

Health Promotion: Strategies for Supporting Students with Intellectual and Developmental

Disabilities

by

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Abstract

The health of today's youth is a growing concern and students with Intellectual and Developmental Disabilities (IDD) are at greater risk due to sensory issues and pre-existing health issues that impact food related behaviours. Home Economics teachers face many challenges when it comes to supporting health promotion efforts in their schools and classrooms yet their role in these efforts is crucial in order to effectively foster and promote healthy eating and healthy habits. This study explored the question: What do Home Economics teachers know and need to know about supporting health promotion for students with IDD? Using a needs assessment methodology, I explored participants' current practice and compared the results with knowledge about 'best practice' from current literature in the field in order to investigate what could be done to improve health promotion for students with IDD. Themes investigated through coding and descriptive statistics were knowledge about students with IDD, the role of health and healthy food choices, long term health outcomes, teaching strategies and lessons, food literacy and essential skills, challenges and barriers to health promotion, and curriculum and guidelines related to food and health. One of the study's key findings is that in order to implement effective health promotion strategies and interventions, Home Economics teachers need more opportunities to collaborate with colleagues, families, and the community, as well as more professional development specific to addressing health, healthy eating, and cooking skills for students with IDD through the use of Evidence-Based Practices (EBPs).

Keywords: Ecological Framework for Food Choices, Evidence-Based Practice, food literacy, health promotion, Intellectual and Developmental Disabilities, needs assessment, Person-Environment Fit Model, systemic change, Social Cognitive Theory, whole school approach

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Dedication

This research study is dedicated to the students of Inclusive Foods 11/12, 2014-2016 who were the inspiration for my continued learning in Special Education and this research study.

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Definition of Key Terms

Adaptive behaviour - is defined as three types of skills: conceptual skills, social skills, and practical skills (British Columbia Ministry of Education, 2016, pp. 41-42).

Collective self-efficacy - "builds collective voice, empowerment, and self-advocacy, increases group and self-directedness, and can promote social change" (Bandura, 1994 as cited in Marks & Sisirak, 2014a, p. 49).

Computer Based Instruction/Computer Based Video Instruction (CBI or CBVI) - an instructional intervention which uses computer programs and videos to deliver training and instructional materials to students in an interactive format (Ayers & Cihak, 2010).

Developmental Disability (DD) - "is a broader term which intellectual disability falls under. It refers to both neurological and physical limitations that are present before birth or in childhood creating life-long challenges" (Davis et al., 2014, p. 8).

Disease burden - "considers health, social, political, environmental and economic factors to determine the cost that disease and disability exert upon the individual and society" (Centers for Disease Control and Prevention, 2021, slide 5).

Ecological Framework for Food Choices (EFFC) - "is a useful guide for understanding how people with intellectual disabilities make food choices and creating environmental and social changes that will allow people with intellectual disabilities to actively participate in food planning, purchasing, and preparation within their communities" (Marks & Sisirak, 2014a, p. 44).

Ecological Model - focuses on changing the individual by first recognizing and changing social and environmental factors that may be contributing to unhealthy lifestyles (Marks & Sisirak, 2014b, p. 23).

External validity - "refers to the degree to which the results can be generalized to the wider population, cases, settings, times or situations" (Cohen, 2018, p. 254).

Food literacy - "is the scaffolding that empowers individuals, households, communities or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet needs and determine intake" (Vidgen & Gallegos, 2014, p 54).

Foodscape - is a socially constructed perspective of the field of food that includes any places where the population is exposed to messages about food (home, school, grocery stores, restaurants, street, online media, traditional food environments). It focuses on the interconnections between people, food, and places while highlighting the complexity of the food system (Vonthron et al., 2020, p. 15).

Food selectivity - is a problematic food behaviour in which an individual might refuse food offered to them more than 33% of the time, have a limited food repertoire, or have a high frequency eating one food exclusively (Bandini et al., 2016; Curtain et al., 2015).

