; Ontario, school board official; Saskatchewan, school cafeteria manager).

There are other barriers to success identified by participants over the course of the interviews. Because of the numerous responses that were categorized to this response, Barriers to Success as a node required its own analysis to unpack what the barriers to successful regulation implementation were raised by participants. **Table 4** presents the summary of the barriers mentioned over the course of the interviews.

Table 4: The Barriers to Successful Implementation of School Nutrition Regulations according to Interview Participants

	AB	BC	MB	NB	NL	ON	SK	YT
Affordability								
Appeal of Compliant Foods								
Availability of Compliant Foods								
Competing Priorities								
Costs								
Culture of Industrial Diet								
Enforcement								
Food Service Providers								
Insufficient Resources								
Logistics of School Board ¹ Organization								
Misconceptions								
Role of Administration in Internal SFE								
Rural/Remote/North								
Size of Jurisdiction								

No one barrier is shared by all subnational jurisdictions according to the interview participants. Availability of Compliant Foods, Culture of the Industrial Diet, Competing Priorities, Enforcement, Insufficient Resources, Rural/Remote/North, and the External School Food Environment were among the more consistently mentioned barriers.

Barrier: Difficulty Obtaining Compliant Foods

One of the common barriers to improving the nutritional quality of food and beverages in a market-based school food environment identified by participants is Availability of Compliant Foods (**Table 4**). None of the regulatory documents that guide or direct nutritional requirements for food and beverages sold in school provide advice on how to procure compliant foods and beverages.

¹ Board is used in this table to refer to a School Board, as well as School Districts and School Divisions

Some food service providers have been unable or unwilling to comply with the regulations at a price the schools can afford. One provincial official in Alberta stated food processors and service companies are unwilling to make multiple formulas of their products to comply with the school nutrition policies of each school district (Alberta, provincial official). Food processors “have told the jurisdictions that they will not create foods to meet each jurisdiction’s criteria” (Alberta, provincial official). The variation in nutrition standards within the province raises a barrier to obtaining compliant food, but also adds an element of inequality for school boards that wish to have stricter nutrition regulations but have to settle for what companies are able to provide, especially when there are few other alternatives, as another participant from Alberta found. This has been problematic for the schools in this school board: “We had trouble finding some of the vendors who would provide healthy choices” (Alberta, school district official). In a smaller city “you can’t find food contractors everywhere...there would be a huge risk once you push hard with [nutrition requirements] then you could lose the service in schools” (Alberta, school district official). It can be difficult for school boards to find food producers or food service providers who are able to meet the nutrition requirements. The participant from British Columbia echoed this sentiment as well (British Columbia, school district official). In order to implement nutrition standards, school boards/districts/divisions require access to food companies that are able to supply compliant products for them.

With access to compliant processed and prepared foods being a challenge, fresh produce can be even more difficult to acquire. This is especially true for remote or rural communities. Several of the interview participants mentioned difficulties acquiring fresh produce in rural and remote communities that are not necessarily faced by school in urban areas. One participant mentioned that, in addition to the expense of having fresh produce delivered, she also experienced difficulties with suppliers delivering pallets of spoiled produce (British Columbia, school district official). This happened frequently enough that this school district stopped purchasing from this supplier and instead has supply arrangements with two local grocery stores that will inform the district when certain products are going on sale so they can incorporate them in the menu (British Columbia, school district official). This partnership is helpful for the school district, but it does not take away the difficulty they have faced acquiring fresh foods for their schools.

This is not the only area of Canada that experiences difficulty producing and acquiring fresh food, and food in general in some cases. The location of the district in British Columbia is not conducive to agriculture (British Columbia, school district official), however Newfoundland and Labrador have difficulties in this respect as well (Newfoundland and Labrador, 2 provincial officials). As a result, the majority of the province’s fresh produce is shipped from elsewhere. Inclement weather can cause shipments to be missed further leading to empty store shelves (Newfoundland and Labrador, 2 provincial officials). In addition to the problems this causes for households purchasing food, this situation also impacts internal school food procurement (Newfoundland and Labrador, 2 provincial officials). Since this is a province-wide issue, Food Security Network in the province is working with rural and remote communities on the island to work with communities to create strategies to improve access to food (Newfoundland and Labrador, 2 provincial officials). When food security is a province-wide issue, however, it does become challenging to supply sufficient nutritious food to the school food environment as well.

