

From School to Community: Understanding the Broad Reach and Impact of the Comprehensive
School Health Approach

by

Danielle Jacey Klassen

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University of Alberta

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ABSTRACT

Children's health is influenced significantly by the settings where they live learn and play. Due to the influence of the social determinants of health, children's health outcomes differ. Consequently, all children are not afforded equal opportunity to thrive physically, mentally, socially, spiritually, and emotionally. Schools are an increasingly desirable setting to address the health of children as the school environment is a setting that supports development and learning. Moreover, health and education are interrelated, and it has been shown that healthy students learn better. Comprehensive School Health (CSH) is an internationally recognized, evidence-based approach to promote health holistically in schools. Implementation of CSH addresses the school culture and environment and works in each school community based on the strengths and needs of the school and surrounding context. The whole school approach of CSH relies heavily on the interconnection between the school, home, and community environments, which are highly influential to one another. There is a need to better understand what changes in environments entail and resulting impacts of this interconnection.

To fully understand the school and community connection, this research was done in partnership with the CSH intervention, APPLE Schools (A Project Promoting healthy Living for Everyone in Schools). The purpose of this research was to understand if and how the CSH approach of APPLE Schools impacts school and community environments and if and how this multi-setting approach endures throughout adverse events. This qualitative research study addressed the following objectives: (1) to explore the influence of APPLE Schools on the school and community environments from the perspectives of school staff, (2) to understand if and how the intervention, APPLE Schools, has impacted the community environment, and (3) to

understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity.

Objective 1 used a case study approach guided by focused ethnography. Data generation included walking interviews and field notes. School staff (n=22) from five schools in northern Alberta, Canada were interviewed as the school environment was toured. Thematic analysis occurred concurrently to data generation. Four themes were identified: 1) APPLE schools look different, 2) APPLE Schools build champions, 3) APPLE Schools builds community partnerships, and 4) APPLE Schools honours community culture. The results showed the ways in which school-based health promotion influences environments both within and beyond school walls.

Objective 2 used an instrumental case study approach. This objective used focused ethnography as a guiding method and semi-structured interviews and document analysis as data generation strategies. Community partners (n=17) were recruited from one community in Alberta, Canada. Reflexive thematic analysis was used to analyze data. Findings were represented in a stepped approach: 1) Foundation: establishes a healthy school culture; 2) Action: tying the work of schools and communities together; and 3) Impact: changes in school practices ripple out to promote health in the community. From this research, it was shown CSH can have impacts on community practices in ways that support the health of children.

Objective 3 used a qualitative descriptive method and semi-structured interviews and focus groups as data generation strategies. School staff (n=22) in health champions roles during the COVID-19 pandemic were recruited from Alberta, British Columbia, Manitoba, and the Northwest Territories. Content analysis was used to identify three themes that represent how schools promoted healthy school communities during the pandemic: 1) wellness was already a

priority; 2) purposeful efforts to continue health promotion; and 3) recognition that (a culture of) wellness extends beyond the school. The foundations of CSH were evident throughout each theme.

This thesis demonstrated school staff and community partners supported CSH efforts and has shown the influential nature of schools taking a CSH approach upon their surrounding communities. APPLE Schools changed practices and spaces in the school environment, which eventually led to health promoting impacts seen in community organizations outside of the schools. This highlights the importance of partnerships between schools, families, and community members. Further, embedded cultures of health and wellness were shown to endure upheavals in the school environment through committed, collaborative efforts of the school community. This indicates CSH as a potential pathway to resiliency of health promotion in schools.

PREFACE

This doctoral thesis is original work by Danielle Klassen. Ethical approval for this research was granted through the University of Alberta Human Research Ethics Board (Pro00035108) under the project name “Implementation of Make the Healthy Choice the Easy Choice (APPLE Schools)”. The original ethics approval for this file was obtained in 2012 with subsequent annual renewals made and amendments to do this research work obtained on October 30, 2019; April 7, 2020; November 6, 2020; March 2, 2021; and July 11, 2022.

This thesis contains two peer-reviewed, published articles.

Chapter 3 of this thesis has been published as: “Klassen, D., Champion, C., Montemurro, G., Flynn, J., Raine, K., & Storey, K. (2022). It takes a community: exploring APPLE Schools’ impact within and beyond school walls in Canada. *Health promotion international*. <https://doi.org/10.1093/heapro/daac050>”. DK was responsible for the conception of the article, data generation and analysis as well as composed and revised the manuscript draft. CC assisted with the data generation and analysis and contributed to manuscript edits. GM assisted in the interpretation of analysis and critically reviewed the manuscript. JF, KM, and KS were the supervisory authors and were involved with concept formation and critical revision of the manuscript.

Chapter 4 of this thesis is published as: “Klassen, D., Montemurro, G., Flynn, J., Raine, K., & Storey, K. (2024). “It trickles into the community”: A case study of the transfer of health promoting practices from school to community in Canada. *SSM - Qualitative Research in Health*, 100427. <https://doi.org/10.1016/j.ssmqr.2024.100427>”. DK, JF, and KS conceptualized the study. DK conducted the data generation and analysis, drafted the manuscript, and completed

all necessary revisions from co-author's feedback. GM contributed to manuscript composition and critically revised the manuscript. JF, KM, and KS critically revised the manuscript. KS was the supervisory author.

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LIST OF ABBREVIATIONS

APPLE Schools: A Project Promoting healthy Living for Everyone in Schools

CSH: Comprehensive School Health

DPA: Daily Physical Activity

HBSC: Health Behaviour in School-aged Children

HPS: Health Promoting Schools

iKT: Integrated Knowledge Translation

JCSH: Joint Consortium for School Health

PHAC: Public Health Agency of Canada

SES: Socioeconomic status

SHF: School Health Facilitator

SIRCLE: Settings-based Intervention Research through Changes in Lifestyles & Environments

SPH: School of Public Health

SRQR: Standards for Reporting Qualitative Research

WCHRI: Women and Children's Health Research Institute

WSCC: Whole School, Whole Community, Whole Child

CHAPTER 1: INTRODUCTION

1.1 Overview

This chapter will provide an outline of the thesis. It will introduce the importance of school-based health promotion in Canada and follow with a specific focus on the Comprehensive School Health (CSH) approach. This includes the school, home, and community connection and specifically the need to consider the school-community connection. The rationale for this thesis research will be provided followed by a description of the research purpose and objectives in addition to the thesis attributions. Lastly, an overview of the thesis organization will be outlined.

1.2 School-based Health Promotion in Canada

Childhood is a critical stage to develop practices such as healthy eating, physical activity, positive mental health, and sleep. Yet many children do not have the same opportunities to achieve optimal health and wellbeing due to the influence of the social determinants of health. These determinants lead to health inequities; thus health promotion efforts must broadly take cross-sectoral action to effect policies and environments (World Health Organization, 1986). Physical and social environmental influences on the health of children mainly include the school, home, and community settings where they spend most of their time (Epstein, 1995; Public Health Agency of Canada, 2008). Schools are recognized as an ideal setting to promote health as health and education are closely connected and it is impactful to broadly address health behaviors within schools where children are easily reached (Jourdan et al., 2021). School-based health promotion has been shown to improve both academic achievement and health outcomes, as well as quality of life (Fung et al., 2012). Improving student health potentially has lifetime benefits as it directly influences determinants in early childhood. School-based health promotion efforts in Canada have increasingly used the evidenced-based CSH approach based on principles outlined

in the Ottawa Charter for Health Promotion (World Health Organization, 1986). Implementation of the CSH approach has four components that are all addressed to create a health promoting culture: social and physical environment, teaching and learning, policy, and partnerships and services (Joint Consortium for School Health, 2020). These components embed health promotion into the culture of the school while also promoting capacity-building through school autonomy and local decision-making (Storey et al., 2016). Thus, CSH interventions are adapted to the context of the school and broader community needs, relaying the interconnected environments of school, home, and community (Epstein, 2011).

The CSH approach is accumulating strong supportive evidence to show positive outcomes (Dabravolskaj et al., 2020; Faught, Gleddie, et al., 2017; Fung et al., 2012; Vander Ploeg et al., 2014), as well as stronger implementation practices (Neely et al., 2020; Storey et al., 2016). Previous research has identified the effectiveness of CSH, notably, improved healthy eating (increased fruit and vegetable intake and decreased energy intake), improved active living behaviors (increased physical activity levels) (Fung et al., 2012; Vander Ploeg et al., 2014), and reduced physical activity inequities (Vander Ploeg et al., 2014), all leading to better academic achievement (Faught, Gleddie, et al., 2017). As well, research has previously found the health behaviours promoted in school have been practiced outside the school environment (Bastian et al., 2015), and when students are empowered to make changes, these behaviors are even translated to the home environment (McKernan et al., 2019). The changes seen at school and in the home support the interconnected domains of the home and school of a CSH approach. However, there is minimal research that has captured community partner perspectives or even more generally, a lack of research at the community-level. Broadly, the community is understood to be a source of support for schools (Joint Consortium for School Health, 2016) and through

partnerships between the school and community organizations, schools are reported to receive beneficial support such as additional funds, expertise, and resources (Barnes et al., 2013; Coppola et al., 2019). However, literature on CSH implementation has not provided details on the school-community connection in practice.

This research explored the school-community connection in schools that take a CSH approach and the resulting community impact of a CSH approach. As well, the community involvement and broader contextual factors outside of the school, influences to the school system and stressors to CSH implementation were considered. In order to fully understand the school and community connection, an applied approach was most suitable. Thus, this research was done in partnership with the exemplar CSH intervention, APPLE Schools (A Project Promoting healthy Living for Everyone in Schools).

1.3 APPLE Schools

APPLE Schools is an evidence-based, innovative, and globally recognized health promotion intervention that is implemented in 100 elementary and high school communities in Alberta, Northwest Territories, Manitoba, and British Columbia (APPLE Schools, 2021b) and impacts the lives of over 33,000 Canadian students annually. APPLE Schools began in 2007 in 10 schools and has continually expanded to new schools in new regions across Canada. The APPLE Schools intervention uses the CSH approach to create a health promoting school culture by promoting healthy eating, physical activity, and mental wellbeing among students.

There are specific elements unique to APPLE Schools implementation model in school communities, such as a School Health Facilitator, funding, professional development, materials and resources, ongoing support from APPLE Schools staff, and continued research throughout implementation (APPLE Schools, 2021c). For the first three years of implementation, schools

receive funding to support a School Health Facilitator who receives training to implement the APPLE School model. This individual works with school community members (i.e., teachers, staff, students, and parents) to develop a CSH action plan specific to the existing strengths and needs of the school community. The Facilitator is supported directly by an APPLE Schools Mentor. Through this process, the School Health Facilitator identifies areas to incorporate healthy living strategies into the classroom, school, and community. This is done by setting actionable goals, establishing connections with community partners, and providing resources to students, teachers, staff, and parents to become empowered to make healthy choices (APPLE Schools, 2021b). After three years, the School Health Facilitator transitions into a volunteer role, the School Health Champion.

APPLE Schools has undergone process and outcome evaluation as the intervention has expanded over the last decade. Through process evaluation, APPLE Schools research has examined the roles of teachers, principals, and School Health Facilitators (Roberts et al., 2016; Storey et al., 2011; Storey et al., 2015). Additionally, research with APPLE Schools determined eight essential conditions for successful implementation of CSH (Neely et al., 2020; Storey et al., 2016), which APPLE Schools closely follows. In addition to process evaluation, outcome evaluation has also been undertaken and the intervention has demonstrated improved health outcomes for students (Fung et al., 2012; Ofosu et al., 2018).

The strength of the APPLE Schools intervention has been found beyond evaluation outcomes. APPLE Schools has received recognition of best practice for their implementation process noted by the Public Health Agency of Canada (PHAC) and the National Cancer Institute's Research-tested Intervention Program (National Cancer Institute: Research Tested Intervention Programs, 2015; Public Health Agency of Canada, 2011). As well, APPLE Schools

is globally recognized as a scalable intervention by the non-profit organization, HundrED (HundrED, 2019).

1.4 Rationale

The rationale to explore the school and community connection is largely justified by the absence of literature or research findings that solidify the evidence of the school-community connection. Addressing this research gap is paramount as there are decades of noted research limitations that call for research examining school and community interconnectedness (Deschesnes, 2003; Jourdan et al., 2016; Langford et al., 2017). Specifically, published literature has not examined the impact of CSH on environments within and beyond the school, community perspectives of community involvement in CSH, or the contextual factors that influence implementation unique to each community.

Changing the social and physical environment is a foundational component of the CSH model (Joint Consortium for School Health, 2016). To change school culture, the APPLE Schools intervention addresses both behaviours of students and the school environment (APPLE Schools, 2021b). Through ongoing research and evaluation of APPLE Schools, the impact on individual-level student behaviours is well understood (Bastian et al., 2015; Fung et al., 2012; Ofosu et al., 2018; Vander Ploeg et al., 2014); however, the impact on the health promoting environment has not been explored. Because schools assess their strengths and needs during implementation, understanding if and how the school environment changes as a result of implementing a CSH approach (i.e., APPLE Schools) is necessary to shift school culture.

Beyond the school's health promoting environment, the ways interventions work uniquely with the local context is significant to the interconnected environments of the school, home, and community. Research in the field of CSH implementation has evidenced conditions

for successful CSH implementation and outline eight essential conditions and four contextual conditions notably including school-specific autonomy, community support (both core conditions), and prior community connectivity (a contextual condition) (Neely et al., 2020; Storey et al., 2016). Partnerships between the school and parents, families, and community members are key to the CSH approach (Joint Consortium for School Health, 2016). There is evidence to suggest the health promoting culture extends beyond the school to impact to the home environment as children act as changemakers and translate health behaviors into the home to create a healthy home culture (McKernan et al., 2019). Findings of community impact, when combined with the research that supports the impacts of CSH to the home environment (McKernan et al., 2019), offers a more complete understanding of the strong connections between school, home, and community as part of the CSH approach.

There is a benefit to examining implementation of CSH within respective school contexts as schools undergo significant stressors. Particularly, the COVID-19 pandemic was an opportunity to understand health promotion efforts as they were embedded in schools through relationships to the home and broader community involvement. Whole school approaches such as CSH, which addresses policy, environments, teaching and learning, are cited as a pathway of health and wellness support in schools post-pandemic (Pattison et al., 2021). Furthermore, integration of health and education in school settings and partnerships with the health sector and schools are needed more than previously thought (Testa, 2021). Understanding the adaptations and navigation of CSH implementation throughout the pandemic may offer insight into sustainability of CSH. As schools and communities can influence each other, both a school-level perspective and a community-level perspective were considered.

1.5 Research Purpose and Objectives

The purpose of this research was to understand how the CSH approach of APPLE Schools impacts school and community environments and how this multi-setting approach endures throughout adverse events. This was captured through the perspectives of school staff and community partners. The research objectives addressed in this thesis were:

1. To explore the influence of APPLE Schools on the school and community environments from the perspectives of school staff.
2. To understand if and how the intervention, APPLE Schools, has impacted the community environment.
3. To understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity.

1.6 Thesis Attributions

This thesis is a component of my Doctor of Philosophy in Health Promotion and Socio-Behavioural Studies from the University of Alberta School of Public Health (SPH). This research was completed with the support of my supervisor, Dr. Kate Storey, and her research lab SIRCLE (Settings-based Intervention Research through Changes in Lifestyles & Environments). The SIRCLE Lab has worked closely with APPLE Schools for more than a decade and this relationship fostered the partnerships needed to complete this research in a mutually beneficial way. The APPLE Schools implementation team provided much insight throughout to ensure the research objectives were meaningful to school communities and applicable to practice.

Objective 1 (Chapter 3) of this thesis research used an instrumental case study approach and focused ethnography as a guiding method to understand what health promoting changes have already occurred within schools and how these changes have been supported by individuals

outside of the school community. In order to understand changes to the health promoting environments within the local context, the data generating strategy of walking interviews with teachers, staff, and administration was most suitable to capture the contextual details of the environment in a dynamic way. This research aligned with the focus of ongoing APPLE Schools evaluation and the implementation of APPLE Schools in rural and remote settings as a result of PHAC funding. This work has been published as: “Klassen, D., Champion, C., Montemurro, G., Flynn, J., Raine, K., & Storey, K. (2022). It takes a community: exploring APPLE Schools’ impact within and beyond school walls in Canada. *Health Promotion International*. <https://doi.org/10.1093/heapro/daac050>”

Objective 2 (Chapter 4) was informed by the research findings of Objective 1. As there was a broad understanding where changes potentially occurred, Objective 1 provided insight for the locations and participants to be included in Objective 2. Close work with APPLE Schools identified a case study in Alberta, Canada. This location was suited for an instrumental case study approach as the city readily adopted the APPLE Schools intervention. As a result of community-wide buy-in, all 21 elementary schools in the city were APPLE schools with the potential for broad community impact to be studied. Focused ethnography guided data generation and interviews with community partners. Additionally document analysis was used which provided broader context of the community and how CSH has impacted the case study location. This work has been published as “Klassen, D., Montemurro, G., Flynn, J., Raine, K., & Storey, K. (2024). “It trickles into the community”: A case study of the transfer of health promoting practices from school to community in Canada. *SSM - Qualitative Research in Health*, 100427. <https://doi.org/10.1016/j.ssmqr.2024.100427>”

Objective 3 (Chapter 5) arose naturally as data generation was occurring in Objective 2. While conducting school-based research during the COVID-19 pandemic, it was apparent the implementation of APPLE Schools and more generally CSH, was influenced by this global scale event. This objective examines the broader context of implementation and how connections outside the school help schools weather adversity. Qualitative description was the guiding method to detail the experience of health promotion in schools during the COVID pandemic. This work is currently be prepared for publication and will be submitted to the Journal of School Health.

This research was completed by myself as original work with guidance from my supervisor (Dr. Kate Storey) and my committee members (Dr. Kim Raine and Jenn Flynn). In collaboration with my committee, I conceptualized the research objectives and methods that would guide the work, secured ethics approval, and completed all data generation, analysis, and writing.

1.7 Thesis Organization

This paper-based thesis is organized into six chapters. Chapter two will provide a comprehensive literature review of the topics relevant to the thesis. Chapter three (detailing the first research objective), chapter four (detailing the second research objective) and chapter five (detailing the third research objective) include methods, data generation, analysis, rigour, results, implications, and strengths and limitations. Chapters three and four have been published as separate original research manuscripts to the journals, Health Promotion International and SSM- Qualitative Research in Health, respectively. Chapter five will be submitted as separate academic manuscript for publication in the Journal of School Health. Chapter six will provide a conclusion

of the research and implications of the research findings. References and appendices are located at the end of the thesis.

CHAPTER 2: LITERATURE REVIEW

2.1 Healthy Living Practices in Canadian Children and Youth

Children and youth have healthy development when they are physically active, eat healthy, maintain adequate sleep, play, socialize, and live in a safe environment (Health Canada, 2017). As such, children and youth thrive when their physical, mental, emotional, and spiritual wellbeing are in balance (Government of Canada, 2010). These aspects of health and wellbeing are interconnected (Faulkner et al., 2020; Michaelson et al., 2019) and support the wholistic health and wellbeing of children. Furthermore, to promote health and wellbeing in any of the settings where children spend their developmental years helps children reach their “full potential to thrive” as they grow throughout their lives. Thriving children and youth is a national goal in Canada (Children First Canada, November 20, 2018) and globally (United Nations, 1989) and ensures benefits for future generations to come. Childhood is a critical stage to develop health practices, however, not all children are afforded opportunities and conditions for healthy development. To promote health and wellbeing of children and youth in Canada, government, non-profit, and health promotion organization efforts focus on getting children and youth active, eating healthy, and supporting mental health in the settings where children live, learn, and play. These multisectoral efforts have developed specific recommendations for growing children and will be explored in more detail.

2.1.1 Nutrition, physical activity, sleep, and mental health recommendations

To provide guidance for the development of healthy children, there are numerous health behaviour recommendations that should be met throughout children’s early life development. Canadian national efforts address the health behaviours of children and youth through guidelines such as Health Canada’s ‘Canada’s Food Guide’ (Health Canada, 2020) and Canadian Society

for Exercise Physiology's 'Canadian 24-Hour Movement Guidelines' which include physical activity, sleep and sedentary behaviour recommendations (Canadian Society for Exercise Physiology, 2020). Canada's Food Guide recommends consuming whole fruit, vegetables, and grains; limiting processed foods; and drinking water with every meal for children and adults alike (Health Canada, 2020). The Canadian 24-Hour Movement Guidelines determine that children and youth ages five to seventeen are recommended to limit recreational screen time to no more than two hours a day and incorporate 60 minutes per day of moderate to vigorous physical activity daily (Tremblay et al., 2016). As well, children and youth between ages five and thirteen are recommended nine to eleven hours of sleep (Tremblay et al., 2016). These recommendations extend to home, school, community environments and both indoor and outdoor settings. Meeting sleep duration and physical activity recommendations has positive effects for the psychosocial health of children including lower self-reported stress and high ratings of mental health (Bang et al., 2020). Moreover, maintaining adequate sleep has a close relationship to children and youth flourishing (Faulkner et al., 2020). The national non-profit organization, ParticipACTION, endorses physical activity involving a combination of light and high levels of physical activity in various contexts of play, sports, active transportation and recreation, uninterrupted sleep at home, and low levels of sedentary behaviours throughout the day. These practices support not only physical health but consequently, appropriate levels of physical activity support aspects of mental and emotional health, leading to better social emotional wellbeing such as positive mood and emotional regulation (ParticipACTION, 2024). Several mental health recommendations are tied conjointly with those for physical activity such as regular exercise and getting sufficient hours of sleep per night (Tortella et al., 2021). Other recommendations to promote mental health come from numerous national and provincial-level

health authorities across Canada (Alberta Education, 2017; Canadian Mental Health Association, 2023; Public Health Agency of Canada, 2020). Mental health recommendations generally extend from childhood to adulthood and are key to establish early in life. These include fostering positive thoughts, healthy relationships, gratitude, self-esteem, and problem-solving skills (Alberta Education, 2017; School Mental Health Ontario, 2024). Mental health of children can be positively influenced through safe and supportive social interactions with their peers and family, as well as within the school environment and the community where children live (Public Health Agency of Canada, 2020). In turn, supportive environments that cultivate children and youth's socio-emotional development lead to feelings of belonging, safety, self-esteem and a sense of meaning (Public Health Agency of Canada, 2020), all of which are protective factors that buffer against negative events and promote resiliency (Alberta Education, 2017). The Public Health Agency of Canada references good mental health “allows you to feel, think and act in ways that help you enjoy life and cope with its challenges” (Public Health Agency of Canada, 2020). In the period following the COVID-19 pandemic, it is increasingly important to cultivate resiliency, integrate mental health supports into children's environments, and increase access to mental health services for children (Masten, 2021). The following section will focus on the current statistics reporting the health practices of children and youth in Canada and show the current health status of children and youth.

2.1.2 Health status of Canadian children

With considerations of how children thrive in mind, it is important to first consider a multitude of health practices reported among children and youth that demonstrate their current health status. There is mixed evidence on healthy eating. The Health Behaviour in School-aged Children (HBSC) 2018 survey reporting an increase in both fruits and vegetables and decrease of

soft drinks and sweets (Craig et al., 2020). However, other sources report between 2004-2015, the daily consumption of whole fruits and vegetables decreased by 0.8 servings for both children and adults with the majority of the population not meeting the recommended levels (Polsky & Garriguet, 2020). Presently, less than 40% of children and youth meet the physical activity recommendations set out by the 24-Hour Movement Guidelines (ParticiP ACTION, 2024; Roberts et al., 2017), and 30% of children are not getting the amount of recommended sleep for their age (Roberts et al., 2017). Physical activity levels are increasing post-COVID-19 pandemic (Caldwell et al., 2022), which is a positive trend. Evidence compiled from several national-level, longitudinal surveys across age groups show there are increasing rates of sedentary behaviours; particularly, there is an increasing amount of leisure screen time (Prince et al., 2020).

Immediately following the COVID-19 pandemic, a massive increase was reported among children and youth's levels of screen time and research showed only 18% used screens two hours or less per day, which means 82% of children and youth were spending more than two hours a day on screens (ParticipACTION, 2022). In Canada's most recent report card on physical activity, delivered by ParticipACTION in 2024, more encouraging numbers for rates of reported screen time are noted. Among children ages 5-11 years, 27% reported under two hours of screen time and youth ages 12-17 years, 31% also reported under two hours (ParticiP ACTION, 2024). However, an even lower percentage of children and youth (17.5%) are able to meet all three recommendations for physical activity, screen time, and sleep and the percentage of children meeting the recommendations declines into adolescence (Roberts et al., 2017). Deeply connected to physical activity levels is children's mental health. Those who are active and meet the recommended physical activity levels show more positive mental and emotional health practices as well as cognitive benefits (Andermo et al., 2020; Tortella et al., 2021).

Consequently from these practices (i.e., physical inactivity, inadequate sleep, unhealthy eating), some conditions such as obesity or diabetes may develop as early as childhood and continue throughout adulthood. In 2020, 23.2% of Canadian youth ages 12-17 were living with overweight or obesity (Statistics Canada, 2020). This number has remained high since an obesity epidemic was declared over a decade ago with associated health conditions including high cholesterol, high blood pressure, type 2 diabetes, sleep apnea, muscle and joint problems, and an increased likelihood of these health problems continuing into adulthood and developing into a chronic disease (*Curbing Childhood Obesity: A Federal, Provincial and Territorial Framework for Action to Promote Healthy Weights*, 2012). Current rates of diabetes reported among children and youth are 1 in 333, and these numbers are on the rise (Centre for Surveillance and Applied Research, 2021). The Canadian Health Survey (2019) reported the presence of other health concerns for children and youth between ages 5-17 as: anxiety disorders (5%), mood disorders (2.1%), learning disabilities (8.4%), and difficulties getting to sleep (27%) (Statistics Canada, 2019).

Since the 2020 COVID-19 pandemic, mental health concerns have grown among children and youth. The social isolation felt by students during lockdowns resulted in overall feelings of increased stress (Cost et al., 2022). Additionally, concerns noted among elementary school-aged children were feeling a lack of thriving, increased boredom, and loneliness (Maunula et al., 2021). For those with an existing mental health diagnosis, there was also a greater likelihood of experiencing increased anxiety, irritability, depression or a deterioration of attention (Cost et al., 2022). The COVID-19 pandemic is one recent worldwide disaster that has occurred but among others are growing numbers of natural disasters and extreme weather-related events. Concerns of

climate change (e.g., sadness, anger, worry, hopelessness) are presently intensifying negative impact on children's mental health (Aylward et al., 2024).