Guidelines, Recommendations, Adaptations Including Disability (GRAIDs) - a tool and framework used to adapt evidence-based health promotion programs to include individuals with disabilities. The GRAIDs are broken down by potential changes in five inclusion areas: built environment, services, instruction, equipment and technology, and policy (National Center on Health, Physical Activity and Disability, n.d.).

Health - "is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948, Constitution).

Health Belief Model (HBM) - a theoretical framework used to guide health promotion and disease prevention interventions. It proposes that six components predict health behaviour in individuals: risk susceptibility, risk severity, benefits to action, barriers to action, self-efficacy, and cues to action. This model hypothesizes that individuals will take action if they believe they are at risk of certain health conditions (Jones et al., 2015, pp. 566-567).

Healthy school approach - this "approach incorporates the whole school, including teachers, support staff and cooks, as well as health professionals and the wider community. At the hub of this approach are the young person and their family" (Stewart & Taggart, 2014, p. 160).

Intellectual Disability (ID) - is defined as "...general intellectual functioning significantly below the mean, as well as significant limitations in adaptive functioning in at least two of the following areas as appropriate to the student's age: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health and safety". Intellectual disabilities can range from mild to profound (British Columbia Ministry of Education, 2016, p. 41).

Individual Education Plan (IEP) - "...is a document plan developed for a student with special needs that describes individualized goals, adaptations, modifications, the services to be provided, and includes measures for tracking achievement" (British Columbia Ministry of Education, 2016, p. v).

In-vivo - indicates that something has been tested on live people and results have been observed (Ayres & Cihak, 2010, p. 200).

Obesogenic - "promoting excessive weight gain: producing obesity" (Merriam-Webster, n.d.).

Person Centered Planning (PCP) - the process where the student, family, teacher, and school team collectively envision a child's life over time in order to avoid limiting the discussion of interventions, aids, and supports to those that are currently available (Thompson et al., 2010, p. 174).

Person-Environment Fit Model (PEFM) - disability should be viewed as a poor fit between an individual's capacities and the environment or setting rather than as a defect in the person themselves (Thompson et al., 2010, p. 169).

Positive Behaviour Supports (PBS): also referred to as Positive Behavioural Interventions and Supports (PBIS) "is characterized by the use of evidence-based practices, adaptation of these practices to fit the local context, a tiered approach to service delivery, an instructional approach to changing behavior, use of data for decision making, and consideration of the various systems in individuals' lives (e.g., schools, families, communities)" (McIntosh, 2014, p. 155).

Positive Behaviour Support Plan (PBSP) - "is a comprehensive plan that outlines function-based strategies within the following areas: ecological/setting, preventative, teaching, and reinforcement strategies. The strategies should decrease challenging behaviours and increase appropriate functionally equivalent behaviours" (North Vancouver School District, n.d.)

Problem of practice - "is a persistent, contextualized, and specific issue embedded in the work of a professional practitioner, the addressing of which has the potential to result in improved understanding, experience, and outcomes" (CPED, 2016, The Framework).

Research-based practices - are practices that are informed and developed based on the foremost research available in a particular field. Teachers can trust that these practices and programs are supported by a strong scientific foundation for their use but unlike EBPs, research-based practices have not been studied in context to look for positive results in student outcomes (Aperture Education, 2021).

Self-efficacy - is one of the four components of Social Cognitive Theory and "refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given levels of attainment" (Bandura, 1998, p. 624). Self-efficacy allows individuals to exert a measure of control over their thoughts, feelings, and actions, that "what people think, believe, and feel affects how they behave" (Bandura, 1986, p. 25).

Sensory Processing Disorder (SPD) - a disorder in which individuals have problems processing and responding to information that comes from touch, movement, smell, taste, vision, and hearing. SPD can negatively impact an individual's adaptive behaviour and ability to perform daily tasks (Engel-Yeger et al., 2015; Healthwise, 2021).

Smarter Lunchroom - "behavioural economics and principles of behavioural science that guide recent efforts to steer students to better choices by making low or no-cost changes to the cafeteria environment" (Hubbard et al., 2014a, p. 362).