A participant from Ontario who organizes nutrition programs for a school board expressed difficulty getting fresh foods to remote schools. She mentioned that it is more difficult for the schools “up north” to access the same fruits and vegetables at the same price as the schools “in the city” because the price is the same, but the transportation costs are greater for the remote schools

(Ontario, NGO Coordinator). The organization was working with those schools to develop a distribution program that would reduce the transportation costs for these schools; however, they are still at a disadvantage compared to their counterparts in the urban areas of the district.

Concerns regarding transportation and distribution of food were noted in Manitoba as well. While the participant who informed this research of this issue in her province was not representing a specific school division, she was aware of the challenges of accessing food faced by the rural communities. Specifically, she noted schools in remote areas do not have the same affordable access to the same variety of products as the urban schools in the area, which makes it more challenging to promote healthy eating among young people in those areas (Manitoba, dietitian). This emphasizes the need to include affordability as well as geography when developing regulatory levers pertaining to food and nutrition. Schools in rural and remote locations have challenges procuring sufficient nutritious foods for their internal food environments.

The distribution and transportation problems in the food system have an impact on institutions as well as households, making it difficult for programs which aid food insecure households to do so. Populations that are already vulnerable to food insecurity due to transportation and distribution issues in the food system are unable to find reprieve during the school day when these same issues impact the breakfast/snack/lunch programs meant to alleviate them at the household level. The school nutrition regulations are meant to provide directives and tools to school administrators for improving the nutritional quality of the foods and beverages being sold in schools, however if schools are unable to supply them, or students are unable to purchase them, the regulations are not addressing the problems of nutrition, health, and learning that they recognize as important.

Barrier: Oversight and Enforcement

The shift from pseudo foods to more healthful foods has not been easy for all schools and some continue to struggle, even if procurement of healthful foods is not the problem because the preference for less nutritious fare persists. The interviews revealed individuals have had to negotiate dual roles as nutrition champions and policy enforcers. Those who have implemented nutrition regulations with more success have had support from staff, not only for oversight and monitoring of the implementation of regulations, but also by role modeling healthy behaviours for students. Even where school staff has been supportive of the nutrition regulations, there are students who still resist the changes and the staff do not want to become the food police to enforce them.

Food police or cafeteria police were terms that were mentioned by several interview participants as a way to describe the role of enforcer of nutrition requirements, especially when the requirements were being met with resistance (Alberta, school district official, New Brunswick, school district official, Newfoundland and Labrador, 2 provincial officials, Saskatchewan, cafeteria manager). In one instance, it was mentioned that the province did not want to be the cafeteria police but rather wanted to encourage school cafeterias and canteens to comply with the policy (New Brunswick, provincial official). Alberta does not require schools or school districts to have a nutrition policy, thus those that do, do so voluntarily. Having the option however, means that there is reluctance among those districts that might be interested because enforcing a policy can be an onerous task. In one Alberta district that did implement a nutrition policy, one of the challenges “with high school cafeterias though is that, it was pretty well left to the school principal to police the cafeteria and what was provided, which is a challenge because school principals have many more roles than that in the school” (Alberta, school district official). When the nutrition

policy is being met with resistance, enforcement is a challenge when other responsibilities are competing.

A participant with a background in nutrition was willing to take on the cause of improving the nutritional quality of the foods and beverages available for young people; however, confronting the violations of the nutrition guidelines, like serving hot dogs at a basketball tournament being held at school, was frustrating and she “doesn’t want to be the food police” (Newfoundland and Labrador, 2 provincial officials). In Saskatchewan, where school divisions are supposed to develop their own nutrition policies, one division wrote an intentionally vague policy, so they would not have to police it (Saskatchewan, dietitian). Enforcing policy is viewed as an onerous task when the internal support for it is not there, even if the benefits are clear. There is a fine line between food police and health champion, and a key part of changing the dialogue is to have all of the people who work in schools support the efforts being made to change the menus in schools and not rely on individuals to enforce the rules.