These statistics show children are far from meeting health recommendations and highlight the need for action and more specifically, the need for health promotion efforts targeting healthy living practices such as eating, physical activity, sleep, hygiene, injury prevention, tobacco consumption, and mental wellness. Importantly, these healthy living practices can be established in early childhood (Government of Canada, 2010). Early intervention is critically important to give children the proper building blocks for healthy development, as well as prevent detrimental chronic conditions later in life. However, before an intervention takes place, it is fundamental to consider why the above health inequalities exist and what role health inequities have in the health of children.

2.1.3 Social determinants of health

Positively shaping the health of children is complex and there are a vast number of attributable factors that impact health practices, systems, and settings (Government of Canada, 2023; World Health Organization, 1986). Referred to as the social determinants of health, factors such as race, culture, biology, gender, income, the physical environment, access to health services, and education lead to health inequities experienced by children and youth (Government of Canada, 2023). Children may lack access to nutritious foods, sport and recreation opportunities, and safe housing based on the physical environment and socioeconomic conditions of their lives (Raphael, 2016). For example, children of low-income families are not afforded the same opportunities of healthy living and face greater disparities of physical health status (Spencer et al., 2013). The relationship between low socioeconomic status (SES) and greater health inequities, as well as gender differences and health inequities are well-documented among

Canadian adolescents in study conducted by Hammami et al. (2022). SES inequalities were present in body weight, physical and psychological health, self-reported health, and life satisfaction. Gender inequalities were reported in daily physical activity, psychological health, and life satisfaction. These documented trends have been tracked over sixteen years with inequities remaining the same or worsening, which calls for interventions that address social conditions and physical environments (Hammami et al., 2022). In addition, a systematic review of the social determinants experienced by Indigenous peoples reported populations having higher unemployment rates, lower education levels, lower income, poor housing, all closely tied to greater inequities experienced such as higher rates of chronic disease (Fariba et al., 2015). It is recognized to improve the health of a population, health education alone cannot be used (Raphael, 2016). In fact, because education does not change environments and daily living conditions to promote health, health education can be stigmatizing or out of reach because healthy practices may be unattainable due to societal constraints (Raphael, 2016).

A globally recognized milestone in the field of health promotion, the 1986 Ottawa Charter for Health Promotion, highlighted these determinants of health and courses of action to be taken (World Health Organization, 1986). The Ottawa Charter outlined that health promotion efforts should enable settings to target health inequities and health promotion efforts should be aligned across sectors. The courses of action outlined in the Charter are building healthy public policy, creating supportive environments, strengthening community actions, development of personal skills, and reorientation of health services (World Health Organization, 1986). As such, the Ottawa Charter has established healthy options need to be made available and accessible through environmental changes and policy changes at many different levels. Consequently, the values of the Ottawa Charter have been carried forward to the present day. Considering the

nature of wholistic health, recommendations to help children thrive cannot be achieved in isolation of each other, nor can behaviours be influenced by one setting. The socio-ecological model of health promotion explains many interacting levels of influence including individual, interpersonal, family, school and community, and organizational levels (McLeroy et al., 1988). This model is particularly relevant as it considers the social environment and influence of settings on health promotion interventions. It is through changing the conditions and environments that children spend their time that existing health inequities can be addressed and reduced (Newman et al., 2015). The many settings where health practices of children can be promoted will be explored further.

2.2 Settings-based Influences on Health Practices (Home/Community/School)

To promote health of children and youth, there are particular settings where children spend most of their time in their early developmental years and are easily reached, namely the home and school (Epstein, 1995; Public Health Agency of Canada, 2008). These areas are the contexts of development for children where they live, learn, and play. As such, the school, home, and community settings determine much of the environment and interactions experienced by children while they grow up, thus are all settings where health of children can be promoted and will be further explored.

2.2.1 The home

The physical and social environment of the home shapes the health of children as they grow up through availability of resources, and behaviours modelled by others (i.e., the parent-child relationship) (Public Health Agency of Canada, 2008). A healthy home environment ideally has access to healthy food and a healthy diet, a quiet, safe place to sleep, space to play and be physically active, and supportive relationships (Haddad et al., 2018). Healthy eating

requires access to healthy food. First and foremost, children must be able to secure food. Among low-income households, food insecurity is widely reported, which is a major barrier to accessing fruits and vegetables due to the cost of these foods (Drisdelle et al., 2020). One in five children and youth between the ages of 11-15 years in Canada report that sometimes there is not enough food at home (Craig et al., 2020), meaning they go to bed hungry. Disproportionality, Indigenous and immigrant families have lower income levels which has impacts on both diet and mental health (Fariba et al., 2015; Salami et al., 2017). Moreover, Indigenous families report experiencing inadequate housing (e.g., requiring major repairs) as well as crowded living spaces (Fariba et al., 2015), thus safety is often a concern for children living at home.

In the home, mealtimes can be an opportunity for family gathering where food is prepared by parents and caregivers. It can also be cultural experience and a social context for children to eat with parents, siblings, or other family members where children are influenced by how their families perceive what food is healthy or unhealthy (Genuis et al., 2015). Children's health behaviours are most often influenced by parents' behaviour and there is a strong association noted between parent and child health practices. Parental knowledge and encouragement of physical activity is associated with their children's physical activity (Haddad et al., 2018). In Carson et al.'s (2020) study, the more time parents spend doing sedentary activities, moderate to vigorous physical activity or screen time, their children were more likely to show the same levels. Likewise, in Haddad et al.'s study, it was found that parents' intake of fruits and vegetables had a strong association to their children's diet and fruit and vegetable consumption (Haddad et al., 2018). In some cases, parental encouragement of healthy eating results in better diet quality for children and less rates of overweight or obesity (Faught et al., 2016), though not all. In another study that examined home and school environments, to

strengthen home and school collaboration, information books were sent home and resulted in increased parents' knowledge and increased the children's fruit and vegetable intake, yet did not increase the availability of fruits and vegetables in the home environment (Blom-Hoffman et al., 2008). This may be attributable to other determinants of health such as income inequality and speaks to the ineffectiveness of simply sharing information and educating families. Parents influence children's health behaviours through their knowledge and role modeling of their own behaviours and decisions they make for their children, but it should be considered that the home environment is also influenced by the broader community in which it is located.

2.2.2 The community

Children are shaped by their family and household, which is located within a greater sphere of influence of the broader community (Epstein, 1995). Community environments exert influence on children based on the physical environments of neighbourhoods and more broadly, the geographic location of communities. Each community has a unique set of considerations and factors, such as surrounding SES and infrastructure, that have vast influences on opportunities for physical activity (Manyanga et al., 2022; McKenzie et al., 2013), as well as the availability of healthy food (McPhail et al., 2013), and social connections with others (Wood et al., 2013).

Particularly in Canada, there are vast differences in population demographics from large urban centres to many rural and remote locations. Both urban and rural environments have factors that influence children's health and create facilitators and barriers to physical activity. In urban centres, the natural and built environment of neighbourhoods determines walkability, access to green space, and perceptions of safety (Carson et al., 2010; Frank et al., 2022). In one study by (Frank et al., 2022) it was found that among urban neighbourhoods with available parks and walking spaces, there was also higher levels of physical activity which offered a mediating

effect between levels of physical activity and rates of obesity and diabetes. Specifically, those in the most walkable neighborhoods engaged in more physically activity and had lower risk of obesity and diabetes (Frank et al., 2022). This is similar to earlier research findings from Carson et al., (2010), who showed well-perceived sidewalks in neighbourhoods translated to more physical activity and active transportation to school and less screen time. A study by McKenzie et al., (2013) found an increase in median household income corresponded to a greater number of recreation facilities (e.g., gymnasiums, basketball courts, fields, playgrounds, walking paths) and amenities (e.g., benches, trash cans, bathrooms) in good condition. However, these facilities also came at a cost. Consequently, children living in low-income neighbourhoods may rely more so on the outdoors due to lack of facilities or the cost of accessing them (McKenzie et al., 2013). Similarly, small, rural schools have greater challenges including less access to resources (Anderson & White, 2011). The rural context presents challenges to increase amounts of physical activity in children, in part due to a lack of access to transportation or physically close opportunities (Walia & Leipert, 2012). The commute from rural homes to nearby communities makes active transportation simply not feasible for children when the distances between home and school are far. Though not all evidence suggests rural environments are not conducive to physical activity. In one cross-sectional study of urban and rural environments, children did meet the recommended amount of physical activity per day (less than two hours per day) and interestingly children in rural areas showed less screen usage than children in urban areas (Manyanga et al., 2022).

The neighbourhood nearby where schools and homes are located can greatly impact food security and what healthy food opportunities are available to children and their families (Engler-Stringer et al., 2014). Urban areas may present more opportunities where unhealthy food options

are more easily accessed due to convenience, particularly in low-income neighbourhoods fewer healthy food options and more unhealthy options are accessible than is seen in high income neighbourhoods (Engler-Stringer et al., 2014). Conversely, in remote regions of Canada, where children and families experience some of the highest rates of food insecurity, the geographic location is a challenge to transport and store an abundance of healthy foods (Leblanc-Laurendeau, 2020).

Additionally, unique community contexts influence cultural and traditional food practices. In a photovoice study with children living in a rural First Nation community, the results shared by children spoke to the influence of traditional foods on their diet and more broadly, how the community relied on hunting and gathering to secure food (Genuis et al., 2015). Communities also promote feelings of social connection among the residents, which extends from gatherings to positive health impacts. A sense of belonging and feelings of social support among community members has positive impacts on mental health, even among new migrants to a community (Salami et al., 2017). With considerations of these conditions that both influence and create health inequities, an environment that has the power to create equitable opportunities, such as the natural learning environment of the school, should be considered.

2.2.3 The school

Children spend a considerable amount of time at school, which presents many opportunities to promote health practices throughout the day in an environment that supports learning (Bonell et al., 2014). The school environment is also a space that can provide equitable access to multiple meals and snacks, a space to feel welcomed and a sense of belonging, safety to play and socialize, and equal access to resources and daily schedules that promote health and wellbeing for all students. Because schools take place over a seven-hour period in a day, it is

common for schools to typically serve and sell food for breakfast, snacks, and/or lunch. Food that is accessed at school by children comes down to several factors including, availability, affordability, and student preferences (Spencer et al., 2019). In one study by Ahmadi et al. (2015), over nine hundred students were surveyed to understand the association of SES and dietary outcomes at school. It was found that students of low SES, whose parents had lower educational attainment, were more likely to consume sugar sweetened beverages and vegetables daily at school. Ahmadi et al. (2015) thus found the parental influence was more significant than peer influence, though the peer influence on eating practices in the school is still noted in research. Spencer et al. (2019) explored the perceptions of youth in the school food environment and determined the social nature of eating that youth experience at school by eating with their peers and enjoying food together, which can reinforce a particular culture and relationship to food especially when using food as a reward or to celebrate special occasions and holidays. During the time spent in school, children are influenced both directly and indirectly through peers, teachers, what is being taught in the classroom, and the physical school environment (Hamilton et al., 2021). A positive school climate focusing on mental and emotional wellness can be fostered through feelings of belonging and is influential to student attendance and academic performance (Daily et al., 2020). Furthermore, the time spent in school surrounded by peers and teachers can determine opportunities to both learn and practice health behaviours. In the Canadian province of Alberta, curriculum is taught in the classroom that addresses health, life skills, and physical education throughout grade levels 1 to 9 (Alberta Education, 2021). These learnings are further supported in Alberta by a daily physical activity (DPA) policy in place to ensure students receive 30 minutes of daily physical activity (Alberta Education, 2021). Outside of structured physical education time, children have time to play and be active during

recess and lunch which helps children meet the Canadian Society for Exercise Physiology 24-Hour Movement Guidelines (Tremblay et al., 2016). Students at school are also highly influenced by their friends and are more likely to engage in similar levels of physical activity as close friends before, during, and after school (Stearns et al., 2019).

2.2.3.1 The need to address health behaviours of children and youth at school

To promote health in children in an equitable way, the school environment is one setting to intervene. Schools can be a place to promote and support opportunities for healthy eating and active living behaviours as it targets a setting where changes can be impactful due to the nature of the learning environment (Jourdan et al., 2021) and is where children spend a significant amount of their day. Health and education outcomes are interrelated and by promoting health in schools, education outcomes improve (Degoy & Olmos, 2020), therefore if given priority in a teaching environment, they both flourish (Bonell et al., 2014). School-based interventions using a multifaceted approach address the many intersecting factors that influence health practices in the school. A systematic review of school-based physical activity interventions highlighted multi-component and comprehensive interventions addressing nutrition, physical activity and general healthy living habits together in a longitudinal way establish significant changes to physical activity levels of children, and lifelong habits (Yuksel et al., 2020). Schools can promote health in an equitable way as it is a place that reaches all children and youth where health inequities can be targeted through interventions that address the social determinants of health (Newman et al., 2015). Of note, those interventions addressing multiple components of health (i.e., nutrition and physical activity) are most cost-effective and even further, interventions that took a holistic approach intervening in schools through teaching, policy, and partnerships, and environments demonstrate the highest return on investment (Ekwaru et al., 2021). Evidence

shows that school interventions are a cost-effective way to prevent obesity and chronic disease (Ekwaru et al., 2017). A life-course analysis of one multi-component, school-based health promotion intervention that addressed diet, physical activity, and mental wellness showed savings of \$150 to \$330 million per year in Canada based on a reduction of expected obesity rates by 2-6% through scaled up interventions across Canada (Tran et al., 2014). One such approach to promote wholistic health in schools is Comprehensive School Health (CSH) which will be explored in more detail.

2.3 Comprehensive School Health

Health and education are interconnected, and the school setting is optimal to promote health behaviours as there is a broad reach within a learning environment targeting children during a critical development stage (Fung et al., 2012; World Health Organization, 1986). Canadian school-based health promotion efforts use the CSH framework (Arnold et al., 2012; Joint Consortium for School Health, 2021). CSH is an international approach to school-based health promotion, which began in Canada in the 1990's (Joint Consortium for School Health, 2021). CSH is developed from principles of the Ottawa Charter for Health Promotion and is part of an effort of the World Health Organization's Expert Committee on Comprehensive School Health Education and Promotion (World Health Organization, 1997; World Health Organization, 1986). As CSH is an international approach that has been used in many countries, the terms Coordinated School Health, Health Promoting Schools (HPS), and Whole School, Whole Community, Whole Child (WSCC) have been synonymously used with CSH and will be referred to as CSH throughout this thesis.

2.3.1 A holistic approach to children's health and wellness

CSH builds on a socio-ecological model, and is a cohesive effort involving environments and greater spheres of influence that are beyond an individual's control rather than placing emphasis on individual behaviour change (Nutbeam, 1992). The socio-ecological approach influences health practices by changing the realms beyond an individual level which complements the settings-based influences of the home, community, and school as described earlier. In the CSH approach, changes are to be addressed using individual, interpersonal, community, and organizational levels of influence (Nutbeam, 1992). CSH not only addresses interacting behaviours and structural influences but also the interacting environments that influence health (Joint Consortium for School Health, 2016). To create equitable opportunities for students to thrive as healthy children and youth, a whole-school approach is used through in the CSH approach to change the school culture and the school environment (Joint Consortium for School Health, 2016).

In Canada, the Pan-Canadian Joint Consortium for School Health (JCSH) leads CSH efforts through a partnership among provincial, territorial, and federal governments to bring together health and education sectors and promote healthy Canadian children (Joint Consortium for School Health, 2021). JCSH outlines how CSH is addressed in schools through four components: 1) social and physical environments; 2) teaching and learning; 3) policy; and 4) partnerships and services (Joint Consortium for School Health, 2021). The CSH approach aims to increase health practices and accessible healthy choices in the school by creating a supportive structure to promote health and wellness priorities broadly supported by curriculum and policy changes and led through cohesive actions taken by the school community (St Leger, 1999). The evidence for CSH interventions both on student impact and the school impact will be shown in

detail in the following two sub-sections followed by a breakdown of the evidence for the components of CSH.

2.3.2 Evidence of CSH interventions

The CSH approach has been studied amongst the promotion of health behaviours such as nutrition, physical activity, and mental wellness, as well as prevention efforts against substance use, eating disorders, and injuries (Langford, Bonell, Jones, & Campbell, 2015; Stewart-Brown, 2006). Findings from school health promoting interventions taking a CSH approach show health promotion is effective when efforts incorporate a whole school approach and multiple aspects of health behaviours (Stewart-Brown, 2006). Particularly, those school-based health promotion interventions targeting curriculum or policy-level change has been shown effective to improve obesity outcomes (Dabravolskaj et al., 2020).

It is also important to highlight school-based health promotion interventions have shown improved health and academic outcomes for students (Faught, Ekwaru, et al., 2017; Fung et al., 2012; Veugelers & Fitzgerald, 2005). Health outcomes related to healthy eating, physical activity, and mental wellness show improvements, which in turn, can positively influence academic outcomes (Faught, Gleddie, et al., 2017; Langford et al., 2017; Michael et al., 2015). Health and academic outcomes will be explored in this section to demonstrate the effectiveness of interventions using a CSH approach.

2.3.2.1 Children's health outcomes

Children's health outcomes are shown to be impacted both at school and outside of school as a result of CSH (Bastian et al., 2015; Fung et al., 2012; Vander Ploeg et al., 2014; Veugelers & Fitzgerald, 2005). Among the studies included in a systematic review of health promotion interventions, small but positive effects were noted for health behaviour outcomes

including a decrease of body mass index, smoking, and rates of bullying, as well as the increase of physical activity, fitness, and fruit and vegetable intake (Langford, Bonell, Jones, Pouliou, et al., 2015). Similar results have been reported across other studies; notably, students showed increased fruit and vegetable consumption and diet quality, decreased dietary energy intake, increased physical activity, and decreased odds of obesity (Fung et al., 2012; Veugelers & Fitzgerald, 2005) with these noted effects sustained over three years of measurement (Fung et al., 2012). School-based health promotion interventions have shown similar positive effects to body mass index, physical activity, and fruit and vegetable intake (Langford et al., 2014).

The CSH approach has shown equally effective outcomes for all students and interventions have shown reduced inequalities of physical activity; children of low SES showed an increase of physical activity that reached a level comparable to children of higher SES physical activity levels during both school and after school hours (Bastian et al., 2015; Vander Ploeg et al., 2014). The long-term impact of CSH shows positive health effects of knowledge, attitudes, and behaviours of CSH continuing into adolescence and new school environments, such as the transition from elementary to secondary schools (Ofosu et al., 2018).

2.3.2.2 Children's academic outcomes

There is mixed but positive evidence to show that healthy children show improved academic outcomes (Akiyama et al., 2020; Langford et al., 2017; Michael et al., 2015). Although it has been argued further evidence is needed to support conclusive impacts of health improvements and academic outcomes (Langford et al., 2014), there is growing evidence to suggest children's diet and physical activity levels show an impact on academic achievement (Bedard et al., 2019; Burrows et al., 2017). Further, the coordinated efforts of the CSH approach showed correlation between school health status and student's academic attainment (Akiyama et

al., 2020). By meeting multiple health behaviour recommendations including those for diet, sleep, screen time, and physical activity, reading and writing skills were positively impacted (Faught, Ekwari, et al., 2017; Faught, Gleddie, et al., 2017). Improvements to academic performance are even noted from interventions that focus on a single aspect of health behaviour such as healthy eating (Burrows et al., 2017) or physical activity (Bedard et al., 2019; Gall et al., 2018; Gonzalez Sicilia et al., 2018). Improved nutrition among children such as regular breakfast, lower intake of junk food, and better diet quality (including increased fruit and vegetable intake) result in better academic outcomes (Burrows et al., 2017). Likewise, incorporating physical activity into academic classes has shown slight positive improvements in academic achievement for children, who participate in physical activity every day as well as greater enjoyment of classes (Bedard et al., 2019). Even amongst low SES children who typically face additional barriers to being active, physical activity interventions show improved academic outcomes (Gall et al., 2018). Furthermore, health behaviours both at school and outside of school can impact academic achievements. In one study it was shown time spent doing physical activity outside of school during leisure time also showed benefits to school work and was associated with higher grades in language and math (Gonzalez Sicilia et al., 2018).

A recent focus in research is the impact of mental and emotional wellness promotion on students' academic outcomes. Supporting children in a positive school climate results in better academic achievement of students (Daily et al., 2020). As well, long-term impacts are noted on academic achievement, positive attitude, pro-social behaviour, through social and emotional learning and has been found across varying population demographics to have similar effects (Taylor et al., 2017). The success of the CSH approach is due to the complexity of implementing

all components of CSH approach together. The next section will detail the evidence for the four CSH components.

2.2.3 Evidence for CSH and respective components

The holistic and multifaceted approach of CSH strengthens health and education priorities through cohesive actions of the school community, supported by the physical and social environment (Lister-Sharp et al., 1999; St Leger, 1999). The whole school approach of CSH “incorporates a healthy culture through structures, policies and procedures for staff, students and community to model and promote health and well-being” (Bassett-Gunter et al., 2016, p. 241). CSH works to create individual and school-level change by fostering shared values and beliefs and demonstrated leadership related to health and wellness (Samdal & Rowling, 2011) though the approach is uniquely adapted within each school to their implementation needs (Storey et al., 2016). Research by Storey et al. (2016) identified essential conditions for successful CSH implementation to change school culture. The essential conditions are made up of both core and contextual conditions. Core conditions include students as change makers, school-specific autonomy, demonstrated administrative leadership, higher-level support, dedicated champion(s) to engage school staff, community support, quality and use of evidence, professional development (Neely et al., 2020). Contextual conditions are time, prior community connectivity, readiness and understanding, and funding and project support (Neely et al., 2020). These conditions help achieve culture changes and influence day-to-day practice in schools. Collectively health promotion efforts must take place throughout all four of the JCSH components and will be explored further: social and physical environment, teaching and learning, policies, and partnerships and services.

2.2.3.1 Social and physical environment

The social environment (e.g., relationships and emotional wellbeing of students and staff) and physical environment (e.g., buildings, structures, grounds, and equipment) create a culture and feeling of the school that makes school a place where students, staff, and families want to be (Joint Consortium for School Health, 2021). A positive and welcoming school climate strengthens the family-school connection and also increases parent involvement and children's desire to attend school (Epstein, 2011). The school environment is a space that is sanitized, safe, and accessible where healthy choices are available for all (Joint Consortium for School Health, 2016).

CSH actively involves school community members that include teachers and staff, administration, parents, and students, whose buy-in is particularly crucial to effectively enact health promoting change in schools and provide resources for interventions (Stolp et al., 2015). One foundational relationship that shapes the social and physical environment is the teacher and student relationship (Hamilton et al., 2021; Minniss & Stewart, 2009). Staff that build respect and trust with students fosters a welcoming school environment and even stronger connection to students (Minniss & Stewart, 2009). Throughout the school day teachers can model healthy or unhealthy classroom practices through demonstrated activities and food-related rewards offered to students (Hamilton et al., 2021). Teachers can also role model healthy and unhealthy practices based on their own health behaviours in school and beyond the school (Hamilton et al., 2021). Teachers with greater experience, and who demonstrate good personal health, are associated with lower use of unhealthy practices and indirectly influence students through more frequent health behaviours modeled (Hamilton et al., 2021). Student participation can actively shape school-based health promotion in the school (Fitzgerald et al., 2009). Generally, student participation in

health promotion efforts leads to greater ownership and competency (Griebler et al., 2014). CSH interventions that empower students through leadership roles has been shown to enhance the ability for children to make health changes to diet and physical activity (Ferland et al., 2015).

The principal is a leader of change practice, and they create the readiness of the school climate (Samdal & Rowling, 2011). The role of the principal is critical to allocate time and resources towards CSH efforts to demonstrate support (Roberts et al., 2016; Storey et al., 2016). Roberts et al., (2016) determined the principal has a major role in a leadership capacity beyond the day-to day direction of the school, but also as a leader for changing the school culture towards a health promoting culture. The principal can create health promoting change in the following capacities: priming cultural change and role modelling; advocating cultural change; negotiating, motivating, and collaborating with others; monitoring and enabling others; and sustaining the support (Roberts et al., 2016). This influential leadership role of the principal is important in building relationships and networks in order to create resources for change in schools (Anderson & White, 2011).

Health promoting changes within the school setting are also introduced through the leadership of dedicated health champions or committees to direct health and wellness efforts and dedicate resources and time to (Barnes et al., 2013). These leaders promote changed values amongst the school community to shift school culture and create a supportive environment for health promotion (Samdal & Rowling, 2011). The roles of dedicated health champions, whether individually or as part of a wellness committee or team, are crucial to create environments and practices among staff and students to embed health and wellness into school culture (Bassett-Gunter et al., 2016; Storey et al., 2016). Furthermore, Griebler et al., (2014) report the involvement of students as leaders changes the school culture, results in improved interactions

among peers and adults, and relieves the workload of teachers. Students can drive change and their interest can significantly make new initiatives introduced in the school easier (Storey et al., 2016).

Changes to the physical environment are most reported in the literature of CSH approaches and often directed toward creating an environment for healthy eating, including adequate eating areas for students to gather, water fountains, and nutritional campaigns (posters and signage) (Taryn et al., 2017). Physical changes to the school environment also include examples such as the addition of health promoting buildings and spaces, equipment and amenities (Joint Consortium for School Health, 2021). A common feature of school-based interventions are healthy food programs for all students, which support nutrition, by providing healthy food daily (Gillies et al., 2020). The school environment also promotes daily physical activity with intentional spaces where daily physical activity can occur in the school (Langford et al., 2017).

2.2.3.2 Teaching and learning

The aspect of teaching and learning in the CSH approach is the formal (i.e., curriculum) and informal education of students as well as the training of teachers (i.e., professional development) that support children's health and academic outcomes (Joint Consortium for School Health, 2021). To influence school health promoting culture broadly, organizational and structural school influences are addressed in school curriculum, for example dedicated classroom learning time and mandated subjects to be taught. The integration of health into education curriculum provides the time and structure to address health behaviours through teaching activities (St Leger, 1999). Schools face pressure to cover education curriculum, yet health promotion activities have been shown effective when they are an add-in to classroom learning

rather than an add-on due to the time and resource constraints teachers face (Bentsen et al., 2018). Barriers to time and resources can be restrictive and require supportive structures within the school (Hamilton et al., 2021). Importantly, incorporating health into curriculum and professional development gives teachers the knowledge and skills to incorporate aspects of CSH into daily teaching activities (Joint Consortium for School Health, 2021; Samdal & Rowling, 2011). In Canada, CSH training is not a component of a teacher's formal education training and therefore, remains within the initiative of individual teachers to commit their time to (Veugelers & Schwartz, 2010). However, incorporating health promotion into curriculum relieves the stress of added work to individual teachers (Bentsen et al., 2018). The role of teachers to promote health within classrooms can be further supported by the support of administration (Stolp et al., 2015), for example by including time in the daily schedule dedicated to wellbeing.

Due to their role in the daily education of children, the involvement of teachers is crucial to support health promotion (Simovska & Carlsson, 2012). Teachers' buy-in and ownership of the CSH approach facilitates change within the school (Storey et al., 2011). Teachers have both direct and indirect influence of health promoting practices. As a direct influence, teachers play a main role to integrate health and education in the classroom and school environment (Bonell et al., 2014). To further support classroom practices, professional development for teachers is needed to bolster knowledge and confidence (Minniss & Stewart, 2009; Montemurro et al., 2023; Storey et al., 2015). Professional development in any aspect of health promotion provides overarching support for teachers and the connectedness they feel to each other; a crucial aspect when promoting a whole school approach (Minniss & Stewart, 2009). Noted in the essential conditions of CSH implementation, professional development is important in an ongoing manner throughout implementation (Neely et al., 2020; Storey et al., 2016) and ensures both new and

existing staff in a school receive training to promote a healthy school culture (Montemurro et al., 2023). In a multiple case study examining how school districts support and embed wellness practices, it was found that professional development and learning opportunities, such as engaging external consultants with particular expertise, built capacity among teachers, staff, and administration to support both student and staff wellbeing. Ongoing opportunities for professional development allowed schools to be responsive to emerging needs of the school community (Montemurro et al., 2023). This is particularly relevant as schools move forward with CSH post-COVID-19 pandemic with elevated concerns emerging around student and staff mental wellbeing.

2.2.3.3 Policies

The CSH approach describe policies as “management practices, decision-making processes, rules, procedures and policies at all levels that promote health and well-being, and shape a respectful, welcoming and caring school environment” (Joint Consortium for School Health, 2021). Wellness policies can be implemented at many different levels (i.e., school policies, school jurisdiction or district policies, provincial/territorial policies). Top-down policies create a cohesive health promotion culture that can be further supported by school leadership (McIsaac et al., 2017). High-level support is a noted essential condition of implementation as it provides greater accountability for schools to implement a CSH approach (Neely et al., 2020). School policies help to achieve long-term sustainability of health promotion initiatives (Rowling & Samdal, 2011). Evidence from a scoping review of school- and community-based interventions found that members of the school community, including students, can advocate for policy changes within the school (Jourdan et al., 2016). However, even without formal policy, school districts can embed wellness into practices as found by Montemurro et al. (2023) through

strong leadership and coordination, resources, and enhanced social connection and dialogue as a catalyst to support wellbeing.

At the school level, health promotion policies may include a healthy school policy, wellness policy or school environment policies. Most commonly reported in the literature are school nutrition policies. School nutrition policies drastically alter the types of food offered and create a structure for administration and staff to cohesively promote as a standard for health behaviours (MacLellan et al., 2009; Samdal & Rowling, 2011). Another examples of a school-level policy described in Minniss and Stewart's (2009) case study research, is a policy directed towards safety and bullying. In this study both a policy and behaviour management strategies were implemented to promote safety and reduce bullying which led to efforts that were successful in fostering stronger school connectedness (Minniss & Stewart, 2009).

2.2.3.4 Partnerships and services

Creating healthy schools that prioritize health and education rely on partnerships and services which are key to a whole school approach. JCSH (2021) defines partnerships in the CSH approach as:

“Connections between the school and student's families; supportive working relationships within schools (staff and students), between schools, and between schools and other community organizations and representative groups; health, education and other sectors work together to advance school health; and community and school-based services that support and promote student and staff health and well-being”

The CSH approach is cited throughout the literature to rely on community connection as a key element of implementation. Specifically within the CSH approach, partnerships and services are listed as one key component of the model (Joint Consortium for School Health,

2021). Much research has noted the importance of establishing partnerships in school-based health promotion interventions (Barnes et al., 2013; Joint Consortium for School Health, 2021; Jourdan et al., 2016; Samdal & Rowling, 2011). Notably, the essential conditions for the effective implementation of CSH lists school-specific autonomy and community partnerships as two key conditions: school specific autonomy to adapt the intervention to the context of the school (Storey et al., 2016), and community partnerships to create unique connections that foster funding and resources within a local context (Barnes et al., 2013; Coppola et al., 2019). It is known the involvement of community partners could further the success of school-based health promotion effects by strengthening the interventions within schools (Bastian et al., 2015), and by providing additional resources and networking opportunities to share knowledge (Coppola et al., 2019). A health promoting intervention positively viewed by the community has a greater opportunity to enhance school-community partnerships (Emily et al., 2018). Reciprocal school-community support can form if there are shared priorities of health and education (Torres & Simovska, 2017). Further, both family and community involvement is associated with greater healthy opportunities and standards to support schools (Kehm et al., 2015). There are many noted benefits of strengthening the school and community connection. Schools often initiate connections to community partners and there are several ways that school-community partnerships can occur ranging from shared activities and collaboration to joint school-community designed interventions (Jourdan et al., 2016). Community involvement has shown positive effects on children's academic outcomes (Michael et al., 2015; Murray et al., 2007) by fostering learning opportunities outside of the classroom (Michael et al., 2015). As well, partnerships with schools support student learning and result in greater attendance, academic achievement, and access to health services (Blank, 2015). Therefore, involving partners across

school, home, and community environments is needed to support children's health and education jointly.

2.4 CSH Within Complex Systems: The COVID-19 Pandemic

Considering schools are part of a complex system, the surrounding context of a health promoting intervention drastically influences the implementation of the intervention (Hawe et al., 2009). Changes outside the school system, such as the COVID-19 pandemic, influence health promotion in schools. The COVID-19 pandemic created turbulence in school systems as schools in Canada closed in early March 2020 and alternated between online classes and in-person classes throughout the 2020-2021 school year based on provincial and territorial health directives as well as school district recommendations. When restricted to learning in the home environment, some students were unfairly impacted due to lack of space, safety, access to internet in their homes (Van Lancker & Parolin, 2020). Despite challenges to CSH implementation in the school system throughout the COVID-19 pandemic, the impact of the pandemic has shown that promoting health and wellbeing of students and staff is need more than ever (Russell-Mayhew & Murray, 2021; Testa, 2021). During the pandemic schools reported increased mental health concerns of school-aged children and adolescents (Cost et al., 2022) and increased levels of stress (Schwartz et al., 2021). Specifically in the periods of lockdowns and school closures, elementary school- aged children reported a lack of thriving, and overall increased boredom and loneliness leading to increased screen time (Maunula et al., 2021). Other impacts noted were worsening pre-existing health inequities among children, such as food insecurity (Van Lancker & Parolin, 2020) and gaps in math and literacy skills across socioeconomic backgrounds with a disproportionate effect on students of low SES (Alvarez-Rivero et al., 2023).

School staff also faced mental health concerns with added emotional labour. This was due to reasons such as meeting additional student's needs, teaching in reduced learning time, promoting the health of students and ensuring physical distancing, and feeling disconnected to students and families (Gadernann et al., 2023). Many staff took on additional work during school closures and when schools returned to in-person learning, staff ensured classrooms and daily practices met public safety measures standards, which resulted in further feelings of stress and burnout (Alberta Teachers Association, 2022).

Whole school approaches have offered guidance to school re-entry where health and wellbeing concerns can be addressed with the physical and social environment of the school, as well as established safety policies, professional development opportunities to support students and strong relationships between school and home (Pattison et al., 2021) that are unique to each school context (Childs et al., 2022). Adaptability of school staff and partnerships in the community (e.g., with health agencies), is shown to have a positive impact on student wellbeing during adverse events such as the pandemic (Testa, 2021). To further integrate health and wellbeing supports into school communities (i.e., environments and curriculum) after events like the pandemic, additional resources and professional development are needed (Childs et al., 2022). Moreover, higher-level support including administration that promotes work-life balance and overarching school district-level policies are actions needed to support wellness (Gadernann et al., 2023). Though it has been noted research is needed “examining the relationship between district well-being prioritization and resiliency in times of crises or upheaval” (Montemurro et al., 2023, p. 10). Promoting CSH during the pandemic has not received much research focus but evidence early in the pandemic suggests students with positive attitudes toward healthy lifestyles

fostered at school carried these throughout the pandemic (Maximova et al., 2022). The endurance of whole school approaches such as CSH that are embedded into schools remains to be studied.

2.5 Schools' Impact on the Home and Community

Schools can be seen as a natural gathering space during school pick-up, drop-off, and school-wide events. Schools are abundant in social capital with the number of people that interact together on a daily basis (Wood et al., 2013). Hence, schools are seen as hubs within communities where people are brought together, and connections are made. In a study examining school connectedness, Minniss and Stewart (2009) identified how “an ecological view of school connectedness takes into account the quality of connections among multiple groups in the school community and recognises the cohesiveness among different groups, such as students, families, school staff, and representatives of health and community agencies.” (Minniss & Stewart, 2009, p. 4). Building trust and inclusive practices welcomes staff, families, and community members into schools (Minniss & Stewart, 2009). When taking a CSH approach, these connections foster capacity building. The CSH approach allows for local decision-making using a capacity-building approach within schools to identify strengths and areas for improvement (i.e., resources, teams, policies) (Gugglberger & Dür, 2011). In this process, CSH interventions are adapted to the context of the school and broader community needs; for example, different approaches are taken in rural schools versus urban schools (Veugelers et al., 2022). A foundational component of the CSH approach are partnerships beyond the school (i.e., the home and broader community) (Joint Consortium for School Health, 2016). In general, community partnerships benefit the schools by providing resources and greater support to students within a local context (Barnes et al., 2013; Coppola et al., 2019). However, the outcomes of community involvement in schools promoting

health are continually cited as an area where more research is needed (Jourdan et al., 2016; Langford et al., 2017).

Family-school and school-community connections are established based on the interactions and actions of children, school staff, parents, and community members (Epstein, 2011). School community members are leaders of change in the process of transitioning the school to a health promoting environment and culture. Specific to health promotion, there is evidence to suggest health practices are impactful beyond the school to the home, and as far as the surrounding community environment through sharing of health-related knowledge from school interventions to individuals outside of the school like parents and community members (McKernan et al., 2019; Vaughan et al., 2003). Therefore, it is not only plausible but a key factor to consider how the school and community enact health promoting change based on prior school-community connections.

2.5.1 School-home connection

2.5.1.1 Parents

Parents have influential roles in children's health and education. Parental involvement in the school has been associated with better academic achievement in elementary school-aged children and a more positive learning environment (Park et al., 2017). Similarly, Semke and Sheridan (2012) also report parental and family involvement in rural schools shows positive effects for children's academic outcomes. Family involvement in the school has been suggested to impact nutrition and physical activity levels through the physical environment of the school: demonstrating lower amounts of unhealthy foods, increased availability of fruit and vegetables in vending machines and celebrations, and presence of healthy eating strategies (Kehm et al., 2015).

Involvement of parents in the school environment provides social capital and is a way to strengthen the connection to the home environment and provide time through resources (i.e., volunteering) (Park et al., 2017). Parents who are closely connected to the school build trust and additional interpersonal relationships that are beneficial to their children, themselves, and the whole school (Wood et al., 2013). Epstein (1995) notes six types of parental involvement with the school: parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community. Involving parents in the school includes communication (i.e., sending learnings home to support child development and learning in the home and school) and collaboration (i.e., placing parents as members on committees and gathering parent input on school decisions) (Dikkers, 2013). Parent involvement benefits school populations from attendance at school events and networking and the latter seeing benefit through fundraising and volunteering (Park et al., 2017).

2.5.1.2 Children

Children learning health promotion information at school can bring this information into the home environment and change their own behaviours outside of the school (McKernan et al., 2019; Vander Ploeg et al., 2014) as well as their family's behaviours (Aldinger et al., 2008; Rausch et al., 2015). Children participating in one school-based intervention (i.e., APPLE Schools) were more physically active during school hours and also showed increased physical activity afterschool and on weekends (Vander Ploeg et al., 2014). In recent research, a change of children's health behaviours related to healthy eating and physical activity was noted in the home environment as well, health information was shared by children to create new changes in the home by making a healthy home culture (McKernan et al., 2019). Taken together, these studies are key to demonstrate that children are key leaders of change and support the structure of

interconnected domains of school and home. Beyond the walls of the home, children influence consumption and buying habits within their own families due to modern family dynamics and an increasing role of children as active decision-makers in the household (Flurry, 2007).

Children who receive health messaging can relay information home and further enact change in family health (Burrows, 2017). Information learned at school that is directed towards children reaches parents and adults in the home environment and has shown to change parents' knowledge, attitudes, and behaviours (Aldinger et al., 2008). For example, parents' exposure to school-based interventions through their children showed decreased unhealthy behaviours and an increase in attitudes of readiness to change their own physical activity after two years (Rausch et al., 2015). Reinforcing the interconnectedness of the school, home, and community environments, are the ways that schools can impact change in communities, which will be further explored.

2.5.2 School-community connection

CSH involves partners within and across the school and community environments in order to promote change at the individual and organizational level (Samdal & Rowling, 2011). The connection between schools and communities and the impact on one another is not automatic (Anderson & White, 2011). Instead, it relies on key people to make connections and furthermore, to make change. The transfer of health promotion originating in the school to enact broader change beyond the school has not been studied but the transference between schools and communities has been generally studied.

As noted in published research, principals play a key role to establish connections between schools and the surrounding communities (Anderson & White, 2011), and teachers and parents can further these connections (Dikkers, 2013). The principal holds an important role as a

connection to the community and gatekeeper that recognizes the unique school needs situated within the broader community (Anderson & White, 2011). Furthermore, the principal of a school plays a role in the engagement and participation of partners inside the school and outside of the school, specifically parents and community members (Torres & Simovska, 2017). It is commonly found in the research that parent involvement is reported as the most challenging aspect of interventions (Langford, Bonell, Jones, & Campbell, 2015), yet parent involvement in interventions is crucial. Parents have a unique role as members of the school community and broader community. Parents often initiate community involvement and partnerships with schools through their connections (Jourdan et al., 2016). The communication fostered in schools between staff and parents over promoted values, such as physical activity, allows for coordinated efforts inside and outside the school and offer further opportunities with local community partners (Vander Ploeg et al., 2014). Beyond teachers, administration and parents, students play a major role as leaders of change in a CSH approach.

Students have the potential to be leaders of change by sharing knowledge learned at school and being role models of positive change (McKernan et al., 2019). Children first enact change in the home environment, which over time can be translated into the broader community (Mukhopadhyay & Bhatnagar, 2005; Simovska & Carlsson, 2012; Vaughan et al., 2003). Hazinski et al., (1995) reported an increase of family seatbelt use through a traffic safety school-based education program, which was even more pronounced among low-income families. School-based education has benefits to those outside of the school as the knowledge learnings at school transfer to those in close proximity, beginning in the home and leading to intercommunity learning (Mukhopadhyay & Bhatnagar, 2005; Vaughan et al., 2003). In a study by Vaughan et al., it was shown in a close-knit community, the community members were naturally exposed to

the values and behaviours of children who demonstrated what they learned at school; for example, environmental education throughout their daily interactions with members of the community (Vaughan et al., 2003). In another study, a participatory approach co-developed with children established key responsibilities for the children to share health messages and demonstrate health behaviours to others in the home and community, and initiatives at school sparked change in the community and received support and involvement (Mukhopadhyay & Bhatnagar, 2005). It is suggested that children can also be given roles to actively participate in and lead school-community based connections (Jourdan et al., 2016).

Taken into consideration, the recognized impact of school interventions at a community-level, and the school and community connection support the interconnected domains of the home, school, and community in a CSH approach and suggests potential and significant influences for CSH approaches to create broader change in communities. It is suspected a local school may generate more impact than what is restricted to within the school walls as seen by evidence that schools drawn social connections together that benefit entire neighbourhoods (Wood et al., 2013). However, the extent of this impact is unknown. Research on school and community connections has focused more so on parental involvement rather than broader community members and partnerships in practice. One scoping review attributes this to a lack of evidence (Jourdan et al., 2016), but this may be a lack of reporting on behalf of schools. If CSH truly reaches beyond the school to the home and community, it reinforces the CSH approach and has implications for CSH in practice. As well, it is unknown if community involvement in a CSH approach impacts school resiliency particularly during times of adversity. To build on the knowledge known about the effectiveness of CSH and further understand the reach of school

taking a CSH, the proposed research will examine the CSH intervention, APPLE Schools (A Project Promoting healthy Living for Everyone in Schools).

2.6 A Project Promoting healthy Living for Everyone (APPLE Schools)

A Project Promoting healthy Living for Everyone in Schools (APPLE Schools) is a school-based health promotion intervention that is based on the CSH approach that “empowers school communities to lead, choose and be healthy” (APPLE Schools, 2021a). The intervention was initially implemented in 10 Alberta schools in 2007 and is now currently implemented in 100 schools across the provinces of Alberta, British Columbia, and Manitoba and the Northwest Territories in Canada reaching over 33,000 students annually (APPLE Schools, 2021b). APPLE Schools promotes healthy eating, physical activity, and mental wellness to establish health habits in school aged children (APPLE Schools, 2021a) and is based on the best practice of Annapolis Valley (Ohinmaa et al., 2011).

2.6.1 Implementation process

APPLE Schools is an evidence-based intervention informed by ongoing research and evaluation. APPLE Schools has received recognition as best practice for their process of CSH implementation through the Public Health Agency of Canada (PHAC): Canadian Best Practices Portal (Public Health Agency of Canada, 2011) and the National Institutes of Health: Research-tested Intervention Programs (National Cancer Institute: Research Tested Intervention Programs, 2015). APPLE Schools is also globally recognized as a scalable intervention through the Finland non-profit organization HundrED (HundrEd, 2019).

APPLE Schools has a unique implementation model that has a School Health Facilitator (SHF), funding, professional development, materials and resources, ongoing support from APPLE Schools staff, and continued research throughout implementation (APPLE Schools,

2021c). The SHF is a dedicated staff member that is willing to lead change efforts in the school. The SHF position is funded by APPLE Schools for three years in the following capacities: 0.5 part time in the first year, 0.5 part time in the second year, and 0.2 part time in the third year. The SHF role helps to foster support of the school community to create a healthy school culture and entails relationship building, activity planning, resource distribution, and goal setting. The SHF works with their school community (i.e., students, staff, administration, and parents) to develop a CSH action plan that is unique to their school and builds on existing strengths and identified needs in the school community. Throughout implementation, the SHF receives training from APPLE Schools about CSH and receives support through ongoing knowledge exchange events to learn from other school communities. After three years, where there is no longer APPLE Schools funding, the SHF transitions to a volunteer role of School Health Champion. This is the point when the planning and initiation of the activities become part of the day-to-day school activities, and there is shared responsibility and leadership taken on by many members of the school community. Following this process ensures a sufficient time period to establish a health promoting culture and support the changes made in a sustainable way.

2.6.2 Outcome evaluation

With over a decade of implementation in schools, there is much evidence to suggest the widely noted positive impacts for students as well as the sustainability of health outcomes for children (Ofosu et al., 2018). Research of APPLE Schools have specifically shown students have increased physical activity and diet quality (increased fruit and vegetable intake and decreased energy intake), and decreased obesity rates (Fung et al., 2012). Furthermore, research has shown decreased physical activity inequities in children attending APPLE Schools (Bastian et al., 2015; Vander Ploeg et al., 2014) and an improvement of physical activity outside of the school

environment (Vander Ploeg et al., 2014). Students who have attended an APPLE Schools elementary school have shown extended benefits, bringing health-related knowledge and attitudes, self-efficacy, diet, physical activity, and weight status during the transition to junior high and high school a period of over five years (Ofosu et al., 2018). These findings were notable as there was no significant differences between those who attended an APPLE elementary school or did not (e.g., a comparison school), which suggests an “equalizing effect” on the students who originally began school in disadvantaged, rural and remote areas (Ofosu et al., 2018).

2.6.3 Process evaluation

APPLE Schools follows the essential conditions for successful CSH implementation (Neely et al., 2020) throughout their implementation model. Since APPLE Schools are spread across the vast geography of western and northern Canada, school-specific autonomy is critical and is heavily reliant on the expertise and knowledge of the school community. The roles of teachers, SHFs, administrators, and students within APPLE Schools have been previously studied (McKernan et al., 2019; Roberts et al., 2016; Storey et al., 2011; Storey et al., 2015). Research with APPLE Schools has proven the practice of supporting a dedicated health champion to engage the school community is an essential condition to implement CSH (Storey et al., 2016). Further, a social network analysis of APPLE Schools has shown the SHF and principal have central roles in sharing health-related knowledge and advice to the whole school community (Storey et al., 2021). The principal has the capacity to provide supportive leadership, however, without it, can be a major barrier to implementation (Roberts et al., 2016; Storey et al., 2016). Student leadership is one key aspect that supports implementation and is related to healthy eating and active living behaviours demonstrated by students (Ferland et al., 2015). Furthermore, the leadership of students is exemplified in research that examined the role of

students to create change in the home environment through the sharing of health-related knowledge learned at school and demonstrated behaviours at home (McKernan et al., 2019). The perspectives of teachers, SHFs, principals, and students are a strong representation of the school community and those needing to be involved in implementation. While an essential condition for implementation is community support, the community perspective has not been considered.

2.7 Study Significance

Research on the CSH approach has recognized that effective implementation of school-based health promotion practice requires the broader community as a source of support and literature suggests community involvement with schools is invaluable (Epstein, 1995). Yet it is not widely understood what partnerships in schools using a CSH approach looks like in practice. A decade ago, the research declared the link between school and community as unclear though explicitly called for intersectoral collaboration between the school, family, and community to create shared visions and decision-making (Deschesnes, 2003). The school and community connection has remained unclear as a lack of understanding of community involvement is continually cited as an area where more research is needed in the literature of CSH (Jourdan et al., 2016; Langford et al., 2017). Previous qualitative research has shown children attending school create broader change beyond the school based on the learnings shared from the school environment (McKernan et al., 2019). Therefore, based on these connections, we want to explore how health promotion in schools creates change in communities and explore the school-community connection. Studying the school-community connection and community impact must consider the impact of the participatory approach of CSH implementation. The participatory approach of CSH builds on local knowledge to adapt health promoting changes to existing strengths and needs, which create sustainable and effective interventions (Durlak & DuPre,

2008). Thus, school-based health promotion efforts with a CSH approach are unique within each school and need to be studied within the context of the school and community environments. Equally important is the contextual environment of implementation is an understanding of how schools adapt to change, and more specifically, stressors to the school system. Recognizing CSH efforts are deeply interconnected between school, home, and community environments, and knowing CSH impacts both the school and home, this research seeks to explore if and how CSH impacts the school and community environments and how these connections endure throughout adverse events. The impact of CSH on school and community environments will be understood from the perspectives of both school staff and community partners.

CHAPTER 3: IT TAKES A COMMUNITY: EXPLORING APPLE SCHOOLS' IMPACT WITHIN AND BEYOND SCHOOL WALLS IN CANADA

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3.1 Background

Schools are recognized as ideal settings for health promotion as they reach a large number of children and youth during critical developmental years (Fung et al., 2012), and healthy behaviours have been positively associated with academic achievement (Faught, Gleddie, et al., 2017). However, to be effective, school-based health promotion efforts must extend beyond school walls and address the many interacting environments that influence a child's life (Epstein, 2011). These environments include both the child's home as well as the broader community, contextualized as the neighbourhoods and municipality in which the school is located.

Comprehensive school health (CSH) is an internationally-recognized approach to health promotion in schools, with principles rooted in the World Health Organization's Ottawa Charter for Health Promotion (World Health Organization, 1986). CSH addresses not only the school environment, but also the home and community environments. Specifically, CSH aims to foster the development of sustainable healthy school communities to support students' health and wellbeing using a holistic, multifaceted, intersectoral approach (Joint Consortium for School Health, 2021; Stewart-Brown, 2006; Storey et al., 2016; World Health Organization, 1986). CSH has four components: social and physical environment, teaching and learning, policy, and partnerships and services (Joint Consortium for School Health, 2021). CSH has been demonstrated to be effective in improving healthy eating, physical activity, and weight status of

children (Fung et al., 2012) and there is mixed but positive evidence to suggest improvement in academic outcomes (Akiyama et al., 2020; Langford et al., 2017; Michael et al., 2015). However, there is limited research on the context of the health promoting environments that CSH addresses both within and outside the school.

A defining feature of CSH is that schools are encouraged to assess their strengths and needs and cater their goals to their own unique situations and contexts (Storey et al., 2016). The CSH approach recognizes that each school is situated in a particular community where ‘place’ can have a profound effect on health promotion initiatives both within and outside the school. Research examining the essential conditions necessary for successful implementation of CSH has identified eight core conditions, including school-specific autonomy (the ability to customize the CSH intervention to meet local needs, including the geographical, historical, and sociocultural considerations of the broader community) and community support (meaningful internal and external partnerships) (Storey et al., 2016). Therefore, it is imperative that school-based health promotion interventions adapt to the needs of the school and community context. However, it is unclear what this looks like in practice.

The purpose of this study was to explore the influence of a school-based health promotion intervention, APPLE Schools, on the school and community environments from the perspectives of school staff. School staff are key members of the school community, who hold responsibility for the child’s health and education (within the school environment), and includes teachers, administration, students, and parents. The broader community is made up of individuals outside of this immediate school environment and who are a part of the surrounding neighbourhoods and municipality. Understanding the context of implementation from the perspective of school staff (i.e., teachers, administrators, support staff) adopting a CSH approach

provides on-the-ground knowledge of how school-based health promotion efforts influence both the school and community environments. Furthermore, this research sought to examine the impact of CSH in non-urban contexts and small-medium urban contexts (< 99,999 people) (Statistics Canada, 2016). Previous research on the implementation of CSH have not differentiated between rural and urban settings (Ekwaru et al., 2017; McKernan et al., 2019; Stearns et al., 2019) and therefore was unable to address unique local contexts such as smaller community sizes, limited access to resources, economic recession, and the lasting impacts of colonization. Ultimately, our goal was to understand what health promoting changes occurred within schools and determine the impact outside the school at the community-level.

3.1.1 APPLE Schools Intervention

APPLE Schools (A Project Promoting healthy Living for Everyone in Schools) is an evidence-based, innovative, and globally recognized school-focused health promotion intervention that takes a CSH approach that exists in 75 school communities in Alberta, Northwest Territories, Manitoba, and British Columbia (APPLE Schools, 2021a) and impacts the lives of 21,000 Canadian students annually¹. APPLE Schools aims to improve health behaviours in school-aged children and youth by improving healthy eating, physical activity, and mental health habits (APPLE Schools, 2021a). Previous research evaluating the effectiveness of APPLE Schools has determined that students in APPLE Schools have improved nutrition habits, are more physically active, and are more likely to be a healthy weight compared to other students (Fung et al., 2012; Vander Ploeg et al., 2014). Additionally, it has been shown that students attending an APPLE school drive changes outside of the school in the home environment (McKernan et al., 2019).