Those responsible for oversight and implementation of these regulations appreciate the enthusiasm and, in some cases, additional efforts taken by these school food champions because their enthusiasm for healthy eating supports students in adjusting to the changes. One respondent mentioned that champions are crucial to improving the eating habits of students. If “a volunteer or champion doesn’t pick up the cause within the school... it’s a dead issue. There’s definitely a need for somebody to champion it” (Ontario NGO coordinator). In Alberta, where having a school district level policy is optional, a champion is required to initiate the development of one (Alberta, provincial official). Without a champion, policies do not get developed or implemented and the potential benefits do not reach the students.

The difficulty of making the necessary changes to the foods and beverages sold in schools is increased when teachers and staff find opportunities to treat or reward students. Seven of the eleven subnational jurisdictions make some reference to discouraging using food as a reward or make suggestions for alternative rewards (**Table 2**). The interview participants suggest that food as reward, or “treats”, is still pervasive in schools (Alberta, school district official; Manitoba, provincial official; Newfoundland and Labrador, 2 provincial officials; Saskatchewan, dietitian; Saskatchewan, cafeteria manager). Because regulations only apply to foods and beverages sold on school property, they do not have to be applied to class rewards, birthdays, and other special events where the food is given away, though this is often encouraged. There is a perception that the occasional nature makes it okay to serve treat foods, however, “if you have five or six teachers giving it out once a week then a student is getting it every day” (Alberta, school district official). Another participant shared:

it comes down to the school cafeteria supervisor [laughs]. You know, in reality, many of these folks have been in the job for a long time and they cook and produce the way that they’ve always cooked and produced...they want to provide the kids with the...large sugar cookie ‘cause that’s the thing that would please the kid” (New Brunswick, school district official)

In spite of the nutrition regulations, there are still people who are encouraging students to eat or facilitating the consumption of foods with low nutritional value while at school. The idea that young people can have treats has persisted. This notion, in conjunction with the lack of oversight or enforcement mechanisms in the regulations, as well the reliance on individuals to champion the necessary changes is a barrier to successfully implementing the school nutrition regulations.

Barrier: The External School Food Environment

Participants indicated that the market-based nature of the school food environment and reliance on fundraising for school related materials make regulation challenging. The content analysis of the nutrition regulations revealed each of the school nutrition regulations included at least one reference to Revenue Generation, typically with reference to fundraising, ensuring that fundraising activities no longer include bake sales or chocolate sales (**Table 2**).

With the exception of Quebec (MELS 2007), the documents do not address the costs of food services. The experiences of interview participants with school food service providers with regards to the nutrition regulations have varied. Some school boards/districts/divisions have found food service providers willing and able to provide them with food and beverage options that fit the nutrition requirements outlined by the relevant regulatory document (New Brunswick, school district official; Ontario, school board official), while others have expressed difficulty receiving the same level of compliance at an affordable price (Alberta, provincial official; Alberta, school district official; Manitoba, dietitian; Ontario, school board official). When creating compliant, cost-effective menus is no longer possible, providers leave and schools lose their food and beverage services, or they are reluctant to implement nutrition requirements at all (Alberta, provincial official; Newfoundland and Labrador, 2 provincial officials; Ontario, NGO coordinator). In both cases, students lose the exposure to the healthful foods and beverages the subnational regulations are meant to provide access to. While the regulation of the internal school food environment can be beneficial, the outcomes of the regulations must reach the intended group to be effective.

Schools are not obligated to provide food and beverage vending facilities, thus any services must be cost-effective to remain. For some schools, the facilities are run entirely by the school or school board/district/division in that they hire their own food service staff, purchase food and supplies, and prepare on site. In these cases, the foods and beverages need only to meet costs and additional money can be put back into the school (New Brunswick, school district official; Ontario, school district official; Saskatchewan, cafeteria manager). For others, food services are contracted out to catering companies. If a for-profit provider is not profitable in the school food environment they are in, they stop service. This concern about revenue, in conjunction with prevalence of and preference for pseudo foods has resulted in exceptions to the rules being put into the policies (**Table 2**). This allows for nutrient-poor items to be sold occasionally, while treats for special occasions can still be given to students as long as there is no cost. To remain in schools, some catering companies have modified their menus to meet the needs of the schools and the nutrition regulations. Some school boards, like one in New Brunswick, have had the opportunity to change the menu to ask for locally produced products in addition to the nutrition criteria as well as to find ways to incorporate the school food environment in educational opportunities (New Brunswick, provincial official). Caterers oblige as long as they can both make their costs and their profits. It is worth noting however, that in at least one case, these larger food companies offer a form of profit sharing with the school so they may benefit from the sales as well (New Brunswick, school district official).

If, regardless of who is making the food, students decide they do not want to eat the healthier menu items, they do not have to. Many students beyond elementary school age are allowed to “vote with their feet” (British Columbia, school district official) and purchase foods and beverages from the external school food environment or bring food from home. These foods

and beverages are not covered by the nutrition regulations. Many participants found implementing the school nutrition regulations difficult due to competition from the external food environment:

The second school, they had, there was more difficulty with them because they were finding the need to provide unhealthy choices more because they were in close proximity to some of the convenience stores and so the kids would go to the convenience store and then come back and sit in the cafeteria with the unhealthy food. (Alberta, school district official).

The participant from British Columbia mentioned a golf course that is accessible to middle school students and a “mini mart” that is accessible to a high school in her district (British Columbia, school district official). A&W, McDonalds, and Ruckers are accessible to the students in a Saskatchewan high school (Saskatchewan, cafeteria manager). These sites give students access to the restaurants and convenience stores that are not regulated by the subnational jurisdictional regulations and continue to sell the pseudo foods that had previously been sold throughout the internal school food environment. As a consequence of decreased sales, some schools have experienced a loss in their revenue. As the internal food services are no longer generating the same amount of income, those that have agreements with food service providers are not receiving the same amount of revenue from those agreements, and in several cases, reducing the services or closing the facility (British Columbia, school district official, Ontario, school board official, Ontario, NGO coordinator, New Brunswick, provincial official). As the participants from Newfoundland and Labrador stated: “The free market’s going to kill us” (Newfoundland and Labrador, 2 provincial officials), meaning competition for food and beverage vendors located off school property is going to put the school-based enterprises out of business.

When internal school food facilities close because they are not economically viable, students lose the availability of healthful options while maintaining access to the less healthful options from the unregulated external school food environment. One participant shared that his school board was working with the local health unit to encourage local business to also support the nutrition policy (Ontario, school board official). Businesses are under no obligation to support such an initiative, nor are they likely to be regulated in such a way only because they are within close proximity to a school. The cafeteria manager who informed this research of the Safe School Zone in his school board is skeptical of the effectiveness of such an initiative because he “would assume that this man, who’s, in the business of being profitable would not want to lose those things in his store or on his menu that brings in the kids” (Ontario, school board official). While public health units may reach out to the external school food environment, there is no obligation for them to comply. While sales of lottery, tobacco, and alcohol are age regulated, it is unlikely that restrictions will be extended to pseudo foods and beverages. As a result, the attempts to provide healthier offerings in the internal school food environment are undermined, and the maintenance of such a space is jeopardized, leaving students with only the external, unregulated school food environment to purchase from.

DISCUSSION

To summarize, each of the subnational jurisdictions has at least one regulatory document that acknowledges the link between nutrition and health and most subnational jurisdictions further recognize that being healthy makes it easier for students to learn. Many interview participants discussed improving access to healthful foods and beverages as an objective of the regulatory

documents. The subnational jurisdictions take different approaches to incorporating pieces of nutrition guidance into their regulations to achieve these objectives.

The barriers to successful implementation of these regulations revealed by the interview participants are tied to the market-based nature of the internal school food environment, including obtaining healthful foods and encouraging consumption of the nutritious foods so students receive the health and developmental benefits of nutritious eating. The nutrition regulations of the Canadian provinces and Yukon Territory recognize the importance of nutrition in the health and wellbeing of children as they pertain to education. Each also recognizes foods and beverages are popular choices for fundraising events for the school, and also recognize that food and beverages sold at school must at least recover their costs if not generate revenue for the school. Nutrition promotion and revenue generation are not necessarily compatible but negotiating these two aspects of the school food environment is the reality for Canadian schools and can impede the efforts to improve the health of the school food environment.