¹ At the time of publication, this was the reported reach of APPLE Schools. It is currently implemented in 100 school communities and impacts the lives of more than 33,000 students annually.

An important component of the APPLE Schools model is dedicated staff time in the form of a School Health Facilitator. For the first three years, schools receive funding to support a School Health Facilitator who acts as the school's wellness champion. This individual works with school community members (i.e., teachers, staff, students, and parents) to develop a CSH action plan specific to the existing strengths and needs of the school community. Through this process, the School Health Facilitator identifies areas to incorporate healthy living strategies into the classroom, school, and community. This is done by setting actionable goals, establishing connections with community partners, and providing resources to students, teachers, staff, and parents to become empowered to make healthy choices (APPLE Schools, 2021b). After three years, the School Health Facilitator transitions into a volunteer role, the School Health Champion.

3.2 Methods

3.2.1 Research paradigm and theoretical perspective

This research study on the school- and community-level impact of CSH was informed by a constructivist approach, which is made up of a relativist ontology and subjectivist epistemology (Denzin & Lincoln, 1994). A relativist ontology assumes multiple realities exist, and that the experiences and the meanings explored through the research question during the inquiry process were shaped by the realities of participants and researcher at the time of research (Denzin & Lincoln, 1994; Lincoln & Guba, 2013; Mayan, 2009). A subjectivist epistemology builds off of a relativist ontology and assumes the interaction between participants and the researcher results in knowledge that is co-created among participants and researchers (Denzin & Lincoln, 1994; Lincoln & Guba, 2013; Mayan, 2009).

The constructivist approach also aligns well with the participatory nature of APPLE Schools and the research methods. The APPLE Schools approach works uniquely to implement CSH within each school community, allowing school-specific autonomy to build health promoting practices targeted to individual schools' strengths and needs. Additionally, the constructivist approach aligns with the research methods of case study and focused ethnography. Foundational to case studies, and those cases made up of many individuals, is the ability to see from others' views who are part of the case and may have differing views of reality, yet the many realities are captured through researcher observations and reflections (Stake, 1995). The constructivist approach assumes a social construction of knowledge as "we come to know what has happened partly in terms of what others reveal as their experience" (Stake, 2005, p. 454). Researchers interpret the setting and through interactions with participants, gain an understanding of the culture that shapes the representation within the research findings (Lincoln & Guba, 2013).

3.2.2 Research methods and approach

3.2.2.1 Case study and focused ethnography

An exploratory approach that was qualitative in nature was used to gain in-depth knowledge of the school and the broader community environments, while contextualizing the research findings (Yin, 2009). As such, this research project was informed by a both case study approach and focused ethnography method. A dual approach was helpful in this research because case study fit the nature of inquiry and was chosen from the onset of research to understand the broad contextual influence of schools using a CSH approach. The case study approach was a guiding method throughout the research. Focused ethnography was identified shortly after cases were chosen to more clearly define the data generation and analysis strategies and blended with

case study data generation. Focused ethnography also narrowed the focus of the research to understand finer details including the culture expressed within each of the cases.

A case study approach is unique in that it “is both a process of inquiry about the case and the product of the inquiry” (Stake, 2005, p. 444). A case study captures a dynamic understanding of the everyday lives of participants and their environment while helping to answer the research question situated within the interactions between historical, cultural, physical, social, and economic contexts of the case (Stake, 2005). The research question to explore the impact of school-based health promotion on school and community environments was initially determined followed by the selection of cases. This suited an instrumental, multiple case study approach as the cases “play a supportive role, and facilitates our understanding of something else” (Stake, 2005, p. 445), namely an understanding of the research question. Both schools and broader communities needed to be a part of each case selected. The communities where schools were located were identified to bound the system of each case. To bound a case, is to identify boundaries that show who is a part of the case and who is not (Stake, 1995).

Building on the case study approach, focused ethnography was also used as a method to guide data generation and analysis. As the case study provides many contextual details to understand and describe the setting, and provide background information (Stake, 1995), focused ethnography complements this information by detailing the specific cultural changes and practices studied at the school- and community-level, including but not limited to social interactions, practices, behaviors, and shared understandings (Higginbottom et al., 2013; Mayan, 2009). To understand school-level cultural changes, this research explored the perspectives of school staff, who were directly involved with health promotion practices within the case study setting. A component of focus ethnography is the use of key informants, who have in-depth

knowledge of the research setting (Higginbottom et al., 2013). Key informants provide the background information required to navigate the research setting during short, intensive site visits (Knoblauch, 2005). The APPLE Schools management team assisted with identification of School Health Facilitators as key informants, based on their knowledge of the school and local context, which was important during site visits. Data generation strategies of case study and focused ethnography overlap in the use of field observation, interviewing, and document analysis, (Knoblauch, 2005; Stake, 1995). These data generation strategies are all used and integrated in this research. This combined approach allowed an in-depth exploration of the APPLE Schools health promoting culture in schools within northern Alberta and establish well-bounded case descriptions with an in-depth understanding of the uniqueness of the cases.

3.2.3 Participants

3.2.3.1 Case selection

For this study, five schools were purposefully selected within northern Alberta, Canada, because of their involvement in the CSH project, APPLE Schools, as well as their diversity and location within the region. When selecting schools, several considerations were used to determine diversity: population size, First Nation, Métis, Inuit populations, rural and urban locations, and years of APPLE Schools implementation. The schools each demonstrated notable school and community impact as identified by APPLE Schools management team. Schools were invited via an email from APPLE Schools to participate. Schools ranged in size in terms of student and staff population and were physically located in communities of varying population (see Table 1). Each school had its own unique context, including high staff turn-over, high cost of food and goods (relative to other parts of the province), diverse school populations, economic climate of the surrounding community (e.g., recession, impact of the oil industry), and the lasting

effects of colonization. One school had been involved in APPLE Schools since 2011-2012 (School D) and four schools since 2016-2017 (School A, B, C, E).

Table 1. School and community characteristics

	Participants Interviewed	School Characteristics	Community Context
School A	n=4 School health champion Teacher Principal Assistant Principal	Grades: Kindergarten-Grade 3 Number of students (n=250) Number of staff (n=45) Number of years as APPLE School: 4	Small village (population ~3,000) Multiculturally diverse community
School B	n=7 School health champion Administrative assistant Educational assistant Teachers (n=3) Principal	Grades: Grades 4-8 Number of students (n=328) Number of Staff: (n=27) Number of years as APPLE School: 4	Small city (population ~15,000) Home to a Canadian military base
School C	n=3 School health champion Principal Speech therapist	Grades: Kindergarten–Grade 9 Number of students (n=85) Number of Staff (n=20) Number of years as APPLE School: 4	Small hamlet (population ~200) Home to large Metis population and Chipewyan Prairie Dene First Nation
School D	n=3 School health champion Teacher Afterschool care teacher	French immersion Grades: Pre-school, Kindergarten–Grade 6 Number of students (n=450) Number of Staff (n=24) Number of years as APPLE School: 9	City (population ~72,056) Acts as an Urban Service Area* for nine rural communities and a large shadow population of temporary workers)
School E	n=4 School health champion Principal Teachers (n=2)	Grades: Kindergarten–Grade 6 Number of students (n=520) Number of Staff (n=38) Number of years as APPLE School: 4	City (population ~72,056) Acts as an Urban Service Area* for nine rural communities and a large shadow population of temporary workers)

Note: *An Urban Service Area is a large unincorporated community that is equivalent to a City (Government of Alberta, 2020).

3.2.3.2 Sampling

Within each school, purposive sampling was used. School health champions (n=5, one per school) were invited to participate in a qualitative interview given their instrumental role as

the primary driver of APPLE Schools. All school health champions had been at their school for the duration of the APPLE Schools intervention (range of 4-9 years, see Table 1). School health champions were then asked to identify others in the school involved with the implementation of APPLE Schools using a snowball sampling approach. It was appropriate, and advantageous, to further interview other school staff as they had direct involvement with local change efforts. These individuals provided specific insight throughout the school environment regarding their involvement with changes to the school and the impact of changes. Across all schools, 22 participants were interviewed, including teachers (n=9), school administrators (i.e., principals and vice-principals, n=5), school health champions (n=5), an educational assistant (n=1), an administrative assistant (n=1), and a speech therapist (n=1). The number of participants interviewed within each school varied but was dependent on the size of the school (including number of staff), and the amount of information needed to gain a rich understanding of the health promoting environment of the school and community. Morse (2006) recommends the sample size in qualitative research to be determined by saturation; a point when no new insights are gained from the data. In this research, saturation determined sample size, and participants were interviewed until no new information was provided.

3.2.3.3 Ethics

Ethical approval for this research was granted through the University of Alberta Human Research Ethics Board (Pro00035108). All schools approved the study in advance, and all participants provided verbal and written consent during the walking interviews.

3.2.4 Data generating strategy

3.2.4.1 Walking interviews

Walking interviews (also known as ‘go-alongs’) were used in this research. This unique, participatory data generating approach makes it possible to observe settings while having access to participants’ experiences and interpretations at the same time (Garcia et al., 2012; Kusenbach, 2003). The walking interview combines the strengths of ethnographic field observation and interviewing (Kusenbach, 2003). By fusing the two traditional techniques, the walking interview simultaneously takes advantage of the strengths of each approach while employing both to compensate for their individual limitations (Carpiano, 2009). Two members of the research team were present for each interview. One member of the research team facilitated the interviews, while the other member took detailed notes. Members of the research team alternated roles of interviewing and note-taking. The walking interviews involved interviewing participants while receiving a school “tour” led by the school health champion. Each of the walking interviews was approximately 2-4 hours in length and occurred during regular school hours. The school health champion led the walk around the school rather than following a route determined by the research team, which allowed the school health champion to serve as a guide and provide opportunities for subject cues to come up naturally. This led to richer and more place-specific material than if the interview was performed in a static environment (Evans & Jones, 2011). Semi-structured interview questions broadly focused on overall school changes, as well as the successes and barriers to implementation of CSH, and were further directed by the focus of the physical and social environment. Walking interviews were audio-recorded using a lapel microphone attached to the school health champion and an additional microphone was used to capture interviews with staff.

3.2.4.2 Field notes, photos, and reflective journaling

Other data generation strategies that occurred during walking interviews included field notes and photographs. Observation practices through field notes and photographs aligns with focused ethnography and case study methods (Carpiano, 2009; Richards & Morse, 2007). During walking interviews, one member of the research team wrote detailed notes of the physical environment describing the visual cues, such as settings within the school and the interactions among people interviewed. Photographs of the school environment were also taken during the walking interviews, allowing for pauses and moments of discussion. As photographs were taken, participants' interpretations of the social and physical environment were explored, which built an understanding of local contextual knowledge related to the environment (Kusenbach, 2003). Reflective journaling was used by the researcher to document the moments of the evolving research process including researcher assumptions, feelings, and thoughts about the research process (Mayan, 2009).

3.2.5 Data analysis

Data analysis involved iterative reading and review of data throughout data generation, which began after the first data were generated and occurred throughout the data generation process. Both research team members who were present for the walking interviews engaged in peer debriefing throughout data generation and analysis.

All interviews for this study were audio-recorded. Meaningful segments of the interview audio-recordings with the school health champion and school staff were identified based on the content that addressed the research question and agreement between researchers, which were consequently transcribed by the researchers. Stake (2005) notes it is necessary to negotiate the parts of data that will be studied in a case study as there are vast amounts of data generated.

During the walking interviews, there were periods of conversation not related to the research question; therefore, only relevant information to the research question was analyzed. Walking interview transcripts were supplemented by field notes and photographs from the walking interviews during analysis. Photographs informed the results by providing environmental details of the schools but were not included in the results to ensure confidentiality of the cases.

Data were analyzed using an inductive descriptive thematic approach described by Braun and Clarke (2006) using the following steps: 1) Familiarizing yourself with your data; 2) Generating initial codes; 3) Searching for themes; 4) Reviewing themes; 5) Defining and naming themes; and 6) Producing the report. Simultaneously, during steps 2-5, the steps of data analysis as per focused ethnography were considered: 1) Coding for descriptive labels; 2) Sorting for categories; 3) Identification of outliers; 4) Generalizing the constructs (theming); and 5) Memoing (Higginbottom et al., 2013).

Throughout analysis, data was triangulated among sources, which confirmed and strengthened emerging codes by situating findings within multiple data sources. Initially, transcripts and field notes were actively read for key information, and photos were examined as well to immerse the researchers in the data (Braun & Clarke, 2006; Saldaña, 2013). Data from each individual case was then coded by two researchers, who were present for the walking interviews. Coding, the process of connecting data and interpretations explained by Miles and Huberman (1994), was performed manually. In this research, a descriptive, line-by-line coding approach noted by Saldaña (2013), was taken for each of the transcripts. Codes were put into categories and organized using NVivo analytic software (Q. S. R. International, 2021). Field notes and photographs were examined with walking interview transcripts during analysis. The primary researcher employed reflection and memoing as a means to incorporate this data into the

coding process. One specific analytic technique noted by Mayan (2009) is memoing which assists in the identification of emerging themes by posing questions and thoughts about the connections made to data in the analytic process. Memoing through analytical notes was done throughout data analysis. Themes that arose from individual cases were discussed amongst the research team to determine agreement of patterns across cases, which were further themed by the research team.

3.2.6 Rigour

This research employed the use of Lincoln and Guba's criteria for trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). These four criteria and the respective verification strategies were integrated throughout this research as follows:

Credibility is the accuracy of data representation (Mayan, 2009). Several activities were conducted throughout this research to ensure credibility, including prolonged engagement, member checking, peer debriefing, and triangulation as described by Lincoln and Guba (1985). The researchers demonstrated prolonged engagement by the duration of data generation and immersion in the research setting. Multiple hours were physically spent at each site location during interviews engaging with multiple participants, who shared different perspectives, and brought a well-rounded understanding of each case. As well, engagement with the APPLE Schools management team throughout the research process provided an in-depth understanding of APPLE Schools and the school communities. Researchers met to discuss the interview process throughout data generation as a form of peer debriefing after each site visit as well as during the analysis process. Peer debriefing helps to establish investigator responsiveness, which is a process that is promoted through reflection and reflexivity during the research process, where

emerging findings can be discussed and the methods changed if necessary (Mayan, 2009). The use of several data sources (e.g., interviews, field notes, and photographs) were used to triangulate the findings and strengthen and situate contextual knowledge for each case.

The criteria of transferability is to ensure the research is sufficiently detailed in order to apply the findings elsewhere in a different context (Lincoln & Guba, 1985; Mayan, 2009). This research created a thick description developed through multiple data sources to capture data along with interpretations and observations (e.g., field notes and photographs). As suggested by Morse (2006), purposive sampling ensures data saturation is reached. Purposive sampling of the school and community cases, and School Health Champions within those cases, encouraged knowledgeable and informed participants spoke in-depth about the research question. Further, after purposive sampling was completed, snowball sampling was conducted until data saturation was reached. In addition to appropriate sampling, details of the community context of each case study setting were included, and a thick description of school and the broader community was created for each case.

Dependability refers to the ability to review how decisions were made throughout the research process (Lincoln & Guba, 1985; Mayan, 2009). A record of the research process through the use of an audit trail allows an external individual to review decisions and see how and why they were made (Lincoln & Guba, 1985). In this research, an audit trail of decisions was made throughout the research regarding method, data generation strategies, and sample were reported. Additionally, methodological coherence promoted alignment of the research paradigm and methods with the research question and data generation strategies. The alignment of research from conceptualization to methods through methodological coherence is best practice in qualitative research noted in the literature (Mayan, 2009; Richards & Morse, 2007). As well,

peer debriefing occurred throughout data generation and analysis to promote reflection and ensure researcher responsiveness.

The criteria of confirmability ensures objective and logical findings, grounded in the data, are reported (Lincoln & Guba, 1985). Several verification strategies used throughout the research for credibility, transferability, and dependability were brought together to support the confirmability of this research, including reflexive journaling, peer debriefing, triangulation, and use of an audit trail (Lincoln & Guba, 1985). The researcher employed the use of reflexive journaling and engaged in the process of peer debriefing among researchers throughout data generation and analysis. Both of these strategies used throughout the research process brought awareness to personal bias in researchers' interpretations (Mayan, 2009). Additionally, by using the walking interview approach, participants' interpretations of settings and events were provided at the time of data generation, which reduced researcher bias (Carpiano, 2009). Data from transcripts, field notes, and photographs were triangulated to validate findings of each respective data source. Triangulation is a way to use multiple perspectives, and multiple sources to situate data and strengthen findings (Stake, 2005) and the use of an audit trail provides an opportunity to review the research decisions to ensure methodological coherence (Mayan, 2009). Throughout the use of an audit trail of the research ensured steps were carefully taken to promote methodological coherence.

Additionally, the Standards for Reporting Qualitative Research (SRQR) checklist was used (O'Brien et al., 2014). The checklist was used as a guide throughout the research. The researcher answered and reflected on all questions on the 21-item SRQR to ensure transparency and trustworthiness throughout the entire research process.

3.3 Results

Five walking interviews identified four main themes: 1) APPLE schools look different, 2) APPLE Schools build champions, 3) APPLE Schools builds community partnerships, and 4) APPLE Schools honours community culture. While the themes related to the CSH model within the school and describe how the CSH model initiates the connection to the community, we did not employ an a priori framework to analyze the results. Instead, the CSH model offers contextualization to the themes described in detail below. Ultimately participants indicated that APPLE Schools supported a shift in philosophy of the school community and was seen as impactful across multiple settings. One administrator stated:

If you take a look at the school's journey here [since becoming an APPLE school], 90-95% of what has been done over the past few years is very sustainable because it's now part of culture, it's not an add-on... The culture has definitely changed and what is now really engrained in our building won't go away because it's not requiring any additional man-power because it's more of a mind-set.

(School A, P3)

3.3.1 APPLE Schools look different

3.3.1.1 *Physical spaces*

Participants reported changes to the way physical spaces were both used and configured to “*make room for wellness*” and facilitate health promoting activities (i.e., healthy eating, physical activity, positive mental health). These changes were viewed by participants as demonstrating the importance of APPLE Schools and how it was a priority. Examples of changes included the reconfiguration of spaces for physical activity or eating areas, re-purposed hallways to promote fun movement, a re-envisioned outdoor courtyard, increased use of an outdoor

classroom, flexible seating in classrooms to encourage movement (i.e., standing/walking desks), and indoor tower gardens in classrooms. During the walking interviews, School Health Champions indicated many of the changes to physical spaces did not cost money. Rather, changes were as simple as shifting things around to create new opportunities (e.g., moving stored furniture to create physical activity space). School Health Champions and staff highlighted the importance of having dedicated physical space in the school to promote wellbeing. School Health Champions and staff remarked that having these spaces made staff and students more aware of CSH and provided a physical reminder to keep physical activity at the forefront of their minds and recognize the benefits to students' learning.

3.3.1.2 Healthy food

Regarding food sold and served in the school, participants stated there are now more healthy options available. For example, in one school canteen, a School Health Champion reported changes were made to decrease availability of less nutritious options: *“Things super high in sodium and super high in sugar we did get rid of”* (School B, P5). Importantly, these changes were often being implemented in the absence of policy changes. To support water consumption, many schools applied for grants for water bottle filling stations, which were extremely popular amongst the students. One administrator shared:

This was a school where pop, like Coke and Pepsi, everyone had them, every kid...the best thing we got was an ice maker...kids drink gallons and gallons of water now. It's been a big success, almost nobody brings pop. I think we made a positive change. You do see the difference in behaviour. (School C, P14)

Schools even found opportunities to change the focus of celebrations away from food altogether *“we try really, really hard for them not to be food-centered and for them to be more*

activity-centered and movement-based” (School D, P16). Participants also stated that the culture shift to healthy eating was found to extend beyond the students to the parents. One example was Halloween:

In previous times, the tables in the classrooms have been filled with sweets and all of the treats. This year, in most classes, there was very few and it was healthy treats like vegetables and fruits. A real shift in what the parents were bringing.

(School A, P2)

3.3.1.3 Physical activity

Prioritization of physical activity also occurred in all schools, and staff felt movement helped with student concentration and behaviour. Prior to APPLE Schools, recess was often withheld as a punishment. However, in all schools recess became a key focus. In one school, a teacher commented that:

The philosophy of indoor recess² has changed... [we offer] at least one option for physical activity. We used to have a movie and we got rid of that. The kids love it, recess time, if it’s an indoor cold recess, we get at least 50 kids. (School A, P1)

Teacher made shifts more frequently to incorporate movement breaks into the student’s schedules. Staff members also shared the school environment feels different as *“the kids have energy and the kids are moving and you walk through the hallways when class is in session and kids aren’t sitting in their desks”* (School D, P16). One staff added *“We’ve done a shift too at our assemblies, it used to be more of a ‘sit and get’ and now movement is involved”* (School A, P2). Some schools began to offer physical education classes five days a week or added dedicated

² Indoor recess is common in Canada when the weather is too cold to play outside, and children stay indoors where they may engage in more sedentary behaviours.

wellness time during the school day to promote mental health (e.g., breathing, resiliency, growth mindset lessons).

3.3.2 APPLE Schools builds champions

The APPLE Schools approach means listening and integrating the perspectives of the school and broader community, including students, staff, administrators, parents, Elders, and the community members. An assistant principal noted this was key by saying:

Making sure that it's not a select group of people's voices that is being heard but it's everyone's voice being heard. I think it's easy to make changes when you have a set of like-minded people but then sometimes those changes are harder to sustain when you haven't had a whole community approach to it. You can light a fire and a passion for a whole community if you listen to your whole community.

(School A, P4)

3.3.2.1 Teachers and staff

The APPLE Schools philosophy extended to other staff in the school beyond the School Health Champion and over time other staff became leaders. As one teacher noted: *"The APPLE program has created a lot more opportunities for us [teachers] to investigate this kind of thing...in the past I didn't think about it...it started to become embedded"* (School B, P11). A School Health Champion recognized staff changes that were occurring in the school, as seen by the difference in food brought in: *"we also realized that what we do, the kids see what we do. So, we also try to emulate that in here"* (School D, P16). CSH even became part of some teachers' professional growth plans as indicated by one participant: *"My professional growth plan for me this year as a teacher is to learn more about DPA [daily physical activity] and incorporate it*

into my classroom.” (School A, P1). School Health Champions mentioned that the help of other staff was extremely important:

When we started [as an] APPLE school, the whole school’s philosophy continued to shift so it’s nice for me to be able to step away from that facilitator role and see there’s still people driving positive, healthy change and taking that message of ‘we’re an APPLE school’ and still pushing it forward. (School A, P1)

3.3.2.2 Administration

Positive administrator support was mentioned by staff and School Health Champions as extremely beneficial for implementation. Administrators helped delegate tasks to other staff/volunteer groups because APPLE Schools was not viewed as an add-on, but rather part of the school philosophy that the administration supported. Supportive administrators also helped in terms of allocation of resources, including financial resources, to continue to support a healthy school culture. For example, School B prioritized daily fruit baskets because they recognized the popularity, need, and health benefits for the students. The administrator noted:

I now have to look creatively how do I now structure this thing inside our school so that we are still going to continue to do this without the dollars to back it...that's why the partnership with [local grocery stores], and the food bank is huge. (School B, P12)

3.3.2.3 Students and parents

Participants from all five schools noted that students’ enthusiasm about APPLE Schools supported changes in both the school and home environments. A key factor to help facilitate sustained change was leadership from the students who had a voice in leading initiatives. In School E, student leadership groups were given responsibilities of choosing healthy school-wide

rewards that included activities such as extra recess, extra physical education, and outdoor reading classes. Both administrators and staff relayed that students were sharing messaging related to APPLE Schools at home. One School Health Champion reflected:

Now the kids are teaching parents...from the taste testing to the walking challenge to the number of steps we should be getting today, all that information kids share. They are just at that age, it's a good time to make changes and they are taking that information home. (School A, P3)

Further, changes were noted to parents' behaviour to support school-based health promotion. It was noted *"kids were taking the recipes from school and bringing them home and then we were having parents send them in for the class celebrations around Halloween time"* (School E, P19).

3.3.3 APPLE Schools builds community partnerships

Participants identified that APPLE Schools supported the development of long-term partnerships in the community. As one staff member stated:

When you are identified as an APPLE school, it gives you a certain amount of credibility, it's easier to get funding for nutrition, for physical activity, because they know you are not going to take it and go have a pizza party. (School C, P14)

Forging partnerships with community organizations to support the delivery of APPLE Schools was key for the schools, as these partnerships were instrumental in providing resources and financial support, and ultimately supported sustainability. Partnerships eased the amount of work required by the School Health Champion and was seen as a mitigation strategy to ensure sustainability if key champions left. One School Health Champion described how being an

APPLE School supported a partnership with a local organic ranch that they felt otherwise would have not existed:

[The owner of the ranch] appreciated the philosophy and what we were trying to do, hence her sitting on our core committee and bringing that partnership to us. So, had we not been an APPLE school and been exposed to the concept of taste testing, that partnership probably wouldn't exist truthfully. It's a win/win for them too, they run out of our local farmers market on a weekly basis and a lot of times the kids are coming with their parents to the farmers market, and they are like 'oh mom and dad, we tried this, this is really good. (School A, P1)

However, the unique context of all five schools meant forging long-term partnerships could be challenging. School Health Champions and administrators noted challenges securing supports beyond year-to-year funding; specifically, due to the boom/bust nature of the oil industry, which affected all school communities. They also emphasized it was a critical time in which partnerships were needed; students were showing up to school hungry as the impact of the recession was felt at home. As a result of ongoing long-term partnerships in the community, some schools worked with local food banks. One school established a Food Recovery program where the school, grocery stores, and food bank partnered in order to provide meals for the high number of students that were coming to school without food. The Program even provided extra food to be sent home to families on a weekly basis or shared within the community.

Changes to the types of food being donated by partners also occurred. One School Health Champion shared how the partnership they had created with a local grocery store owner has changed over time:

Now she's recognizing that we're asking for healthy options, so she'll ask instead 'do you want bananas and apples?' for our funding again this year. Or 'would you like us to donate the carrots and the snap peas for your welcome back BBQ?'

(School E, P19)

Partnerships were also formed across school communities and in early education and afterschool care settings. Since becoming an APPLE school, one school thought of a creative approach for their hot lunch program – in addition to working with a local dietitian, they formed a partnership with the local high school. High school students received credit to prepare food for students and staff at the elementary school. The School Health Champion commented on the success of this partnership saying:

This partnership piece is very creative because had this been put out to private tender, we probably couldn't afford as much, and the quality of the food would be lower because we would be paying higher rates...[We] worked with an Alberta Health Services dietitian to plan menus. It's getting us to have those conversations, we could get better quality for the same amount of money. (School A, P1)

One community created partnerships with restaurants as hot lunch vendors. These partnerships worked to ensure the food provided met health guidelines *"because our schools here are APPLE Schools, the restaurants and the community have kind of needed to adapt and modify their menu items to meet our needs"* (School E, P19).