There are several barriers in the current regulatory framework to successfully implementing the regulations. Access to sufficient compliant foods and beverages, especially in rural and remote areas, and having adequate support for enforcement of the regulations are among those barriers. One of the key barriers for the regulations addressing nutrition and health of students during the school day is the options for students to eat that are beyond the scope of the regulations, including food brought from home and the external school food environment, both of which provide ample opportunities for students to continue to consume foods and beverages that are not healthful and do not contribute to the desired outcomes of the regulatory documents. If the reason for regulating the school food environment is to address the link between nutrition and health, then it is necessary to ensure students are consuming healthful foods and beverages. These regulations do not accomplish this. In some cases, the nutritious foods brought on to school property to be sold to students go uneaten, and these operations close, unable to compete with the unregulated products brought from home or nearby restaurants and convenience stores, removing the nutritious foods off of school property entirely.

The national scope of this research has contributed to a larger discussion of school nutrition regulation in Canada, which has previously focused primarily on individual provinces (Mullaly, et al., 2010; Taylor, et al., 2011; Fung, et al., 2013; McIsaac, et al., 2015; Vine and Elliott, 2014) highlighting the similarities in approaches to regulation, as well as the shared barriers. This research also adds to the international discussion of school meals by creating an overview of Canada school food as a whole that is situated within a growing body of international research on this subject (Vernon, 2005; Harper, et. al., 2008) Levine, 2008; Morgan and Sonnino, 2008; Nelson et al., 2007; Poppendieck, 2010).

In the absence of a state-funded school meal, the ability to intervene in a way to accomplish the desired outcomes is hindered by the neoliberal regulatory framework of Canadian school food environments. Without a public plate (Morgan and Sonnino, 2008) schools have few foods and beverages to which to apply the regulations. Those products the regulations are applied to still need to compete for the student dollar with unregulated food from home and from the external school food environment (Winson, 2008; Winson et al., 2012; Vine and Elliott, 2014). Without an institutionalized, state-funded school meal, Canadian school children do not have increased access to nutritious foods, nor do they have the links between nutrition, health, and learning addressed.

This situation is a stark contrast to the United States, and the United Kingdom, which offer food during the school day, including low and no-cost options to those in need (Vernon, 2005;

Levine 2008; Nelson et al., 2007; Poppendieck, 2010). Without glorifying these cases, as they are not without their problems, Canada, and its subnational jurisdictions by not providing such a meal during mandatory education, appears to lag in this aspect of welfare provision.

There are limitations to this investigation. Where this research attempted to be national in scope, there is more work to be done in this area. First of all, interviews with those developing and implementing school nutrition regulations in the provinces of Nova Scotia, PEI, and Quebec would have enriched this investigation. Additionally, as this researched only looked at documents from English-speaking Canada and included interviews with Anglophone Canadians, the exclusion of Quebec, Canada's officially Francophone province, New Brunswick, Canada's officially bilingual province, and Francophone communities across Canada and their school food environments are absent, limiting the ability to generalize the results of this research into those communities.

CONCLUSION

Regulating the market-based school food environment is ineffective for achieving the nutrition and health outcomes desired by the provincial and territorial governments that developed them. Offering a Canada-wide perspective on the regulation of school food environments, this investigation found school food environments are incongruent with the approach to the provision of education, making these spaces difficult to regulate effectively. If the objective of the school nutrition regulations is to encourage students to have access to nutritious foods and beverages during the school day, and the market indicates the demand for these products is not there, then it is necessary to reduce the role of the market in school food provision. De-commodifying the school food environment would align this aspect of public school with the already de-commodified public school system and give the subnational jurisdictional governments a public plate to regulate to achieve the outcome of providing students access to nutritious foods during the school day.

Some schools struggle to find suppliers of compliant products, and competition with unregulated spaces to which students have access means that the regulations are difficult to enforce. At present these regulations have made the school food environment no longer part of the problem, but it is difficult with a market-based internal school food environment for them to be part of the solution. Future research should examine the state-funded program in the province of Alberta to understand its impacts on the students who participate in the program, and the school food environment itself, as well as look into Francophone school food environments in Canada.

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