3.3.4 APPLE Schools honours community culture

3.3.4.1 Historical context

It was recognized that APPLE Schools worked in concert with the unique cultures in the school community. More specifically, consideration of historical context was seen as imperative. The legacy of residential schools has an impact on Indigenous families' perception of schools, including the lasting effects of colonization and intergenerational trauma (Truth and Reconciliation Commission of Canada, 2015). One School Health Champion recognized this historical context and wanted to “*engage our parents and take away that stigma of school being a bad place*” (School A, P1). They organized family game nights after school hours:

Where there's no expectation on the parent to be nothing but an engaged parent playing with their kids...it gives the school a different vibe. I know we've had a lot of different parents come to those family games nights that wouldn't maybe necessarily go to other places in the community, so I think that's probably a big win...That parent engagement piece that we were kind of missing before [becoming an APPLE school]. (School A, P1)

One administrator shared a similar sentiment:

It's a matter of making sure that the families are welcome in the school. Our vision is that we want the school to be a place where kids want to be, where parents want to send their kids. At least once a month there's an opportunity for families to come into the school. That's all about being supportive of families and families supporting schools all [becoming] part of one community. It's all about wellness. About being, feeling belonging. (School E, P20)

The historical and community context influenced how APPLE Schools was approached. School C recognized the unique needs of the students (i.e., high addiction rates of parents in the community) and the impact of intergenerational trauma. Because of this, mental health and wholistic wellness was prioritized by the principal and included a professional development session for staff on implementation of the Circle of Courage.³ Increased physical activity was also emphasized because of the connection between trauma and behaviour (trauma is manifested within the behaviour); students were encouraged to channel/release their energy into physical activity. Recognition of historical context was viewed as essential to implementation and sustainability of APPLE Schools, with the understanding that “*changes take time, relationships need to be built, [for example], connections need to be made with the Elders*” (School C, P14). Elder involvement was seen as integral, to support the school community and broader community heal from the devastating effects of colonization. The school administrator noted that an important goal was to:

Host an Elders circle, invite Elders in for an Elders lunch... invite the community to cook a community meal in the school. Elders and community members could come in and prepare a meal...it brings the community closer to the school, it brings the school closer to itself and everyone appreciates it more. (School C, P14)

For these schools, involvement of the broader community is intimately tied with the school’s APPLE initiatives. Also, understanding community context, including economic drivers, developed realistic expectations of the impact of APPLE Schools.

³ The Circle of Courage is a strengths-based model of youth development based on the principles of belonging, mastery, independence, and generosity and recognizes the impact of generational trauma.

3.3.4.2 Economic climate surrounding the school

For all schools it was found that due to the predominance of the oil industry, the population was more transient and some areas had a shadow population⁴ as high as 25,000 workers (Government of Alberta, 2019). The communities were greatly affected by the boom/bust nature of the oil industry, resulting in dramatic swings in community-level support. Because of this phenomenon, the schools experienced high staff turn-over and/or a shortage of staff, which was mentioned as a challenge when adopting APPLE Schools. During a boom, staffing was challenging, but yet financial resources were plentiful. In regard to funding during a boom, companies were forthcoming with large financial donations. Conversely, during an economic downturn, a principal mentioned:

Since we've been an APPLE school, the economy's become tougher and tougher and it's crashed. So, we still have a very generous community but it's much more difficult for them to give now. (School A, P3)

As well, the School Health Champion had to spend more time soliciting for donations and/or writing grants rather than focusing on initiatives and projects in the school. Participants from schools located in more remote regions mentioned the high cost of food and goods (relative to other parts of the province) as an important consideration. However, access to healthy food remained a priority in all schools given that the economic downturn would be felt by students at home – meaning limited access to healthy food at home. One School Health Champion noted *“fruit is so expensive and that's why these kids come and get it [at school]. They don't get it at home”* (School B, P5).

⁴ A shadow population is temporary residents who are employed in the area but only live in the area during periods of work.

3.3.4.3 Connection to the community

Having a School Health Champion that was from the community allowed foundational connections and relationships to have already formed, making change efforts and partnerships easier to navigate. As well, local School Health Champions were viewed to have invaluable knowledge on the geographical, historical, and sociocultural considerations of the broader community. As stated by one School Health Champion: *“I wasn’t some outside person coming in trying to put all this stuff in. If you can get someone that’s in there [in the community] you are going to have way more success”* (School B, P5). An administrator added: *“You have to have someone who is known and passionate and who has that drive to go the extra mile...those key people connected to community...they also drive others by how passionate they are”* (School A, P4).

3.4 Discussion

CSH recognizes the interconnected domains of school, home, and community which are all integral to children’s health (Epstein, 2011). Successful health promotion efforts are multifaceted and target all areas (Stewart-Brown, 2006). The current study explored the influence of APPLE Schools on the school and community environments from the perspectives of school staff. This study demonstrated that CSH impacts both the school and community environments and reinforced that health promotion efforts are strengthened by closely working together.

Based on the components of CSH, it was anticipated that changes to the social and physical environment of the school would occur (Joint Consortium for School Health, 2021). Findings from this study were supportive of the CSH model and indicated changes did occur to both the social and physical environment, including dedicated wellness time and reconfiguring

physical spaces. As well, healthier foods were served on an everyday basis. We found that all schools offered healthy food programs, which is consistent with prior research conducted by Gillies et al. that determined interventions tend to implement a food program and promote healthy eating messages when addressing the social and physical environment of a school (Gillies et al., 2020). Additionally, emotional wellness was fostered in the environment of the school and created positive associations with the school. Recent research has highlighted the importance of positive school perceptions for students' health and academic achievement (Daily et al., 2020).

Involving the school community empowered leaders to take on responsibilities to facilitate change. Beyond administrative support, which has been noted as fundamental to direct resources to health promotion efforts (Roberts et al., 2016; Storey et al., 2016), many school community partners (e.g., teachers, staff, students) were acting as health champions. This finding is in alignment with using a bottom-up approach to identify strengths and needs and involve staff in a positive manner (Emily et al., 2018). The dedicated time of the School Health Facilitator role in APPLE Schools fosters relationships within and outside the school to support CSH implementation. Engagement of those within the school community echoes evidence found in the literature of the importance of partner buy-in, particularly among principals, teachers, and students (Stolp et al., 2015). The level of buy-in can differ based on the level of partner involvement and is not an indication to the centrality to CSH. In our research, buy-in within the school community was shown by the leadership taken by staff and students. Further, it has been established students have a crucial role to act as changemakers (Gadhoke et al., 2015; McKernan et al., 2019). Our research exemplified the role of students as leaders of health promoting change both in and outside the school. Most recently, health behaviours learned at school have been

shown extend to the home environment of children (McKernan et al., 2019). Our research builds on these findings and has shown how students foster connections beyond the school in the home and community.

A reciprocal relationship can be formed between schools and communities; as the community recognizes and supports school-based health initiatives, schools also offer opportunities to support the community in return. Notably, prior research done by our team identified that community support is a core condition for the implementation of CSH (Storey et al., 2016). Research on the development and sustainability of CSH has found partnerships provide additional resources, including financial, human, and physical resources, to enhance and support schools' capacity to implement health promoting initiatives (Gugglberger & Dür, 2011; Stolp et al., 2015). Our research found that there are different needs and complex contextual factors that rural or remote schools face when implementing a CSH approach. This was also demonstrated by Torres and Simovska where it was found particularly among small, rural schools, parental and community involvement is crucial to address the needs of the school (Torres & Simovska, 2017). The results supported this evidence as the development of partnerships was viewed as critical to long-term sustainability.

Lastly, we found community culture has significant impact on the context of the school environment, and thus was seen to impact implementation. The legacy of residential schools has a lasting impact on Indigenous families' perceptions of school (Fournier et al., 2019). Participants indicated that to be successful, implementation needed to recognize community context – working with the local strengths and needs of that community. It was foundational that the School Health Champion was a community member who had an in-depth understanding of community context. A School Health Champion with prior connection to the community, is able

to build off their existing relationships, with established trust, and spend less time navigating the needs of the school community (Storey et al., 2016). These findings reinforce evidence in the literature that has shown a one-size-fits-all approach to implementation does not lead to an intervention that will be impactful or sustained (Durlak & DuPre, 2008; Emily et al., 2018). The results of the study show the school is impacted by community context and promotes change by building on the strengths and needs of the school environment.

3.4.1 Strengths and limitations

The use of multiple data generation strategies provided a clear description of each school setting and contextualized findings within each community. Purposeful selection of schools allowed researchers to gain in-depth information at each school, which is well-suited for qualitative inquiry. Further, a diversity of school staff perspectives within the school were captured through the snowball sampling approach. Thus, through adequate sampling, data saturation, methodological coherence, and investigator responsiveness, methodological rigour was ensured (Morse et al., 2002). Additionally, by using the walking interview approach, participants' interpretations of settings and events were provided at the time of data generation, which reduced researcher bias (Kusenbach, 2003). Despite these strengths, there are some study limitations that should be acknowledged. The walking interviews occurred on a single day within each school and participation was limited to staff who had the time in their schedule or were selected by the School Health Champion. Therefore, it is possible a response bias may be due to the availability of staff or a selection bias by capturing the perspectives of only those who supported CSH. Observations over multiple days would have limited this and any observer bias of the researchers due to a limited time in each school. Further, the community partner

perspective is valuable to consider and although was not included in this study, is a part of our forthcoming research.

3.4.2 Conclusions

In this research, school staff identified important ways in which school-based health promotion influences environments both within and beyond school walls. CSH interventions work uniquely within schools to change the school environment and can extend outside of the school by impacting change in communities where schools are located. This research furthers knowledge of the effectiveness of CSH interventions and provides evidence to support school-based health promotion through school and community relationships. Overall, more research is needed exploring community support of CSH implementation and the impact of CSH on community environments. We intend to explore this from the perspectives of community partners to further confirm the impact seen in our cases. Having both school and community perspectives will be important to show the full implementation of CSH in school and community environments.

CHAPTER 4: “IT TRICKLES INTO THE COMMUNITY”: A CASE STUDY OF THE TRANSFER OF HEALTH PROMOTING PRACTICES FROM SCHOOL TO COMMUNITY IN CANADA

Klassen, D., Montemurro, G., Flynn, J., Raine, K., & Storey, K. (2024). “It trickles into the community”: A case study of the transfer of health promoting practices from school to community in Canada. *SSM - Qualitative Research in Health*, 100427. <https://doi.org/10.1016/j.ssmqr.2024.100427>

4.1 Background

The settings in which people live, work, learn, and play can drastically impact health behaviours. Across neighbourhoods, workplaces, healthcare settings and schools, health equity can be improved through environmental and structural changes that support the everyday living conditions where people spend their time (Newman et al., 2015). For children and youth, schools are an ideal setting to promote health as schools offer time and space during the day dedicated toward development and learning (Jourdan et al., 2021). Healthy children are stronger learners at school, and health and education closely support each other (Degoy & Olmos, 2020). Successful school-based health promoting interventions take a settings approach to promote wholistic health (Stewart-Brown, 2006).

In Canada, one such settings-based approach is Comprehensive School Health (CSH). The evidence-based approach of CSH is built on the Ottawa Charter for Health Promotion (World Health Organization, 1986), and aims to create a sustainable, health promoting school culture through changes to the following components: 1) teaching and learning; 2) physical and social environment; 3) policies; and 4) partnerships and services (Joint Consortium for School Health, 2016). The CSH approach has had success at improving both health (Fung et al., 2012; Vander Ploeg et al., 2014) and academic outcomes in students (Faught, Ekwaru, et al., 2017). For

a whole school approach, such as CSH, to truly have a lasting impact on children's health behaviours and the settings where children spend their time, implementation needs to embody all components outlined in the framework and not be reduced to individual activities (Koh & Askill-Williams, 2021). Several guidance documents exist to support the implementation process (Canadian Healthy Schools Alliance, 2021; Veugelers et al., 2023) recognizing that creating a healthy school culture is not a stepwise or one-size-fits-all approach (Keshavarz et al., 2010) due to the uniqueness of each school and the influence of the context external to the school (Bartelink et al., 2019; Preiser et al., 2014). As such, school autonomy is an essential condition for CSH implementation, and it is important that schools adopt health promoting practices that uniquely fit the strengths and needs of the school community (Neely et al., 2020; Sobierajski et al., 2022; Storey et al., 2016). Schools commonly undergo continuous change and with many people and structures (e.g., schedules, curriculum, policies), schools can be seen as social complex adaptive systems (Keshavarz et al., 2010; Rosas, 2017). Creating change in schools through capacity building, engagement, culture, policies, and partnerships (though not an exhaustive list) (Koh & Askill-Williams, 2021), closely mirrors many of the components that make up successful implementation of CSH, thus CSH lends itself to working in an adaptive system. When schools continually adapt, this can lead to sustainability of an intervention over time (Koh & Askill-Williams, 2021). Sustainability of implementation efforts requires a strong connection among intervention partners, and a responsive relationship to contextual factors (Moullin et al., 2019).

Both the inner setting of the school and outer setting around the school must be considered, as the school cannot be separated from the broader community it is nested within (Keshavarz et al., 2010; Rosas, 2017). This follows with Epstein's view on the interconnection

between the school, home, and community environments (Epstein, 1995). An important factor of implementation when considering how to connect the inner and outer settings of an intervention (Moullin et al., 2019), are ‘partnerships and services’ (Joint Consortium for School Health, 2016) as the broader community outside the school offers many opportunities to support the school in ways that fit each local context. In the CSH approach, partnerships are defined as “connections between the school and families, supportive working relationships among schools and other community organizations, and/or health, education, and other sectors working together to advance school health” (Joint Consortium for School Health, 2021, p. 2). Connecting with the broader community has benefits for schools; for example, provision of health services (Preiser et al., 2014), planning of physical activity lessons or nutritional meal plans (Coppola et al., 2019), and acquisition of funding (Coppola et al., 2019). Existing research on the importance of community partnerships to support CSH through the means of expertise and resources, has focused largely on the school and school district stakeholder’s perspectives (Montemurro et al., 2023; Neely et al., 2020).

When CSH is implemented as intended (i.e., all of the CSH components are addressed) (Joint Consortium for School Health, 2016) and the essential conditions of implementation (Storey et al., 2016) are met and endure over time, impacts ‘should’ reach beyond the school to the home and community. This aligns with the Diffusion of Innovations theory (Rogers, 2003), and the process of diffusion where new practices and ideas are adopted over time as information is exchanged between members of a social system. Research evidence suggests that in general, schools impact the community, as seen in examples of the transfer of environmental stewardship practices (Vaughan et al., 2003) and smoking cessation (Hazinski et al., 1995). However, the reach of the CSH approach is only beginning to be understood. Interventions taking a CSH

approach have focused on short term measurable outcomes in the school environment itself or outcomes among students, such as physical activity levels (Vander Ploeg et al., 2014), and fruit and vegetable consumption (Fung et al., 2012), rather than diffuse changes in the community. McKernan et al. (2019) showed the extent to which there is a connection between the school and home as children influence health promoting changes in the home by sharing health related knowledge to family members. Yet the community impact of whole school interventions (i.e., the CSH approach) is rarely reported in literature (Jourdan et al., 2016). Furthermore, the community perspective has not been captured and outcomes of community involvement are cited as an area where more research is needed (Langford et al., 2017).

The CSH intervention, APPLE Schools (A Project Promoting healthy Living for Everyone in Schools), was the focus of this research. The purpose of this study was to determine if and how the intervention, APPLE Schools, has impacted the community environment.

4.1.1 APPLE Schools Intervention

APPLE Schools (A Project Promoting healthy Living for Everyone in Schools) is an evidence-based, innovative, and globally recognized school-focused health promotion intervention that takes a CSH approach that exists in 97 school communities in Alberta, British Columbia, Manitoba, and the Northwest Territories (APPLE Schools, 2021a) and impacts the lives of more than 30,000 Canadian students annually⁵. Across regions, APPLE is delivered in partnership with schools, school districts, as well as partners within public health authorities working with schools through the CSH approach. APPLE Schools aims to improve health behaviours in school-aged children and youth by improving healthy eating, physical activity, and mental health habits (APPLE Schools, 2021a). APPLE Schools is a non-profit organization that

⁵ At the time of publication, this was the reported reach of APPLE Schools. It is currently implemented in 100 school communities and impacts the lives of more than 33,000 students annually.

receives donations to support CSH implementation in schools that demonstrate readiness (e.g., administrative support is in place) and apply to take part in the intervention when funding is available. The implementation of APPLE Schools in each school is broadly supported by a project team comprised of the APPLE Schools executive director, implementation manager, and School Health Mentors. School Health Mentors bridge the work between the organization of APPLE Schools to the work at the school-level. Within each school is a School Health Facilitator role, which is a position funded by APPLE Schools (typically held by a school staff member) for three years. School Health Facilitators transition to a School Health Champion role (i.e., a volunteer role) that stays in place after the third year of implementation. Both Facilitators and Champions lead the advancement of school health initiatives with the support of APPLE Schools through funding, training, mentorship, and research. This includes initiatives to gain buy-in from other school staff, share classroom activities, foster student leadership, create healthy spaces, and change school policies.

4.2 Methodology

A participatory, community-engaged approach informed by a constructivist paradigm was used for this study. Following the constructivist approach, researchers interpret the setting through interactions with participants, and gain an understanding of a context through a dynamic representation considering many perspectives (Lincoln & Guba, 2013). A subjectivist epistemology was employed in line with the participatory nature of the research, which promotes a social construction of knowledge as different lived experiences of participants are revealed and are then interpreted by the researcher (Lincoln & Guba, 2013).

4.2.1 Research approach and methods

This research used an instrumental case study approach (Stake, 1995). The participatory nature of the research involved APPLE Schools in the research method design, data generation, and analysis and relied on their experiential knowledge with schools. One community was determined to be a suitable case to understand the research objective and provide insight into the phenomenon of interest in other schools and communities. An instrumental case study was desirable for two reasons: 1) it allowed a phenomenon to be explored within the context of implementation and 2) APPLE Schools indicated this single case would be the most beneficial to gain further understanding about their implementation process. The method of focused ethnography, a study of culture within a specific organization or context (Knoblauch, 2005), was used to guide data generation and analysis. This suited the need to gain an in-depth understanding of a specific culture, in this case the APPLE Schools' health promoting culture, within a distinct community. As part of this method, the cultural, historical, political, and economical spheres of this distinct context would be captured (Higginbottom et al., 2013). This research examined how the health promoting school culture of APPLE Schools extends beyond the school and how the broader community participates in the culture of APPLE Schools.

4.2.2 Case details

4.2.2.1 Case selection

This case was identified throughout close consultations with the APPLE Schools project team. One city in the province of Alberta was chosen for the case study as there was extensive involvement of both school jurisdictions. As a result of community-wide buy-in, all 21 elementary schools (including both public and Catholic school districts) in the city were APPLE Schools. Each of the elementary schools joined APPLE Schools at various times over a ten-year

period, with intervention delivery ranging between 2 to 10 years. Four schools adopted the intervention ten years ago (APPLE Schools, 2011), 15 schools between 2011 and 2017, and the most recent schools (n=2) adopted the intervention in 2019 (APPLE Schools, 2018). The bounds of the case study, and what the researchers defined as the community environment, included the physical bounds of the city with a population of 72, 056, and the surrounding service area supported by the city (including nine rural communities) which houses a large shadow population of temporary workers. For this research, the term “community environment” was kept broad to encompass any potential changes that would be felt in the community.

4.2.2.2 Participants

The researchers had no pre-existing expectations of community impact. In alignment with the method of focused ethnography, key informants and a purposeful sampling approach were used (Higginbottom et al., 2013). Key informants were school staff that identified the initial sample of community partners. This was done in prior research conducted by our team. Community partners were identified as a resident of the community in the geographical area of the case study. School staff in APPLE schools identified key community partners with their schools, resulting in an initial sample of 16 individuals plus School Health Mentors (n=2). Of the 18 individuals identified, 11 took part in the study. Subsequently, a snowball sampling approach was used as the second recruitment strategy. Participants of the initial sample were asked to identify others who were impacted by APPLE Schools, and an additional 18 community partners were identified and contacted. Six additional community partners agreed to participate in interviews resulting in total of 17 participants (12 female; 2 male; 1 non-binary; 2 non-disclosed). Participant ages ranged from 26-62 (*M* age 39 years). As well, the years that participants lived in the community varied between 4-37 years (*M* years = 18). Participants

included community partners who were also parents of children that attended APPLE Schools (n=9)⁶. Community partners included diverse sectors: recreation and leisure, health services, food services, and non-profit organizations.

4.2.2.3 Ethics

Ethical approval for this research was granted through the University of Alberta Human Research Ethics Board (Pro00035108). All participants provided verbal consent during the interviews.

4.2.3 Data generating strategies

Consistent with focused ethnography, data were generated through semi-structured telephone interviews and document analysis. Semi-structured interviews were conducted with an interview guide of several open-ended questions that were co-developed with APPLE Schools implementation staff (See Appendix A). Interviews ranged between 30-58 minutes and were on average 40 minutes. Introductory questions were asked to gain demographic information and were included in the interview guide to determine the role and connections of interviewees within the community (i.e., parent, business owner, time as a resident of the community). These questions were followed by open-ended questions designed to better understand how the community is unique in the process of adopting APPLE, how schools are perceived in the community, how the community is impacted by APPLE Schools, and how the community supports school-based health promotion. A modified, short-version interview guide was created which offered an accessible option for community partners (n=2) who were not able to complete a full interview due to time constraints. It was our preference to schedule in-depth interviews

⁶ The researchers chose not to separate or remove parents from the sample. In fact, prior CSH research has suggested a broadened definition of community partners including parents and families is needed (Neely et al., 2020).

with all participants, but flexibility was required within this community-engaged research. Many participants recommended in the snowball sampling method were local business owners with limited availability in their schedules, thus, we worked with participants to accommodate their schedules and adapted the interview guide to ensure they could still meaningfully participate. We included these interviews in our dataset to honour participant time, regardless of interview length. These individuals are included in the final sample of 17 and these interviews ranged from 4-6 minutes. While short, these interviews were successful in generating quality data as they were focused and centered on three critical questions identified and adapted in a modified short version of the interview guide (see Appendix A).

Contextual information from documents supplemented data generated in interviews with community partners. This data assisted in providing a historical account (10+ years) of APPLE Schools, which helped to detail APPLE Schools' expansion in the community over time. Further, this data provided an understanding of the cultural, economic, and political context that currently supports healthy school communities. The document scan involved a manual search of school district websites, school websites, school social media accounts (i.e., Twitter, Instagram, Facebook), APPLE Schools website, local newspapers, and municipal government websites. See Table 2 for the list of documents. The scope of the search included active documents (most current) and historical documents (2011-present) that specifically mentioned "APPLE Schools", "school/child health", or aspects of a "healthy school community". Additionally, documents that addressed a topic that is directly related to the health or wellness of the school community (e.g., health behaviours, health promoting environments) were included. Data gathered from documents was stored in a data matrix in Excel. The documents gathered allowed interview data to be contextualized and helped to verify findings (Bowen, 2009).

Table 2. Documents included in the document analysis

Document type (included in the scan)	Number of documents
School district Healthy School policies	2
APPLE Schools annual reports	13
Local newspaper articles	4
Census data	2
Municipal government guidance documents and plans	3

4.2.4 Data analysis and rigour

All interviews for this study were audio-recorded and transcribed verbatim. Data analysis was inductive and iterative and began once the first data were generated and continued throughout data generation. To promote an inductive analysis, no a-priori frameworks were applied. During analysis, transcripts and documents were compared to verify the information. Reflexive thematic analysis was used and followed the steps outlined by Braun and Clarke (2019): 1) data familiarisation and writing familiarisation notes; 2) systematic data coding; 3) generating initial themes from coded and collated data; 4) developing and reviewing themes; 5) refining, defining and naming themes; and 6) writing the report. The researcher who led the interviews also transcribed interviews. This served as the initial step of data analysis and notes were taken as ideas and data linkages started to occur. Next, the researcher conducted systematic coding of all transcripts. Codes and categories were developed, organized, and given a description using NVivo analytic software (Q. S. R. International, 2021). After the first round of systematic coding, the researcher reviewed the code and category descriptions and reassessed the similarities and relevance to the research objective. Some codes were removed, and others were condensed into existing categories. Initial themes were then drafted, and the researcher assessed the fit of categories in relation to the themes. After reflection, themes were further modified, and lastly a narrative description and name were created for each theme. Throughout analysis,

transcripts and documents collected in NVivo were compared to verify the information.

Additionally, memoing, the process of recording ideas, reflections and key decisions (Mayan, 2009) was used to record ideas, reflections and key decisions made during interviews, document analysis, and thematic analysis.

To ensure methodological rigour, Lincoln and Guba's (1985) criteria for trustworthiness guided the research. Credibility, the accuracy of data representation, was ensured through researcher reflexivity including peer debriefing amongst researchers throughout data generation and analysis, as well as triangulation of data. To promote transferability, purposeful sampling (including adequate sampling reach) and multiple data sources were used to situate contextual knowledge for the case. Methodological coherence and the use of an audit trail further ensured dependability with a record of decisions made (including how and why). Lastly, confirmability, logical findings grounded in data, was supported by the iterative data analysis process, peer debriefing, triangulation, and an audit trail.

4.2.5 Positionality

This research is part of a doctoral student's larger qualitative research study examining school and community connections in CSH interventions and reflects their broader interest in integrating education and health sectors to improve the health and wellbeing of children. This period of study and prolonged engagement in CSH implementation research ensured a rich foundational understanding of implementation processes and informed data analysis. The first author, a white Canadian female, conducted interviews and led data analysis. This individual was an outsider to the community (though lived in the same province), which may have provided enough separation to discuss experiences with a degree of confidentiality, or it may have influenced the level of trust felt by participants and the extent they spoke freely during

interviews. The interviewer's gender may have also influenced a difference in responses between genders with females perhaps feeling more comfortable to participate. The researcher's own interpretations of the data and identified themes are the result of their relationship to the data.

4.3 Results

In this study, researchers identified three main themes that described the impact of APPLE Schools on the community environment from the perspective of community partners. It was clear that a catalyst of change needed to occur before the impact of change was felt by the community. Therefore, the themes represented a stepped approach that built off each other: 1) Foundation: establishes a healthy school culture; 2) Action: tying the work of schools and communities together; and 3) Impact: changes in school practices ripple out to promote health in the community. Underlying all the themes was participants' perspective of the positive impact of APPLE Schools. Efforts to promote health using a strengths-based approach created better opportunities and support for children to thrive. This was seen as doing something good in the community and the positivity was a grounding element of what generated community support. As one participant shared, *"the positivity is the biggest reason that community partnerships see the success and want to work with the program."* (P17) The results are visually represented in Figure 1 and include sub-themes from each of the three main themes.

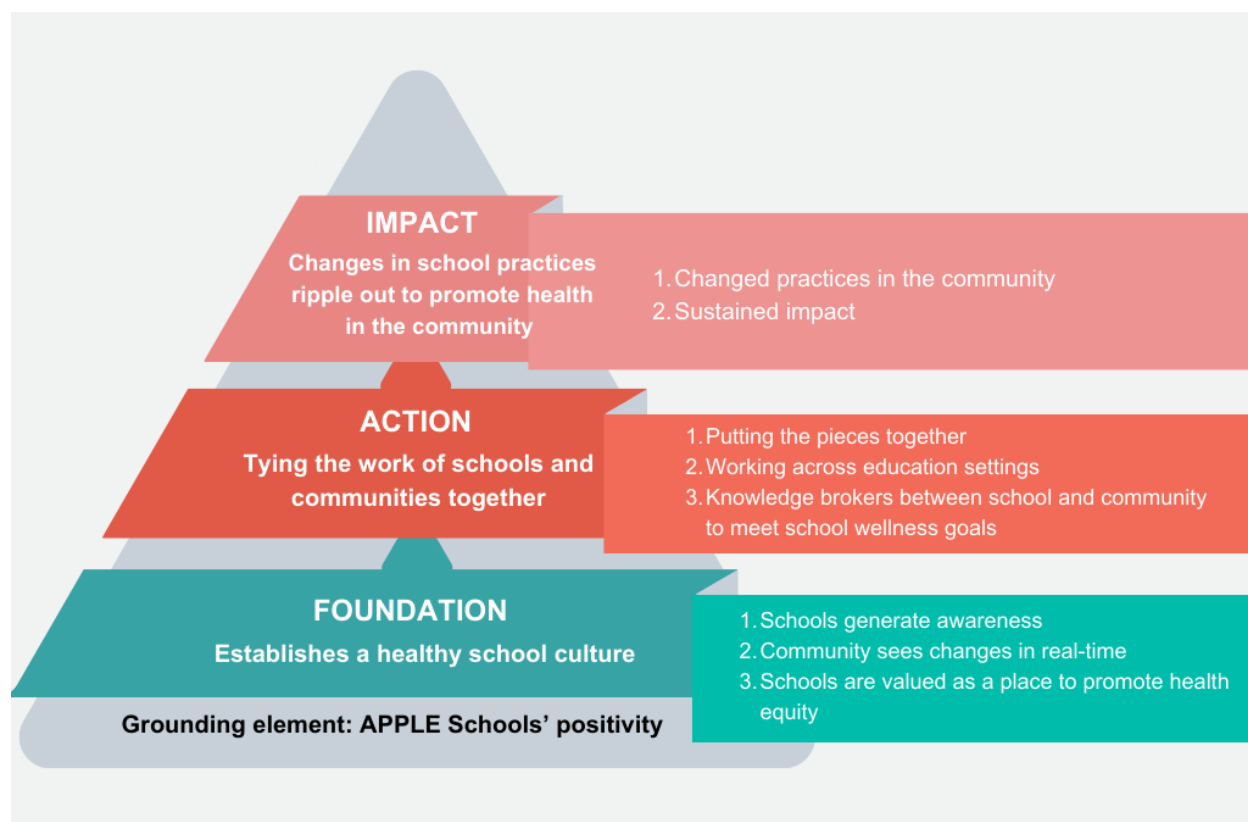


Figure 1. How APPLE Schools has impacted the community environment. A visual of the themes as they are related through a stepped approach

4.3.1 Foundation: establishes a healthy school culture

APPLE Schools promotes healthy children in healthy school communities and these values were communicated and shared with the broader community outside of the school. Three subthemes demonstrated the ways in which APPLE Schools established a healthy school culture.

4.3.1.1 Schools generate awareness

Through ongoing communication, participants felt the community became aware of APPLE Schools and what APPLE Schools promoted in schools (i.e., wholistic health supported by the school environment and culture). In part, this awareness was due to the size of the population and the number of students attending school, as described by the child and youth manager of a crisis prevention organization: “*I think it's just become really well known overall,*

just based on the number of kids here. There's a lot of kids here in [the community], which trickles through the community.” (P9) This fostered greater awareness of what was happening within schools and emphasized the importance of taking a CSH approach to the community.

Consistent communication from all schools through school websites and social media channels shared the health promotion activities occurring in schools. The knowledge gained about wholistic health and how wellness was embedded in the school culture was shared from the perspective of a community partner and parent: *“this approach to you know, all these different aspects of health like mental wellbeing, you know, healthy eating and physical activity, it's just really ingrained into the school culture and the school environment. It's seen as a priority.”* (P6) The values of APPLE Schools were perceived as a commonality that was expected in all schools by parents and community partners. This commonality set expectations of what a healthy school community does and what promoting wholistic health looks like.

The more schools that joined APPLE Schools, the greater the support that was received. The momentum of APPLE Schools grew as more people took part and built more excitement around the positivity of the intervention. A superintendent witnessed the growing momentum across school communities and noticed more people wanting to take part. From the school district level, a superintendent said *“I think the community is quite aware of what APPLE Schools is all about. And they might send me an email and say, ‘Hey, can we come into your schools and do this? It fits this piece of APPLE Schools’. So they know. They're looking and seeing how they can align to that or how they do align to that.”* (P8)

4.3.1.2 Community sees changes in real-time

An important part of how APPLE Schools “established a healthy school culture” was allowing community partners to see what a healthy school looked like by visiting an APPLE

School and deepening their engagement to the school. APPLE School staff reported that this was a common practice to invite new and existing partners to schools. As described by one participant: *“Ofentimes potential partners who will work with us, be it a volunteer or if they’ll donate money to the program, they’ll come and they’ll actually do a school tour, just to see what APPLE Schools do and put what we are speaking about to actual practice.”* (P17) This provided an opportunity for connection and a way to show the positive impact of APPLE Schools and show how their contributions made a difference.

Stemming from this knowledge and awareness of health promoting practices in the school, and because community partners were embedded in the schools through regular visits, they noticed differences in the students’ behaviour over time. A community partner leading a basketball program in the school noticed a change in students’ *“confidence and physical activity level [are] probably the two biggest things, but overall general happiness levels in the programs you can see improvements in that.”* (P1) Community partners noted the shift more broadly in the whole school environment that fostered student’s behaviours, noticing changes such as healthy snacks and increased water consumption. One community partner said the biggest shift they noticed was: *“kids drinking water more than I’ve ever seen them drinking water before. You know young kids in grade one and two and stuff like that.”* (P2)

Community partners saw the culture shift that was happening, and seeing positive changes encouraged them to keep connecting to schools and donate time, money, or needed supplies. The close involvement in the school, offered meaningful connection to the school.

4.3.1.3 Schools are valued as a place to promote health equity

Community partners shared how supporting the healthy development of children and instilling optimism and hope for future generations was their motivation to support APPLE

Schools. The early school ages were viewed as a desirable time to enact change to child's health and learning trajectories. A grocery store manager expressed their reason for supporting schools *"We do a lot for the schools...I mean these children are our upcoming generations. You want to support them as much as possible."* (P15) Even companies and organizations outside of the health and wellness sector were willing to get involved and contribute to healthy school efforts. One School Health Mentor shared, *"companies and organizations that aren't directly related to the health and wellness field [car dealerships and oil companies], still value the importance of building that relationship and promoting a healthy environment for the students."* (P17) APPLE Schools culture promoted health equity among children and community partners valued this aspect. Community partners valued doing what was best for children and recognized the importance of creating equitable healthy school communities through a program like APPLE Schools, as shared by the Executive Director of the local food bank:

"I think that overall, if you can continue to have healthy kids, or as healthy as you can get them in school, they're gonna learn better... I think the beauty of something like APPLE Schools to me though is it's a great equalizer at that child level when they are young... if you can get them young in that equalized thing and the kids that don't have get some snacks from the school, so they have the energy to keep up with their friends, the longstanding social impact, I think, and this is my own perspective and anticipation, is that it will break down barriers versus creating them at an early age." (P3)

The work of providing children with equitable opportunities to thrive was not done in isolation but with schools and communities together.

4.3.2 Action: tying the work of schools and communities together

Once the foundation of a healthy school culture was established (theme 1), community partners shared details about the interconnection of health promoting efforts between school and community. Three subthemes describe the action of school and communities working together.

4.3.2.1 Putting the pieces together

A vision of healthy children and youth in the community was held by many and recognized as meaningful work that extended from within the school walls to the whole community. A manager of a youth-focused non-profit organization found similar values in their work: *"it's really nice to see that kind of like reciprocation of like, this is how we build a community. And this is how we help children and youth thrive to be the best that they can."* (P10)

When APPLE Schools took root in the community, it brought many siloed conversations together and fostered collaborations that supported healthy children in healthy schools. A collaborative, The Healthy Schools Initiative, was formed by partners from a variety of sectors including health, municipal government, recreation, education, and non-profits and this group brought APPLE Schools to the conversations happening about children in the community. The regularly scheduled meetings of the Healthy School Initiative were noted by a Health Promotion Facilitator as *"an opportunity for everyone to go around and share what's happening within their area in terms of wellness, whether it's in their organization or in their school, depending on whether you're a community partner, school partner."* (P13) Each partner brought different expertise, prior experience, and community knowledge that combined for a powerful promotion of wholistic health.

School and community collaborations were also bolstered by the support of both public and Catholic school districts. A School Health Mentor reiterated the impact of division-level support:

“Our division is pretty adamant on promoting health and wellness, it was one of our big three goals for a couple of years, along with literacy and numeracy, and healthy schools. So it is valued from the top at the superintendents, as well as something that is very important to promote. So I would say that it was developed in response to working with APPLE Schools, but also from the understanding that health promotion is as important as academics.” (P17)

The school district level commitment to a CSH approach across schools was strengthened by overarching district policies on healthy school environments. Specifically, district level policies related to healthy eating, physical activity and active living, and positive social environments, were identified by the research team during document analysis. Participants referenced these healthy policies or ‘guidelines’ in different school settings (detailed in the next sub-theme) and during community interactions (detailed in the next theme).

4.3.2.2 Working together across education settings

Promoting healthy children and youth across all learning settings ensured that the positive work of APPLE was sustained. At first, APPLE Schools was only in place in elementary schools, but community partners spoke about how practices in APPLE Schools began to spread influence to early learning settings and high schools. These other education settings were not designated APPLE schools, yet these settings ensured their practices were a continuation of the APPLE values and messaging in the elementary school setting.

Early education settings, including preschools and daycares, adopted similar practices to those fostered in APPLE Schools. People noticed how health promotion in schools was already transferring between families and school and home environments but wanted to make this a stronger connection. In preschools and daycares, education was provided to teachers around the values of APPLE Schools (i.e., healthy eating physical activity, mental wellness) and kits were provided to create healthier classroom environments, including games to be active and instructions to teach mental health initiatives.

These changes were further driven and supported by students, teachers, administration, and a superintendent who saw the value of what was happening in elementary schools. Students enjoyed and were advocates for the values of APPLE Schools. Students demonstrated leadership that others noticed, such as the superintendent: *“we have a number of our students that were moving to the high school, and they were like, where's your APPLE team? ...And so they, not all of them, but some of them are like, can we have an APPLE team? Why aren't we following APPLE policy? Why is it different?”* (P8)

High school classes adopted practices seen in APPLE Schools, such as brain breaks, daily physical activity, non-food rewards, and healthy options in vending machines. Specifically, students learning the importance of healthy eating in APPLE schools and continued to make healthy choices at high schools:

“They’re bringing with them that education, and that value of a healthy lifestyle. So even though they’re not going into an APPLE School, the effects of being in an APPLE School is still seen within those schools, and it changes the way those schools operate...the cafeterias in the high schools have all modified their [food choices] cause they realized the kids aren’t buying the foods.” (P17)

A high school teacher shared their motivation to continue APPLE Schools practices in their school as it could be led by students already well versed in making healthy choices:

“we saw the value in it, and the kids were already buying in and coming up to us with these sort of belief systems, if you will. And they were, you know, using the language and asking, you know, for some of these options.” (P11)

4.3.2.3 Knowledge brokers between school and community to meet school wellness goals

Staff in APPLE Schools served as knowledge brokers and brought school and community organizations together which consequently forged partnerships. Within APPLE Schools, School Health Mentors are team leads that work with multiple schools and school authorities to support and facilitate health promotion efforts. This role was highly valued by community partners as it was a major connector to all the schools and deepened the community’s understanding of APPLE Schools. APPLE School Health Mentors and community partners regularly connected which also helped support community businesses as APPLE Schools used the services provided by local businesses in schools.

Small business owners emphasized the importance of the School Health Mentor. For organizations with similar mandates, the alignment of work and values meant partnerships with APPLE Schools were beneficial to their work. A community partner described the focus on health and wellbeing in schools was a strong facilitator for their partnership: *“I think the initiatives of trying to make our youth healthier encouraged these schools to reach out to other institutions that were doing kind of the same type of work. So yeah, I think with the help of APPLE schools, it obviously created more opportunity.”* (P4)

The School Health Mentor had a direct connection to schools in the district and knowledge about school processes and policies, whereas small businesses were either lacking this connection and knowledge or did not have the time to make connections to each school in the community. The School Health Mentors had insight into the structure of the school system and levels of approval to get into schools. With this knowledge, they offered an ability to promote and support small businesses saying:

“There's so many kids here, there's so many schools, there's so many classrooms that [businesses] just don't have the capacity to kind of get all the information out there. So that's where we kind of come in as a supportive organization for the school.” (P16)

APPLE Schools was described as ‘a microphone’ for community businesses and organizations with similar health promotion values (e.g., the local recreation and fitness centre). Because of the close working relationship with APPLE Schools staff, owners of small businesses did not have to spend time connecting with individual schools. One business used this time saved to develop more program options to offer to a greater number of schools, such as dance and yoga, and staff energizers.

Community partners shared the many ways they brought their expertise and offered programs and resources to better support students and staff in their wellness goals. These included programs and resources for movement, nutrition, staff wellbeing, leadership, land-based learning, and mental health. A director of a non-profit shared how their alignment with schools’ goal of mental wellbeing and fostering a welcoming and inclusive environment was a strength: *“we focus a lot on developmental assets of youth, which, obviously schools do as well. So having these connections in the community and being known as a safe, inclusive space gives schools one more resource to be able to direct children to.”* (P10)

The wholistic approach to health and wellbeing included the connection to resources to support physical, mental, and spiritual health of students. Fostering a stronger sense of connection to the school, a greater sense of inclusivity among students, and connection to land and Indigenous culture were all viewed as essential to wholistic wellness. As such, Indigenous teachings were brought into schools:

“This year, they had a group of Elders employed by the district. And we also have First Nation, Inuit and Métis coordinators at the school... They had land-based learning activities all through the year. I was just part of one where we went on nature walks with Elders, and they talked about the local plant life and, traditionally, what it would have been used for or what you can use it for now, and what's growing around us.” (P11)

4.3.3 Impact: changes in school practices ripple out to promote health in the community

With an established foundation of a healthy school culture (described in Theme 1) and actions taken by both school and community to strengthen the work (described in Theme 2), community partners spoke to impacts that occurred in the community environment. In essence, a ripple effect was observed as learnings and practices from APPLE Schools were shared beyond the school. Two subthemes outline the impact of changed practices.

4.3.3.1 Changed practices in the community

APPLE Schools promotes healthy eating through the Alberta Nutrition Guidelines which aligns with recommendations established by Canada's Food Guide. A community partner noticed through their work in a community-based organization that healthy food choices were being talked about more often outside of the school by the students: *"so now they're bringing that idea home to mom or dad or their caregivers and saying, 'I really liked that'. And so... it just trickles*

through the community that way through the kids and through parents.” (P9) Outside of the school, parents shared their children were also making healthier choices at restaurants due to the exposure to healthier foods in schools. There were also recognized changes to fundraising efforts in the community, as sports teams no longer focused on chocolate sales.

Community businesses and organizations like grocery stores, restaurants, and the food bank, in partnership with schools, supported healthy eating, especially consumption of fruits and vegetables. Moreover, community businesses and organizations changed their daily practices to meet healthy school standards. Vendors in the community worked closely with a community dietitian and the School Health Mentors. Partnerships between grocery stores and schools were mutually beneficial. A School Health Mentor said it’s *“a win/win, they provide our students with healthy food choices, our students are enjoying the healthy food choices and learning from that, and the businesses are learning from that as well.”* (P17) Almost every school partnered with local grocery stores to receive generous discounts on purchased food or receive food donations. One grocery store owner shared how donations were a part of their standard practices and now they ask schools what aligns with APPLE Schools or donate specifically what schools request as healthy options. *“We donate, of course, for the breakfast program. That’s where the apples and the granola bars come in. And then we also sponsor if they’re having a barbecue or any events going on with the school.”* (P15) A significant change was noted in that grocery stores started modifying their procurement processes in general to support the broader community needs. As indicated by one participant: *“when some of those lists [healthy choice guidelines] came out with, you know, healthy snack options, I mean, our grocery stores would be sold out of the healthy options. So, they had to all of a sudden change the way they were ordering because the healthy options were now selling, right, which is huge.”* (P5) Community partners commented on

changes they noticed in their day-to-day saying *“it does feel like a lot of grocery stores are getting more of a robust produce area and making sure that there is quality fresh products for the community to have accessible.”* (P3) This phenomenon extended to local restaurants, and vending companies who were long standing supporters of the school. These partners were open to modifying their practices to support the needs of an APPLE School. A restaurant chain manager shared:

“Honestly, we've always been part of a hot lunch program. We've always made pizzas for the school for years. But when the APPLE Schools initiative started, that's when we started bringing in the multigrain product for them to make sure that we still fit in with their criteria. We did hot lunches before, but we modified it to meet their program.” (P14)

This change occurred to support schools despite the fact the restaurant did not carry menu items such as multigrain pasta or dough. The restaurant owner also shared their business added salad and vegetable options to their selection.

Change in the community was further driven by students. Participants spoke to the leadership fostered by APPLE Schools as students developed confidence and skills to lead initiatives such as morning announcements on topics of health or wellness campaigns. A School Health Mentor shared how Student Wellness Action Teams (SWAT) formed at the high schools were made up of students advocates that drove health promoting changes beyond schools. A specific example was shared from one of these meetings:

“One SWAT meeting we actually brought a vendor from [a local College], and they are the food vendor for the cafeteria foods. So the kids actually were able to have a conversation with him and they themselves said we’re not purchasing this, this and this, because it’s not healthy and we don’t want this, could you provide healthier food

choices...So all in all, its education that's the driving factor in what's causing the change." (P17)

In a unique partnership example, the local food bank and school boards worked together to order cases of fresh produce and healthy snacks for the school. This change in ordering provided a better opportunity for schools. The manager of the food bank secured food at a better price and the change was a simple addition to their regular practice of ordering. The food bank also ensured the food they secured fit within APPLE Schools requirements for healthy eating.

Afterschool care settings and group activities held in the community were also impacted by the changes in schools. As a natural extension to what children are learning in schools, changes in after-school settings were made to the food served to align with the same food served in schools. The manager of programs at a local non-profit youth organization said:

"With our menus, it is 100% because of what is being modeled within schools...And it's a lot easier, why would we reinvent the wheel when we can just follow something that's been modeled so well for us already?" (P10)

4.3.3.2 Sustained impact

The longstanding impact of APPLE Schools was referenced by many of the community partners. APPLE Schools was viewed as a permanent approach by the community. Healthy kids and healthy schools set the precedent for schools and community interactions. Health promotion in the school environment was noticed to withstand changes even from community partners located outside the school in the health sector:

"we've had tons of turnover, especially with the Superintendent levels, but there's never a question of will this remain? It's part of, it's embedded into the school systems, right. So it's not it's like many other programs, they kind of come and go." (P5)

Furthermore, the community perceived the partnerships with the school and changes to community practices as stable. A community dietitian heavily involved with the process of helping restaurants and vendors meet healthy food guidelines remarked how *“we're in such a like, sustainable model now that I don't answer as many questions as you know, maybe the earlier years.”* (P6)

Community partners spoke to changes that were made in their business or organization before they took their role, which were carried forward without question. These aforementioned changes included restaurants ordering different food, healthy food donations given to schools, and partnerships to deliver physical education programming. When APPLE Schools initially took roots in schools, there were a limited number of businesses that met the healthy schools' policies, however, after almost a decade, this is no longer an issue. A business owner and member of parent council, who was a part of the selection process of vendors for school hot lunches, shared there was a time they struggled to find any vendors that fit within nutrition guidelines, whereas now almost all vendors offer healthier options.

Overall, community partners reflected on the lasting impact left by APPLE Schools as a result of over ten years of working in their school communities. This was aptly summarized by one participant who shared:

“It's not even a question in my mind. It'll, you know, it'll change maybe a little bit over time. But I think it'll always be there. And what they've, what they've accomplished can't be erased. Like, there's always going to be that mark.” (P5)

4.4 Discussion

The results of this study show that APPLE Schools, a CSH intervention, has impacted the community environment and details the steps that occur before these changes take place. One

explanation for the impact was the implementation of the full CSH approach (i.e., all four components) along with the APPLE Schools model of support. This enabled the reach of APPLE Schools. In the initial step of building a foundation, the awareness generated and close involvement of the community in the school was an opportunity to demonstrate change taking place within the school environment (i.e., teaching and learning practices and changes to the physical and social environment). Many of the changes in the school environment observed by community partners are similarly noted through prior research with school staff (Klassen et al., 2022). As a whole, APPLE Schools was well received by the community, which led to partnerships, and is consistent with previous evidence demonstrating external partnerships offer expertise, funding, and resources (Coppola et al., 2019).

As part of the action of tying school and community work together, ongoing conversations about supporting children and youth were brought together cohesively. The School Health Mentor role was mentioned as a key factor in brokering knowledge, networking, and fostering partnerships. This finding is similar to other school-based health promotion interventions that report dedicated roles are needed to coordinate and strengthen partnerships (Barnes et al., 2013). These sort of health champion roles unique to APPLE Schools have been previously identified as brokers of health-related knowledge throughout school networks (Storey et al., 2021). The APPLE School Health Mentor role was supported by the school district (i.e., partially funded) which built capacity in schools to promote health and build external connections. Overall, school district level support as well as city-wide buy in supported changes reported in this study. This research confirms the need for school district-level support, as an essential condition of CSH implementation (Neely et al., 2020; Storey et al., 2016). The district level support and all schools adopting the APPLE Schools intervention, ensured consistency in the implementation approach.

Further, the Healthy School policies were well aligned with established recommendations for school and district policies to support CSH (Neely et al., 2020; Storey et al., 2016; Veugelers et al., 2023).

This study showed bringing together the health promoting work happening in schools and the community resulted in positive shifts happening more broadly in the community. Instilling the value of health promotion within children enabled them to influence change similar to a previous study (McKernan et al., 2019). The demand that was created for healthy choices by the school community motivated businesses to change their practices. Consequently, more healthy options were provided to children, families, and schools in the case community. However, the way that APPLE Schools adapted to and impacted the case community may look different in a different community; for example, other research has noted differences in the approach taken in rural schools versus urban schools (Veugelers et al., 2022).

The APPLE Schools intervention determines a sustainable state as one where school efforts are maintained because they are embedded into day-to-day actions (APPLE Schools, 2021c). This sustainable state was referenced across the community partners. Despite external changes in the broader community, for example, staff turnover in organizations and environmental disasters experienced by the community, health promotion efforts remained strong. School and community collaboration is a key factor noted by (Oktari et al., 2018) to promote greater resiliency among school efforts. Further research would be needed to investigate this resiliency. However, the sustainability of APPLE Schools in the case study during times of upheaval may be attributable to the fact that APPLE Schools is well embedded and supported by many sectors in the community who all formed a working coalition for children's health. These cross-sectoral

partnerships were beneficial for schools and future research could analyze a breakdown of the sectors that support schools and the reciprocal impact by sector.

4.4.1 Implications

Our results show that schools that take a CSH approach, with the APPLE Schools model can in fact reach the community environment and result in health promoting changes. This research provides evidence to solidify the school, home, and community connection and the influence of schools on the broader community. Further, this research demonstrates the importance of school district support towards the CSH approach and the support of district-wide policies that can align health promoting priorities across a setting.

Importantly, we have shown that APPLE Schools can have far reaching impacts to promote children's health and wellbeing at school and outside the school. Thus, when schools set priorities and values of health promotion, this research suggests it is possible for community practices to change to align with school efforts if there are strong connections. Community support should be leveraged by school administration and staff.

4.4.2 Strengths and limitations

A strength of the research was the breadth of community partners that were included from different sectors. Multiple data generation methods strengthened findings through a verification process and by completing document analysis between recruitment periods, a greater contextual understanding of the community was gathered confirming details shared in the interviews. This promoted rigour and trustworthiness. Focused ethnography guided a depth of insight into the phenomenon of interest in single community which was determined in consultation with APPLE Schools as the best approach. Despite the strengths of focused ethnography to this study, there are limitations that should be acknowledged. Data generation

focused on adult experiences and future research examining student experiences as it relates to the impact of CSH on the community environment could generate additional insights. More in-depth data generation with some participants (i.e., the modified interviews) may have yielded additional further information. This research used a snowball sampling approach to identify who was impacted by APPLE Schools. It is possible there were community partners impacted by APPLE Schools but who were not aware and thus, were not included in this study.

4.4.3 Conclusions

This research provides compelling evidence for the reach possible when taking a CSH approach using the APPLE Schools model of implementation. With the support of APPLE Schools staff, the school community, the school district, and the broader community, health promoting initiatives originating at school influenced change in the community as well resulting in a greater number of healthy options and opportunities for children to make healthy choices.

CHAPTER 5: RESILIENCY OF THE CSH APPROACH IN CANADIAN SCHOOLS THROUGHOUT THE COVID-19 PANDEMIC

5.1 Background

The school setting is an ideal setting to promote health as health and education outcomes are closely interrelated (Jourdan et al., 2021). Healthy students have shown improved academic performance and conversely students with strong academic performance have better health (Degoy & Olmos, 2020). Despite challenges in the school system throughout the COVID-19 pandemic, research related to the impacts of the pandemic has shown that health and wellbeing of students and staff can and needs to be a priority in schools moving forward post-pandemic (Russell-Mayhew & Murray, 2021; Testa, 2021). With the related and influential nature of health and education in the school setting, approaches taken in schools to promote healthy school environments are important to consider.

Settings-based approaches, such as the increasingly adopted Comprehensive School Health (CSH) approach in Canada, support wellbeing beyond the individual level, and instead takes a whole school approach addressing components such as teaching and learning, physical and social environments, policies, and partnerships and services (Joint Consortium for School Health, 2016). Implementation of CSH is not a universal approach but does have core conditions for successful implementation (Neely et al., 2020; Storey et al., 2016). A CSH approach supports unique school trajectories based on the outer context surrounding the school (e.g., community support) and inner needs of the school (e.g., demonstrated administrative leadership and dedicated health champions) (Storey et al., 2016) to embed health promoting culture into the school. School districts also have a role to play in supporting how capacity can be built to support wellness at the school-level (Montemurro et al., 2023). Connections to families and the

broader community strengthen an intervention in the school and are transformative to school culture (Wellman et al., 2024), and building capacity and partnerships to the school are not only part of implementation but a key part of sustaining a culture of health promotion (Koh & Askill-Williams, 2021).

The response of schools taking a CSH approach during the COVID-19 pandemic merits a closer look at the ways that health promotion was navigated during the pandemic (e.g., virtual and in-person learning). In particular, research in the area of resilience through disasters explains how “the context—before, during and after exposure to disaster—appears to play many roles in the interpretation and response to disasters at multiple levels.” (Masten, 2021, p. 3) As such, schools with embedded practices of health promotion may respond differently than schools without these practices during the pandemic. Evidence suggests students with positive attitudes toward healthy lifestyles fostered at school carried these throughout the pandemic while they were at home (Maximova et al., 2022). This implies the prioritization of health and wellbeing endured through the COVID-19 pandemic in some capacity in schools taking a CSH approach. This may be attributable to meaningful connections connection between school and home (Pattison et al., 2021). The impact of health promoting approaches must first reflect on the context of children’s health and the school settings throughout the pandemic and why school-based health promotion is needed.

Changes to the school setting resulted in schools facing many added challenges to promote health throughout the pandemic and a greater number of health concerns due to the extensive impact of COVID-19 on everyday life. In Canada, schools and non-essential workplaces were closed during the first pandemic wave in March 2020. In addition to school closures, recreation centres, childcare settings, and playgrounds were closed. Not only were

children's routines disrupted during the pandemic, but children's health and learning showed wide-reaching effects. During lockdowns and resulting school closures, students were expected to attend school online. Despite this expectation, it was not uncommon for teachers to report decreased attendance among their students and consequently, a loss of learning (Alvarez-Rivero et al., 2023). For some children the home environment was not conducive to learning online (e.g., lack of space, safety, access to internet) (Van Lancker & Parolin, 2020). Gaps in math and literacy skills are noted across students of all socioeconomic backgrounds during school closures (Van Lancker & Parolin, 2020). Though, disproportionately, academic performance of students from low SES were affected (Alvarez-Rivero et al., 2023). Pre-existing health inequities, such as food insecurity, worsened (Van Lancker & Parolin, 2020). Throughout the pandemic, increased mental health concerns of school-aged children and adolescents were also widely reported (Cost et al., 2022; MacDonald & Hill, 2022; Testa, 2021). Some students experienced the shift to learning at home as a time with lessened stress and anxiety (Cost et al., 2022; Maximova et al., 2022) whereas others, particularly those with an existing mental health diagnosis, showed signs of increased anxiety, irritability, depression or a deterioration of attention (Cost et al., 2022). The strained learning environment was not only felt among the students but also school staff, many of whom took on additional work during school closures and suffered added emotional labour and feelings of stress and burnout (Alberta Teachers Association, 2022). Teacher burnout and exhaustion was not a new feeling created by the pandemic but one that was exacerbated (Gadermann et al., 2023). The COVID-19 pandemic shows strong justification why the school setting is more desirable than ever to mitigate the social determinants of health (Testa, 2021).

In Canada, following weeks of school closures, schools attempted a return to in-person learning. Based on provincial/territorial and school district recommendations, elementary, junior

and high schools were provided guidance about a return to in-person classes while the subsequent waves of the pandemic loomed ahead. The resulting outbreaks of the virus in school communities led to a series of decisions to move between virtual and in-person learning to prevent transmission of the virus and keep children healthy and safe. Upon the return to in-person learning between Fall 2020 and Spring 2021, added public safety measures (e.g., cleaning and handwashing, separation of students into cohorts, physical distancing, and mask wearing), often fell to the responsibility of school staff (Pattison et al., 2021). These added health measures resulted in work that further contributed to stress and burnout among teachers (Alberta Teachers Association, 2022). The exacerbated health inequities experienced by children and teacher and staff burden during the pandemic is further justification for an integration of health and wellbeing supports into school communities is needed (Gadermann et al., 2023). Schools hold an important role to support health and learnings for students. Promoting health in schools offers a pathway to support children's health, wellbeing, and academic learning (Jourdan et al., 2021). Thus, schools that mitigated pandemic-related challenges and continued to promote a healthy school need to be further studied.

It is well-established in the literature that school settings which provide a healthy social and physical environment supports both the health and learning outcomes of students and help children to thrive (Joint Consortium for School Health, 2016; Langford et al., 2014; St Leger, 1999). As well as within the physical and social environment of the school, established safety policies, professional development opportunities for staff to support students, and strong relationships between school and home are equally important post-pandemic (Pattison et al., 2021). This closely aligns with CSH's foundational components (Joint Consortium for School Health, 2016) and suggests that schools already well-established in their CSH implementation

efforts, may have been able to navigate the promotion of health and wellness throughout the pandemic. Schools that have administrative leadership, higher level support (i.e., district level), professional development for staff, and community support have achieved several conditions for successful implementation (Storey et al., 2016). Moreover, building social capacity and buy-in of the school community (Stolp et al., 2015) and embedding structural supports into the school culture and environment (McIsaac et al., 2017) are meant to be long-lasting and endure changes to the school environment.

There is a need to explore how health promoting schools, especially those that have met conditions of successful implementation, navigated the pandemic. By exploring school-level experiences, we can increase our understanding of health and wellbeing supports to mitigate future disaster impacts on school systems and health promotion endurance. As such, the research objective of this study was to understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity.

5.1.1 APPLE Schools

APPLE Schools (A Project Promoting healthy Living for Everyone in Schools) is an evidence-based, innovative, and globally recognized health promotion intervention that is implemented in 100 elementary and high school communities in Alberta, the Northwest Territories, Manitoba, and British Columbia (APPLE Schools, 2024) and impacts the lives of over 33,000 Canadian students annually. APPLE Schools began in 2007 in 10 schools and has continually expanded to new schools in new regions across Canada. The APPLE Schools intervention uses the CSH approach to create a health promoting school culture by promoting healthy eating, physical activity, and mental wellbeing among students. The APPLE Schools model of implementation includes a dedicated role to lead and inspire health promotion change

(i.e., a School Health Facilitator), as well as funding, professional development, materials and resources, ongoing support from APPLE Schools staff, and continued research throughout implementation. Research and evaluation are a key component as APPLE Schools expands into new regions across Canada. To provide insight into facilitators and barriers in new contexts, process evaluation occurs and is often focused on the experiences of the school community, who are key to health promoting efforts in the school.

5.2 Methodology

This research was informed by a constructivist approach. This approach encompasses a relativist ontology and subjectivist epistemology (Denzin & Lincoln, 1994). This process of inquiry and knowing recognizes the unique realities experienced by individuals and the researcher and is greatly shaped by the interaction between participants and researcher during data generation (Denzin & Lincoln, 1994; Lincoln & Guba, 2013). This approach results in co-created knowledge among participants and researchers (Lincoln & Guba, 2013; Mayan, 2009).

5.2.1 Qualitative description

A qualitative descriptive method informed this research study. This method guided a naturalistic form of inquiry described by Sandelowski (2000) and is helpful to understand experiences or events that occur. Qualitative description was the most suitable method to capture school staff perspectives of health promotion during the COVID-19 pandemic as the events that occurred in schools were complex. The guiding method is well aligned to broadly answer questions ‘who’, ‘what’, and ‘where’ (Sandelowski, 2000). The aim of this study was to provide a retrospective narrative of school experiences describing and explaining how schools taking a CSH approach adapted and sustained efforts to promote healthy school communities during the pandemic.

The research for this study occurred as one part of ongoing APPLE Schools process evaluation at the beginning of the COVID-19 pandemic (early 2020-2021). The process evaluation of APPLE Schools' was examining CSH implementation in rural and remote communities in Canada, which naturally aligned with understanding how CSH implementation was affected during the pandemic. The researchers were able to use well-established school relationships from the process evaluation of APPLE Schools and ask additional questions to follow the progression of events in schools as they unfolded over a year-long period. The overall research approach for the process evaluation considered qualitative description and quantitative measures. This research is one part of the process evaluation that was qualitative in nature and the scope of this work was guided by qualitative description.

5.2.2 Setting

This research was with schools across western and northern Canada (i.e., British Columbia, Alberta, Manitoba, and the Northwest Territories). At the time of this research, APPLE Schools had received federal grant funding to expand to 21 schools in rural and remote communities thus prompting additional evaluation of the implementation into these communities over a period of three years. These are referred to as 'expansion schools'. A total of 14 schools across eight school districts representing rural, remote, and urban communities were included in the study. The researchers undertook maximum variation sampling with phenomenal variation seeking variation in school locations, size of schools and schools with and without health and wellness policies. Schools were also varied in the length of time implementing CSH. This sampling technique is especially useful in qualitative descriptive methods to create a rich summative description of the events (Sandelowski, 1995, 2000).

5.2.3 Participants

Within the 14 selected schools, school staff who fit the health promotion champion role were identified and were purposefully sampled as they are key to implementation efforts and who were fundamental health promoters through the pandemic. In collaboration with the APPLE Schools implementation team, School Health Facilitators and engaged school staff acting as health champions (e.g., school principals, teachers) were recruited directly by APPLE Schools implementation staff. Selected school staff were invited by email to participate in an interview or focus group, as well as encouraged to invite others in the school in a health champion role. Participants included 22 total participants which is similar to reported qualitative descriptive studies (Kim et al., 2017). Two individuals participated in both focus groups in this study. Both dedicated teaching staff in champion roles (n=19) and principals (n=3) were included.

5.2.4 Ethics

Ethical approval for this research was granted through the University of Alberta Human Research Ethics Board (Pro00035108). All participants provided verbal consent during the interviews and focus groups.

5.2.5 Data generation strategies

Data generation occurred in a two-phased approach. Guided by qualitative description, between March-May 2020, both semi-structured interviews (n=9) and focus groups (n=1; 5 people) were conducted to understand implementation efforts of CSH in APPLE Schools. The one-on-one interviews were approximately 30 minutes and conducted over telephone or Zoom. The original purpose of the interviews was to understand school and community impact in schools taking a CSH approach. This adapted to also understand the influence of the pandemic on the school environment. The focus group conducted was one hour in length (occurred over the

lunch hour of a school day) and took place over Zoom. The purpose of the focus group was to further explore school and community impact in schools taking a CSH approach with additional questions added to understand the influence of the pandemic on the school environment. The researchers felt this warranted further investigation as the pandemic unfolded. A sequential data generation strategy was identified using a guiding method of qualitative description to further study this through semi-structured interviews and focus groups. The purpose of the interviews and focus groups were to better understand the impact of the COVID-19 pandemic on health promotion efforts in schools and what were adaptations made by schools during this time. In the second data generation approach of interviews and focus groups (occurring between March-April 2021) school staff were asked questions about adaptations and pivots made by schools throughout COVID-19, their partnerships, and their surrounding context to the school. To accommodate participants during this challenging time, the questions were offered and completed in the following formats: semi-structured interviews (n=1), focus groups (n=1; 5 people), or an online survey (n=2). One-on-one interviews were approximately 30 minutes and conducted over telephone or Zoom. Focus groups were one hour in length (occurred over the lunch hour of a school day) and conducted over Zoom. The survey also had the same purpose as the interviews and same questions but was offered to be a more flexible and accessible manner.

5.2.6 Data analysis and rigour

Interviews and focus groups were audio-recorded and transcribed verbatim. In alignment with qualitative description, content analysis was used as the data analysis strategy. Data analysis was an inductive and iterative approach focused on describing the experiences of staff promoting CSH during the pandemic. Content analysis began with coding and data was examined across time points, school districts, and school roles. A line-by-line coding approach was taken initially

for each interview and focus group transcript, and survey responses. This followed the practices described by Saldaña (2013). Codes were then assessed for the fit in relation to the research objective and put into categories and organized using NVivo analytic software (Q. S. R. International, 2021). Analysis then progressed to categorizing meaningful clusters and creating themes. Memoing through analytical notes was done throughout data analysis. The primary researcher used memoing as a means to incorporate emerging ideas, trends, and questions into the coding process. Memoing is an analytic technique noted by Mayan (2009) which is helpful in the identification of emerging themes by posing questions and thoughts about the connections made to data in the analytic process.

To ensure rigor throughout the study several strategies were used following Lincoln and Guba's criteria for trustworthiness in qualitative research: credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). The respective strategies were integrated throughout this research as follows. The sampling was purposeful and varied in align with the method qualitative description which ensured a rich description and numerous perspectives across time to describe a coherent narrative of school experiences (credibility and transferability). Researchers undertook peer debriefing which also promoted credibility and concurrent data analysis during data generation as a means to promote researcher responsiveness and reflexivity. Researcher responsiveness prompts a closeness to the data process and ability to review and change course of the research when needed (Morse et al., 2002). The researcher kept detailed notes as data analysis progressed with self-reflexive questions and descriptions of modifications needed to the interview/focus group questions and the process of content analysis (dependability). The process of journaling was also used to meet the criteria of confirmability.

Journals are typically used to record the researcher's reflections (Mayan, 2009). This prompted changes to be made to the data generation strategy when necessary.

5.3 Results

The objective of this study was to understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity. Schools were resilient in their efforts to continue health promotion with a CSH approach and relied on established foundations built around the social and physical environment, teaching and learning, policies, and partnerships. Three themes identified through data generated at the school-level represent how schools promoted healthy school communities during the pandemic: wellness was already a priority, purposeful efforts to continue health promotion, and recognition that (a culture of) wellness extends beyond the school. The CSH foundations are incorporated throughout each theme.

5.3.1 Wellness was already a priority

Throughout the responses of participants it was clear APPLE Schools was not considered an add-on but rather an integrated part of the school. Having dedicated people and time were key to have CSH embedded in school practices and made a school-wide priority. The dedicated role of the School Health Facilitator as part of the APPLE Schools implementation model was key to ensure health promotion occurred throughout school activities and incite student and staff buy-in. Participants across all interviews and focus groups echoed the belief that promoting a culture of health and wellness was well-established in their schools prior to the pandemic. This established foundation was shared aptly in the focus group with teachers:

“I think being part of an APPLE School prior to COVID was a benefit because I think if we were a new school entering into some of the some of the things that we've done in the

past, I don't think that they would have transferred over, but I think because we have already built that culture within our school, it was easier for our staff and our students to make a shift and understand that with the cohorts, we can still do some of the same things that we've done before. It just going to look a little different." (FG 2)

Shifting health promotion efforts was only made possible as health promoting work had begun prior to the pandemic and was a shared responsibility among staff. A teacher shared how wellness carried on during the pandemic with buy-in and ownership of school staff *"even though last year was our first year like we had already a lot of staff buy-in even before we started. Everyone was so excited to be an APPLE School and I felt like we'd already got that ball rolling. So it was easy just to keep it going."* (FG2)

Whole school efforts underscored the momentum of health promotion efforts rather than leaving the work to a small number of individuals. Both student and staff involvement were key. A School Health Facilitator shared how they felt about the work of promoting CSH throughout the school: *"it's such a group effort, so we kind of just coordinate stuff, but really everyone's already doing so much APPLE stuff that it kind of makes our job easy."* (I5)

Pre-established whole school activities were able to continue during the pandemic and included dedicated health and wellness time – a key component of the social environment and teaching and learning practices of the school. As an example, teachers shared that they led monthly campaigns or 15 minutes of 'APPLE time' (i.e., learning resources/time dedicated to a topic of health or wellness). This work was broadly supported by each schools' role of School Health Facilitator and was heavily relied on throughout the pandemic. A teacher holding a School Health Facilitator role described their perseverance: *"I would join their classroom. And*

I'll ask the teacher if I could get like to get like 15 minutes to share some APPLE school. And then the next day with a different classroom. So I just want to share some help with you."

Beyond support at the school-level, several school districts were mentioned in this study as having an explicit policy to promote school wellness. This was mentioned by some participants as being a critical factor as to why wellness in the school was such a prominent focus: *"I think the fact that it's not just a school initiative, it's a whole district initiative as well, and that there's support, like there is the APPLE Schools representative for your school, and there's also our Apple's liaison"* (I4). Even in schools without district-level policies, school-level wellness policies were mentioned in several the interviews. A teacher substantiated this by detailing *"every school develops their own health and wellness policy, or guidelines, whatever you want to call it"* (I6). Wellness policies and practices set out in written and agreed upon documents at the school level were essential during times of school upheaval. A principal shared the experience of a previous adverse event in their community; a wildfire evacuation, which led to the school employing trauma-informed practices and wellness initiatives. During the pandemic, schools leaned back on these wellness supporting practices and used strategies to address mental health concerns: *"we're really going to have to revisit all those trauma informed practices that we learned after the fire when the kids come back [to the school]"* (I7)

From the initial start of becoming an 'APPLE School', schools made health promoting changes, such as healthy school policies, dedicated learning time, support for staff, and healthy physical spaces in the school. Looking back, after recognizing the increased needs of the school community and having a path to address health and wellbeing concerns, a teacher shared *"we see now as being a part of it, wow, this has a real, definitive role within our school"* (I8). With

health and wellness at the front of mind, the need to maintain health and wellness priorities during the pandemic was apparent.

5.3.2 Purposeful efforts to continue health promotion

Schools demonstrated a commitment to CSH through purposeful efforts to promote health and wellness for the whole school community during the upheaval of the pandemic. This dedication helped schools focus on supporting the school community in whatever ways they could. Promoting CSH initiatives throughout the pandemic was described as “*a big learning curve*” in the focus group with teachers as many challenges were navigated. It was also expressed how the resilience of health promotion was partly attributed to the efforts of dedicated health champions in the schools who arose to the new challenges presented: “*it’s just amazing how all the health facilitators have just stepped outside of their box and how we’ve been able to still bring the awareness of mental health to students and staff, and just get creative with our daily physical activity and our nutrition and everything*” (FG2). Schools and School Health Facilitators were supported throughout this time by APPLE Schools staff and resources provided “*I really enjoyed the APPLE [newsletter]. I get a lot of ideas from there. And yeah just appreciate all the support from colleagues and APPLE.*” (FG2).

Essentially the foundational components of the CSH approach provided the schools with a scaffold to continue to guide their efforts and pivot well-established practices while modifying practices, if needed, to meet public health directives. Throughout all schools there was continued health promotion efforts to promote healthy eating, physical activity, and mental wellness. One school Health Facilitator shared the ways they carried on what they were already doing pre-pandemic: “*we continued the ‘Don’t Walk in the Hallways’, the water bottle program, apple snacks for kids, breakfast for children who need it, daily physical activity bins for classroom use,*

mental health bins for classroom use, the announcements and bulletin board.” (S1). Nonetheless, in many ways, schools were challenged to adapt their efforts to the changing health directives (e.g., cohort separation and added sanitization measures). While healthy eating was still a priority for many schools, snacks and meals had to be individually prepared, packaged, and delivered. This fell to the responsibility of School Health Facilitators, as stated by one: “we do the [fruit] bins too in the classrooms, but I’m the one who has to wash the fruit, I’m the one who has to bag it all, get it all ready” (FG2). This staff burden resonated with many School Health Facilitators in the focus group: “Our kids used to be able to come down and get breakfast. That’s another change that we had to adapt to because they don’t want all the kids coming down and congregating together so now, we have two staff members that go around and deliver breakfast to all the classrooms so it takes more time” (FG2). As schools adapted to the changes required throughout the pandemic, so did the activities in schools based on what worked best. In one school community, the fruit bins in individual classrooms worked well and was able to be adapted so that students could be involved in preparing the food. A School Health Facilitator shared “our teachers and our students really appreciate the fruit in the classroom, so classes have taken it on now themselves. So every week a different group goes in and prepares it, they wash it there’s been a list of successful things that have worked so we continue to do that.” (FG2).

Despite the fact that adhering to the public health directive to separate students into cohorts made physical activity challenging, in several cases, spaces in the school were repurposed for physical activity spaces (e.g., using the lunchroom or hallways. A teacher shared “what we’ve done is we’ve tried to create different areas in the school where kids can get physical and then they can join in with their different cohorts at different times of the day.”

(FG2). Not only did schools create spaces for students to use, but also staff. A School Health Facilitator spoke to one idea they brought to life:

“I found this year, especially mental health for our staff, they are under so much pressure, and these teachers are trying their best and, yeah, it’s just been a real struggle so we’re not using our library, so we’ve actually set up our library as a mini gym for staff and students. Staff are using it a lot you know before and after school even on their preps, so we have a treadmill in there, we have an elliptical, and we also have a stationary bike.

And it’s just a spot for them to go and relax you know relieve some stress” (FG2).

Other schools shared examples of how they found success adhering to social distancing practices by leading outdoor physical activity such as hiking, snowshoeing, cross country skiing. In particular, schools in rural and remote areas, voiced how they felt at an advantage with their vast outdoor spaces. A School Health Facilitator said: *“I think we’re crushing it, we are a rural school and we have a very large playground, we have a skating rink, and class sets of snow shoes and skis and skates. So we are very active right now”* (FG2).

While having to navigate cohort separation, schools found creative ways to have student leadership groups engaged by making videos of supportive mental health strategies and having these shared within each classroom: *“We have four different strategies for calming down and bringing mindful awareness and so we’re going to do one each day and we’ve got the leadership students to make videos again. And so, myself and the guidance counselor direct the activity and then the students are doing it and then teachers can just put it on their computer and then lead their class with it.”* Despite staff and students physically being in the schools, public health measures prevented close interactions between students. Thus, schools held many virtual whole school events as a way to bring the school community together and continue a whole school

approach to health promotion. Each class would sign on to Zoom so that each classroom and students were all together in the same virtual meeting space:

“We do Apple zoom every Wednesday morning we call it ‘Wellness Wednesday’. And we all sign in together and then every classroom has their own camera so everybody can actually see each other and then we’re interacting and we usually do some trivia, based on whatever our monthly theme is so like, February was healthy heart so I’d ask them questions and then classes would be, you know, hollering out the answers and then it was kind of a competition and then they got points and then their names were put into draws and so that’s been really good just having the whole school involved but on a virtual zoom” (FG2)

This was even extended to connections between schools. One teacher shared *“we’re doing a virtual school powwow coming up in April. And we’ll probably just invite our sister nations to our powwow, and it’s all going to be through Google meet.”* The time and space for whole school events and wellness messages ensured student and staff health was a priority.

CSH efforts adapted to school needs during the pandemic and build off of what previously worked. As the pandemic progressed, many school staff spoke to a need to further enhance what was being done in schools when it became apparent the toll the pandemic was taking on the health and wellbeing of everyone. Additional efforts needed to be made to address this impact through both added initiatives and professional development. Responsive to the health and wellness needs of the school community, every participant shared a concern about the state of children and staff’s mental health. As such, promoting and strengthening mental health practices came to the forefront of health promotion efforts both during at home learning and in the school. A teacher shared one example of how they promoted children’s mental wellness “I

have something called Mindful Monday. And every second Monday during our last wellness break (we don't call it recess we call it wellness break). If kids want, they can come in and they can do a calming down activity with the leadership team and myself. And they like to come in and it might be like a mindfulness activity, or it might be a yoga activity, or it just might be a deep breathing activity for 15 minutes." In addition to concerns of children's mental health, staff were dealing with added stress of the school environment and on top on concern of their students. School Health Facilitators knew staff wellness was key to the success of a health promoting environment. For staff wellness, School Health Facilitators came up with creative challenges such as one example 'Wellness Ninjas':

"we all drew a name and then every month who's ever name you drew you buy them a wellness gift every month until June. And then in June we guess who our wellness ninja was, and we also have a bulletin board in the staff room where we thank our wellness ninja after we get a gift so that I know that everybody's gotten a gift every month...I know it just brightens their day right like we get bath salts or face masks or just making sure that our staff are taking care of themselves. So, because they're putting in a lot of hours at the school."

Further staff support was ensured by added professional development opportunities to support teaching and learning and health and wellbeing practices. One school shared how their professional development time for staff included yoga "*we have for some of our PD, one of our grade six teachers to do yoga. And so we did yoga, you know, two meters apart you can set up these yoga mats and could easily do that after school.*" (I10)

5.3.3 Recognition that (a culture of) wellness extends beyond the school

Wellness is deeply impacted by the surrounding context of the school and the ways that wellness was promoted at school, such as providing healthy food and addressing food insecurity was maintained throughout the pandemic in the home. School staff recognized some children came from food insecure households and ensured the school environment was equipped with healthy food for children to access at mealtimes or food was sent home in food hampers to families: *“we’ve been sending food home with ones that need it all year, we also do the breakfast program, and we have a lunch program”*. This practice carried on throughout the pandemic. Some schools provided food hampers and shared *“since COVID happened we’re sending out packages to parents that have healthy food, like this week that’s going to be coming up is cereal, apples and milk. In the past we had gift cards, and another time our educational assistants made healthy pizzas for the families. And hopefully the money we’ll be sending out some vegetables next time around.”* (FG1). These practices were uniquely based on the broader context outside of the school. For another school located in a remote community with one small, centralized grocery store, they found it easiest to pre-purchase food to be picked up at grocery stores by families: *“We bought some cereals and milk, and we left it at the cashier in our Northern Store so the parents can go and get some for the kids. So I found that a very good idea for the kids to keep having some sort of a healthy breakfast meal at home”* (FG1). Schools were primed to help support students’ health and wellness at home during the pandemic because they were already taking a CSH approach.

Identifying as an APPLE School and promoting the values of being an APPLE School, encouraged schools to secure resources needed to provide students with access to healthy food at home. By doing this prior to the pandemic, the practice of applying to grants was a part of the

schools' annual activities and pivoted to continue supporting students at home. One School Health Facilitator shared how they were able to fund initiatives of sending food to families during the pandemic *"I don't think we would have probably done that if we hadn't been an APPLE School and already got some of the grant writing underway and we're offering meals and such so I think that was a really good thing for the families."*

Schools taking a CSH approach carried forward teaching and learning practices and similar activities from the health promoting physical environment of the school to the home. Teachers created fun homework packages to encourage healthy eating and physical activity. One teacher shared *"to encourage healthy snacking we provided information on "Rating your Super Snack" and provided all students with a snack in their homework bags."* (S2). Equally as important as a healthy home environment for children, it was recognized that staff wellness needed to be encouraged and prioritized at home. A School Health Facilitator stated *"We did a weekend wellness challenge and I invited staff to share a photo of something they did for wellness. And so we got a bunch of photos in and then I did draws. Anyone who submitted a photo went in for a draw for some wellness things like I had some herbal tea and some scented candles things like that, water bottles"* (FG2). Part of the culture and environment of health promotion are the social interactions.

Daily interactions among staff and students are influential to the overall health promotion culture in a school community. In many different activities children were instructed to do at home to stay active, it was encouraged to have family participation (e.g., parents and siblings) to create more supportive environments for children. A teacher spoke to one example: *"every Monday I send information to parents of different links that they can go onto, like if it's a rainy day and the kids don't want to go out and play, that they can click on this link and then they can*

do a mindfulness activity with the kids, or they could do a physical activity or a workout with the kids.” (I9). School Health Facilitators encouraged fun physical health challenges, where students and their families could participate and then send photos to the school. These were ways the schools stayed in contact with their students and could ensure they were engaging in health promotion activities. In one focus group, a teacher shared *“some of the [Physical Education] teachers and some of the staff members, and the principal, we dressed up and we made sure we were practicing social distancing, and we did a Richard Simmons workout dressed up, and then we sent it to all of the parents and kids”* (FG1). Strong social connections between students and staff were maintained to promote health and wellness during at-home learning. Schools reached families and communities members through social media. Many schools relied on Facebook connections to share healthy learning activities. One teacher spoke to how their school used social media to extend the reach of healthy information shared *“we also created a Facebook page for the kids, the parents, and the people of the community to go check and we put on it some resources, and fun activities regarding meditation, and physical activity, so it’s a really nice way as well to get in touch with the kids.”* (FG1). Whereas, prior to the pandemic, people would have been invited into the school, virtual connections were made with families and the broader community *“we are looking at connecting virtually with Elders and doing a virtual family games night”* (S1). These connections fostered stronger partnerships.

As part of prior CSH efforts, partnerships were well-established and relied on through the pandemic. Community partnerships supported how wellness was promoted beyond the school. In many instances, partnerships were adapted during the pandemic to better meet the school’s needs for additional expertise or resources to promote health and wellbeing. A School Health Facilitator commented on a number of existing partnerships that supported their health

promotion efforts: *“One connection provided money for Milk Monday, one organization provided birthday books, one organization gave \$500 to each class for books, another gave each grade level money for materials”* (S1). To meet emerging mental health needs of students, one school approached an organization in the community. The School Health Facilitator said, *“we wanted to offer the grade 5/6 class mindfulness so we contacted an organization who could provide this activity via zoom”* (S2). These connections ensured the priority of student’s health and wellness carried on outside of the school.

5.4 Discussion

This research study demonstrated how schools taking a CSH approach have sustained and adapted their efforts in the face of adversity to promote healthy school communities. Schools were resilient in their efforts to promote health using a CSH approach throughout the COVID-19 pandemic. The components of CSH, namely, the social and physical environment, teaching and learning, policies, and partnerships were all adapted and sustained over a year-long period of CSH implementation including virtual and in-person classroom learning. Our findings highlight the important role of CSH in the school setting to promote health and education and was captured through school staff perspectives.

In this study, across all participants, it was re-iterated how wellness was already a priority in schools and evident in classroom time, school spaces, and leadership practices. The embeddedness of CSH culture and support of health promotion prior to the pandemic explains the resilience of CSH efforts as resilient systems have supportive social capacity (Masten, 2021). School staff in this research had built a supportive social environment with distributed leadership and were supported by APPLE Schools staff. Additionally, district wellness policies were found to be a factor that ensured the resilience of health promotion. This has been noted in previous

literature examining higher level support at the school district or jurisdiction (Montemurro et al., 2023; Neely et al., 2020).

Because wellness was a priority within the schools in this study, several school staff shared examples how previous school flooding and wildfire evacuations primed them to navigate the upheaval brought on by the pandemic and meet the needs of the school community. The impact of disasters is a growing concern among school systems with the increasing prevalence of wildfires, flooding, and other weather-related events (Masten, 2021). Understanding how schools navigate adverse events is needed. Research in the field of resiliency by Ann Masten captures an insightful definition of resiliency: “the capacity of a system to adapt successfully to significant challenges that threaten the function, viability, or development of the system.” (Masten, 2018, p. 16). As COVID-19 greatly influenced the school system and challenged existing health promotion practices, looking to understand resiliency is important. Common practices and language supporting health promotion within schools and school districts could be used as a form of emergency preparedness.

Health promoting activities and changes made to the social and physical environment of the school, prior to COVID-19, showed endurance. This supports well-established research citing the school environment as a critical component of health promoting interventions (Joint Consortium for School Health, 2016). Teachers can best support student’s health moving forward post-pandemic through the environment, curriculum, additional resources and professional development (Childs et al., 2022). The key role of the School Health Facilitator found throughout the pandemic was reiterated from prior research demonstrating the importance of this centralized role in health promoting efforts (Storey et al., 2021). While the School Health Facilitator did not lead efforts alone, and had the help of staff, staff burden of adhering to health

measures and promoting health was reported. This supports claims made in prior research (Alberta Teachers Association, 2022; Pattison et al., 2021). Other research supports this notion, and findings show a buffer to the stress felt by teachers can be a supportive education system mitigating teacher stress with mental health and wellbeing supports (Gadermann et al., 2023). The findings in this research highlight the need for CSH which can wholistically support the school community and environment through changes and stressors to the school system.

The importance of the collaboration between the school, home, and community is well known to support CSH (Epstein, 1995; Langford et al., 2014). In this study, the pandemic effects demonstrated the extension of CSH beyond the school to support health and wellness of students. Partnerships were affirmed to be key during the pandemic. Further, COVID-19 has shown the reliance on schools as connections to the home and community (MacDonald & Hill, 2022). The support of families, schools, and communities is tied to resiliency (Masten, 2021) and became critical links during the pandemic to promote CSH. This research showed during the pandemic, school-based efforts ensured students food security needs were met at home and secured partnerships to provide students with extra health services. Consequently, partnerships used as a ‘bridge’ to provide basic necessities and extra learning supports (e.g., technology) is reported to assist disadvantaged families (Testa, 2021).

5.5 Conclusion

In this research study, APPLE Schools taking a CSH approach had well-established priorities of wellness prior to the pandemic. These priorities carried on throughout the pandemic and put student and staff wellness at the forefront of health promoting efforts during school closures and the return to school learning. Health promotion remained a focus in schools’ teaching practices and social interactions among the students while at home and the school

environment. Because of the nature of closely connected home, school, and community connection in the CSH approach, these relationships helped navigate health promotion during school closures throughout the pandemic.

CHAPTER 6: CONCLUSION

6.1 Summary of Findings

The overarching goal of this thesis was to explore the school and community connection for schools taking a CSH approach. This broadened to also encompass how schools taking a CSH approach (i.e., closely integrating school, home, and community into health promoting efforts) navigated the COVID-19 pandemic. Specifically, this research examined the exemplary CSH intervention, APPLE Schools, across school settings in Canada and explored these connections from the perspectives of both school staff and community partners. School community buy-in is a critical aspect of CSH implementation (Stolp et al., 2015) and as such, school staff hold key insight into health promoting work inside schools as demonstrated in this project. In this research, school staff led the exploration of changes at the school-level and demonstrated through an immersive walking interview the widespread change that occurs in the physical and social environment of the school to support health promotion. Through the school-level work, it was also apparent the influence of broader contextual factors. It is well known the school, home, and community efforts are jointly needed in a CSH approach (Epstein, 1995). Moreover, community partnerships are fundamental to support school needs and provide financial and human resources (Barnes et al., 2013; Coppola et al., 2019; Joint Consortium for School Health, 2016). Community connections are key to CSH, but the impact on CSH practice has remained unclear. This research addresses this gap to investigate these connections and more holistically understand the impact from the community partner perspective, whose view of the CSH approach has not been previously considered. With a greater understanding of the interconnected nature of school and community in practice, this research further investigates how adverse events occurring outside the school, but as a stressor to the school system, can be

navigated. This research contributes to a whole picture of CSH implementation in practice. The objectives of this research were:

Objective 1: To explore the influence of APPLE Schools on the school and community environments from the perspectives of school staff.

Objective 2: To understand if and how the intervention, APPLE Schools, has impacted the community environment.

Objective 3: To understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity.

6.1.1 Objective 1 Summary

The purpose of objective 1 was to examine the impact of CSH to school and community environments from the perspective of school staff. A case study approach was used to explore multiple cases (n=5) that were purposefully selected. Guided by the method of focused ethnography, school staff (n=22) embedded in CSH health promotion efforts at the school-level in APPLE Schools provided insights through data generated in walking interviews within the school environment. School staff described changes in the school environment and identified ways their schools worked in partnership with local community businesses and organizations. The results of this study had four themes: 1) APPLE schools look different, 2) APPLE Schools build champions, 3) APPLE Schools builds community partnerships, and 4) APPLE Schools honours community culture.

School staff spoke to changes made in the physical school environment that prioritized activities such as physical activity, healthy eating, and mental wellbeing. Dedicated spaces in

classrooms and hallways and outdoor spaces were important to keep APPLE Schools' values at the forefront of the school community. Major changes were noted among food sold and served in schools in daily school lunches as well as holiday celebrations. Schools went as far as to shift celebrations away from food and toward movement-based activities. Physical activity permeated further into the schools' daily schedule and was incorporated into classroom activities so that student's learning was not restricted to sitting at a desk.

Staff felt the approach taken by APPLE Schools empowered the whole school community and led teachers, administration, students, and parents to become champions of health promoting change. Change that was originally led by the School Health Champion and supported by administration spread to be role modelled by others. With dedicated time and resources to make health promoting activities a priority, staff became more confident and supported changes. A health promoting school environment, and professional development opportunities were key to support staff buy-in. In school initiatives, student voice was critical during planning stages and to share healthy messages. These messages even reached the parents through information that children brought home from school.

A further support acknowledged by school staff were community partnerships. The identification of schools as an 'APPLE School' promoted values that community members were keen to support. Community support and partnerships provided resources to schools as well as financial support that led to greater longevity of school initiatives. Schools received food donations and assistance to prepare healthy school lunches. Particularly long-term partnerships between schools and community businesses and organizations supported sustainability of the CSH approach and took some of the workload off of the School Health Champion having to

constantly find and secure funds. However, this was noted to be difficult in some school contexts where the community was suffering economic downturn.

Lastly, the case study approach captured the importance of each school context to honour community culture. The historical legacy in some schools was impacted by residential schools and faced negative perceptions of the school environment. Thus, APPLE Schools then worked with the school community to work with the existing needs of the students and create welcoming school environments for students and families. Another core aspect was identifying holistically how health and wellness could be supported and working with local community members and Elders to bring community and school closer together. In other schools impacted by the boom-and-bust nature of the oil industry, or in remote regions, the cost of food and goods meant more work for school staff to ensure schools to obtain the necessary means to support student's health. These contextual factors were best understood and navigated by a School Health Champion who understood the geographical, historical, and sociocultural influences rather than an outsider to the community who would take added time to learn these. Altogether, the close integration of school and community reinforced health promotion efforts and led to changes in the school and community environments.

6.1.2 Objective 2 Summary

The purpose of objective 2 was to understand if and how APPLE Schools impacted the community environment from perspective of community members. Data were generated through semi-structured interviews with community partners as well as through document analysis. Themes identified related to an overall process that supported the reach of CSH efforts to the community environment. Themes were represented in a stepped approach that built off one another: 1) Foundation: establishes a healthy school culture; 2) Action: tying the work of schools

and communities together; and 3) Impact: changes in school practices ripple out to promote health in the community. As an undercurrent throughout all was participants' perspective of the positive impact of APPLE Schools and the strengths-based approach taken by APPLE Schools. This was seen as a way to create access to healthy food, more opportunities for physical activity and connection to community resources that would support children to thrive.

Schools initially established a healthy school culture by generating awareness of what APPLE Schools promoted within schools. Consistent communication from school staff, students, and parents set common expectations that were held in schools and emphasized the importance of taking a CSH approach. As part of the CSH approach and partnership building, community partners were closely integrated in schools through school visits. With stronger engagement efforts, partners were able to note the positive effects on health behaviours in children such as their energy levels, confidence, and water consumption. These benefits witnessed by community partners instilled hope to create a better life for future generations to come, and motivated community partners to support schools and support equitable healthy school communities. Businesses and organizations that were outside sectors of health and wellness even contributed to healthy schools.

Building from a foundation of a healthy school culture, the vision of healthy children and youth was collectively held by school and broader community members. Collaboratively efforts were brought together from health, municipal government, recreation, education, and non-profit sectors. This was further supported by district-level policies in the community from both school districts. These policies related to healthy eating, active living, physical activity, and positive social environments tied efforts together cohesively. Some of this work and partnerships were brought together by School Health Champions who held a knowledge brokering role. This role

was a key factor in the formation of partnerships. School Health Facilitators navigated the alignment of school needs with community services and resources and brought additional resources into schools to support health promotion efforts. Beyond the work that occurred in elementary schools (i.e., APPLE Schools), other education settings including daycares and preschools as well as the high schools adopted health promoting practices based on what was occurring in elementary schools. These changes were driven by students, teachers, principals, and superintendents demonstrating the high value placed on APPLE Schools.

The final ‘step’ noted was the positive rippling effect that schools had within the community. The impact felt by the community originated from changes made in schools, such as the need to serve and sell healthy food meeting provincial nutrition guidelines. As community businesses adapted their practices to partner with schools, grocery stores stocked a different variety of healthy foods and restaurants changed menu items to choices made with healthier ingredients (e.g., vegetables and whole grains). These changed practices effected not only the schools but the others in the community who were able to experience the same access to healthier choices. Afterschool care settings and non-profit led programming activities for children were impacted as natural extensions to the changes made in schools. These organizations closely aligned their food practices to mirror what was already being done in schools. Students were key drivers of these changes, and their advocacy influenced food vendors outside of APPLE Schools in local high schools. Ultimately, the changes that were made were part of the longstanding impact of APPLE Schools. Despite changes in the school system, such as staff turnover at school-level and school district-level, the community partnerships and changed practices were seen to be stable. Schools have more options to access support in the

community than ever before to promote healthy options for children and these health promoting practices are carried on in community businesses without question.

6.1.3 Objective 3 Summary

The purpose of objective 3 was to understand if and how schools that take a CSH approach have sustained and adapted their efforts in the face of adversity. Using data generated through semi-structured interviews and focus groups with school staff (n=22), questions sought to understand the adaptations made by schools to maintain health and wellness priorities during the COVID-19 pandemic. The period of data generation occurred over a year and captured changes navigated by schools, such as school closures, at-home learning and school re-openings. Three themes represent how schools promoted healthy school communities during the COVID-19 pandemic: 1) wellness was already a priority; 2) purposeful efforts to continue health promotion; 3) and recognition that (a culture of) wellness extends beyond the school. The CSH foundations (i.e., social and physical environment, teaching and learning, policy, and partnerships and services) were evident throughout each theme.

The establishment and integration of the APPLE Schools health promoting culture into the school environment was led by dedicated people and time which ensured health and wellness was a priority. School health Facilitators were key to initiate health promoting changes in schools, but student and staff buy-in were necessary to distribute the workload needed to promote CSH in ongoing years. Whole school activities and dedicated health and wellness learning time were influential to the social environment of the school and supportive of teaching and learning practices that embedded health practices into curricular elements. Addressing the health and wellness needs of the school community and setting out priorities led to pathways to purposefully continue these during changes in the school. More broadly, school district policies

that promoted wellness set out critical documents to guide school level activities during school upheaval.

Schools adapted to promote CSH initiatives throughout the pandemic and the resiliency of these activities was partly due to the perseverance of health champions. The priority of health and wellness in schools did not change but the ways in which this promotion occurred, did change. Some pre-existing activities carried on while still meeting health directives (e.g., social distancing and added sanitization) such as announcements, bulletin boards, snack programs, physical activity bins. However, this created additional work for the health champions in the school. Other health directives proved more difficult to work with. Separation of students into small sized cohorts made physical activity challenging but schools creatively repurposed spaces within the school and led a greater number of outdoor activities. CSH efforts adapted to school needs (i.e., increased mental health concerns) during the COVID-19 pandemic while building off of what was already being promoted in schools (e.g., mindfulness or breathing teachings).

Throughout the COVID-19 pandemic, schools promoted health within schools, as they typically did, and also ensured practices that reached children's homes were strengthened too. Having been identified as an APPLE School that provided access to healthy foods, schools sent food home to families due to higher rates of food insecurity experienced in the communities. School staff even carried forward teaching and learning practices to promote healthy eating and physical activities at home and were designed to be inclusive of whole families to foster social support for children to carry on health promoting practices at home. These efforts continued to be supported by partnerships with organizations in the community. As such, the whole school approach of CSH was carried on throughout the COVID-19 pandemic.

6.2 Interpretation of Findings

The findings from this thesis demonstrate a CSH approach, led by the APPLE Schools model of implementation, impacts the school and community environments. School staff and community partner perspectives brought together in this research have shown the health promoting efforts fostered in APPLE Schools extend with far reaching, health promoting impacts beyond schools that benefit children. Such impacts of the CSH approach include school environments that have a greater number of spaces to use for physical activity, dedicated learning time for mental wellness, and healthy food sold and served. Other impacts shared at the community-level were changed practices across all education settings in the community (i.e., daycares, preschools, afterschool care and high schools) as well as businesses and organizations that ordered healthier food to be stocked in grocery stores and changed menu items in restaurants.

This research further supports the interconnectedness of school, home, and community when taking a CSH approach and the added strength to school interventions when community is closely involved. Both school staff and community partners felt they had a role to play in supporting the healthy development of children. The findings from objective 1 highlight the embodiment of CSH to unique school contexts offers great success to meet school and community needs. When CSH approaches are adapted uniquely to each school community and work with local partners, effective solutions and practice-based changes are made to meet school needs. This objective showed the extension of CSH beyond school walls in the ways that schools worked with community partners and the reciprocal impact of the broader community on schools. Broader contextual influences outside the schools were also noted to play a large role in the ways that CSH was implemented in each school (i.e., geography, historical events, economic

climate). Though collectively across objectives, it was exemplified the importance of school-wide buy-in, district support, and embedded health and wellness practices as factors that contribute to the strength of a CSH approach across all schools. Particularly, these were crucial when navigating changes to the entire school system (e.g., the COVID-19 pandemic).

Objective 2 further supports why school autonomy (an essential condition of CSH implementation) (Storey et al., 2016) and a pathway to build strong community partnerships reciprocally support health and wellbeing of children and community members. This study provided novel insights from community partners that showed the community-level impact of the CSH approach. Built off of the understandings in objective 1, the reach and impact of CSH outside of the school and specific partnerships beyond the school were detailed. The community-level perspective was continually cited as a gap in the literature prior to this study (Jourdan et al., 2016; Langford et al., 2017) and to our knowledge, this is one of the first to be published in the literature.

Lastly, objective 3 provides evidence that an integration of health and wellness priorities into school culture and environment, and strong connections to the home and community sustain CSH implementation throughout adverse events and changing environments. The results demonstrate the CSH approach taken by APPLE Schools can endure changes to the school system during adverse events, such as the COVID-19 pandemic. For example, well-established school cultures that prioritized health and wellness were able to adapt and navigate changes throughout school closures, at-home learning, and the return to school with restrictive health directives. Overall, this adds to the literature demonstrating the effectiveness of the CSH approach and the impact on children's health promoting behaviours at school (Fung et al., 2012)

and health promoting behaviours at home (McKernan et al., 2019) and wholistically completes an understanding of CSH reach, impact, and sustainability.

6.3 Strengths and Limitations

Strengths and limitations of each individual study was provided in objective 1 (chapter 3), objective 2 (chapter 4), and objective 3 (chapter 5), therefore, overall the strengths and limitations to this thesis research in its entirety are provided in this section. This thesis demonstrated strength through rich descriptions in the results of each research objective and a purposeful and diverse sample across Canada. This was because of intentional efforts, such as close collaboration with APPLE Schools throughout each objective, to ensure purposeful sampling and multiple data generation strategies to detail context of CSH implementation. Relationships with APPLE Schools staff were built in objective one that fostered a greater contextual understanding of schools and shaped participant recruitment in subsequent objectives. Due to the COVID-19 pandemic, which occurred during the second and third research objectives, it was not feasible to conduct school-based research in the school environment. With the heavy burden faced by the school community as a whole (i.e., students, parents, and teachers), schools were not approachable for research purposes, nor were they allowed to let external members into the school environment. As a result, the children's perspective on the school and community connection has not been a part of this research. This research has implications for research, policy, and practice that will be detailed further.

6.4 Implications

The findings of this thesis provide a greater understanding of the impact of CSH approaches on the school and community environments and is one of the first studies to determine the reach of the CSH approach taken by APPLE Schools in Canada. This thesis has

shown that APPLE Schools can have far reaching impacts to promote children's health and wellbeing at school and outside the school. Schools taking a CSH approach, with the APPLE Schools model of implementation, can create health promoting school environments and practices that result in health promoting change in the community. This solidifies the school, home, and community connection which ultimately strengthens CSH theory and evidence. This research can be used to support everyday practices to integrate health promotion into schools and be used as evidence to advocate for greater support of school districts and district-wide policies to align support for the CSH approach.

This thesis will inform future research, practice, and policy related to CSH implementation but generally, will be useful to school communities looking to improve health promotion practices and better support health and learning outcomes of children. As shown in this research, CSH approaches need dedicated staff, resources, and time to fully change school culture and environments and when this occurs, the strength of health promotion efforts has great endurance throughout changes within and outside schools. Increasing school staff and school-district awareness of this research can further the uptake of this research into practice. The close connections with APPLE Schools in the research cultivated integrated knowledge translation throughout the thesis. This will be explored more below.

6.4.1 Recommendations for future research

This research filled a gap around the school and community connection and understanding about the impact to community through school staff and community partner perspectives. Notably, this research highlighted community partner perspectives, which were not present in published literature. While this thesis provides evidence into the reach of CSH within a select number of communities, future research should explore additional contexts at the

community-level to better understand this phenomenon. Additional research should explore the student perspective of the school and community connection as students are recognized changemakers (McKernan et al., 2019; Neely et al., 2020). In objective 1, it was demonstrated that students do hold a significant role, which was further supported in objectives 2 and 3, as students drove health promoting change in high schools and exemplified leadership during the COVID-19 pandemic (Objective 2 and 3 findings respectively). Understanding student leadership of CSH efforts could yield additional insight into the reach of CSH especially at the community level, as it is already understood students translate health promoting behaviours into the home environment (McKernan et al., 2019).

6.4.2 Recommendations for policy and practice

This research demonstrated well-established cultures of health and wellness in schools taking a CSH approach were supported through all foundational components of CSH: social and physical environments, teaching and learning, policy, partnerships and services (Joint Consortium for School Health, 2016). A key finding of this research is that this embedded culture allowed schools to maintain priorities of health and wellness during the COVID-19 pandemic. The ability for schools to navigate change with purposeful CSH implementation conditions, such as administrative leadership, dedicated health champions, professional development, and community support, reaffirms the importance of the essential conditions for successful CSH implementation (Neely et al., 2020; Storey et al., 2016). This provides greater knowledge into the sustainability of CSH approaches. These results suggest a greater uptake of CSH into school communities could be used as a pathway to promote health and wellness in schools during other disasters or disturbances within and outside the school system. Furthermore,

the importance of district-level support that prioritizes wellbeing is apparent and noted as a factor that can successfully promote cohesive expectations across the school community.

CSH does in fact reach the community and by taking a stepped approach as evidenced in objective 2, schools can find strength by building a strong culture of wellness as a foundation and working together closely with local community businesses and organizations. When schools set priorities and values of health promotion, the steps from objective 2 will help achieve more successful CSH practice. Importantly, this research suggests with strong connections, community practices have the potential to align with school efforts if there are strong connections. Thus, community support should be leveraged by school administration and staff. This can inform other school interventions and the expansion of CSH into both new and existing school communities. Particularly within APPLE Schools, the implementation staff are key knowledge users and advocates for advancing school and community partnerships in practice.

6.5 Knowledge Translation

An integrated knowledge translation (iKT) approach was used throughout the research with close involvement and collaboration with knowledge users, APPLE Schools. Regular meetings with the APPLE Schools implementation team comprised of the Executive Director, Implementation Manager, and School Health Mentors occurred to incorporate feedback into research and iKT processes. Knowledge translation efforts to share this research to school, academic, and practice-based audiences are underway. The findings of this research have been published in two peer-reviewed academic journals, which is evidence that APPLE Schools shares on their website as part of their strong research and evaluation component of implementation. Additionally, the findings from this research have been presented at seven conferences (five oral presentations and two poster presentations) to academic and practice-

based audiences, at local, provincial, and national levels. This research involved many school communities across western and northern Canada, but the findings are relevant to all schools taking a CSH approach. Two APPLE Schools evaluation reports have incorporated these findings and been shared to school communities with accompanying presentations to disseminate the research findings to the APPLE Schools implementation team. APPLE Schools will further assist in identifying presentation audiences and sharing reports within schools to principals, teachers, and staff, as well as posting reports on the APPLE Schools website and recognized communications platforms for the general public to view. Provincial audiences will be further reached through networks of Ever Active Schools and national level school audiences will be reached through the networks of the Canadian Healthy Schools Alliance and Physical Health Education Canada. In addition to reports and manuscripts already published, additional peer reviewed journal articles will be pursued to ensure that the results of this research are shared with more invested school audiences and the research community.

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Appendix A: Interview Guide

Modified Interview Guide included questions 3, 5, and 6

Demographic Questions:

Name	
Gender	
Age	
Occupation	
Name of Organization/Business	
Number of years as a resident of community	
Children who attend school	

APPLE Schools-related questions:

1. Can you tell me what you know about APPLE Schools?
2. How did you learn about APPLE Schools?
3. How did you/your organization become connected to supporting APPLE schools' initiatives/activities?
 - a. Who was it that reached out to you to invite you to become involved with supporting health and wellness at the school? Or did you reach out to the school?
4. How do you/your organization support school-based health promotion? (School-based health promotion is a way to support holistic health and wellness of children and youth and to empower them to choose healthy behaviours both at school and outside of the school.)
 - a. Can you tell me about any partnerships you have with schools or services you might provide to schools?
 - b. How does this work effectively?
 - c. Are there any barriers to supporting schools?
5. In what ways has APPLE Schools reached your community?
 - a. Can you tell me about how you have seen changes in the community because of APPLE Schools?
6. Are there any ways that you have changed your daily practices within your business/organization because of APPLE Schools? If so, why did you make this change?
7. Are there any ways that you would like to be more involved with the schools?