Social Cognitive Theory (SCT) - "specifies a core set of determinants, the mechanisms through which they work, and the optimal ways of translating this knowledge into effective health practices". The core determinants include knowledge, perceived self-efficacy, outcomes expectations, goals, perceived facilitators, and impediments (Bandura, 2004, p. 144).

Social validity - draws attention to the social significance of the goals, the social appropriateness of the procedures, and the social importance of the effects of any intervention (Elliott, 2017, p. 270).

Screening Tool of Feeding Problems (STEP) - consists of 23 items in five different categories of feeding problems found in the literature and is used to identify eating/feeding problems in individuals diagnosed with IDD (Engel-Yeger et al., 2015, p. 19).

Short Sensory Profile (SSP) - is a shorter version of Dunn's Sensory Profile and is used as an assessment instrument for measuring how sensory processing issues can affect an individual's ability to perform functions of everyday life (Engel-Yeger et al., 2015, p. 20).

Universal Design for Learning (UDL) - a framework that allows all students to achieve learning goals by designing the environment, materials, and activities to meet the wide differences in abilities that exist in classrooms (Thompson et al., 2010, p. 171).

Video Based Instruction (VBI) - videos of teacher instructions, scenarios or skills that students can view in order to learn new skills and analyze instruction (Bassette et al., 2019; Sun & Brock, 2022).

Chapter One: Introduction

Proper nutrition is necessary for the growth and development of children and adolescents (Zhu & Dalby-Payne, 2019, p. 1306). Current research indicates that proper intake of healthy foods and beverages in children and youth has a positive impact on both their physical and mental well-being and abilities, instills healthy eating habits that will carry on into adulthood, and reduces the risks of illness and disease in both childhood and later life (Government of Canada, 2015, p. 5). Educating children and adolescents about healthy food choices, and the planning, shopping and preparing of healthy meals is an important life skill that can be learned in any setting and will contribute to the development of lifelong healthy eating habits (Granberg et al., 2017a; Health Canada, 2019a; Health Canada, 2019b; Sadegholvad et al., 2017). Learning these life skills begins first at home, and then in school. Families, other caregivers, and teachers have a crucial part to play in the encouragement of healthy habits in our youth (World Health Organization, 2016, p. 7). Adolescents learn from watching others, which suggests that all school staff and parents need to be positive role models and have positive attitudes towards healthy eating (Ronto et al., 2016b, p. 17). Students need guidance to make healthy choices but they also need a sense of independence. All people have the intrinsic desire to have agency in their lives and to be connected to other people; individuals will accomplish more and have fuller lives when this need is met (Pink, 2009, p. 71). It is then important for both educators and families to create a positive and enjoyable food environment where students can practice skills and explore healthy foods through trial and error in order to develop nutritious eating habits that suit their individual needs.

However, learning to select food that is nutritious and healthy requires regular experiences with healthy food which not all children and adolescents have available to them. It

also requires the knowledge, motivation, confidence, and skills that will allow individuals to develop a taste for eating nutritious, healthy foods as well as a habit for cooking these foods. Critical thinking is a necessary skill in order to make appropriate choices about food; students need to question societal norms, media messages, and marketing techniques in order to be informed consumers (Ronto et al., 2016b, pp. 15-16). The ability to make connections between food choices and their impacts on the food system, society, and health is also very important (Velardo, 2015, p. 387). There are many personal and external barriers that can make healthy food choices challenging for people; an individual might want to act in a healthy manner, but not be able to follow through with this behaviour (Vamos et al., 2021, p. 652). Therefore, I believe that having the essential skills, knowledge, attitude, and behaviours related to food can assist students in overcoming these barriers and achieving a healthier lifestyle.

Health and Healthy Eating

Healthy eating habits include what a person eats, what is consumed, its quality and composition, as well as a variety of eating situations (Vamos et al., 2021, pp. 650-651). Healthy eating is also about being mindful of eating habits including the reasons surrounding how and why we eat (Health Canada, 2019a, p. 49). Section One of *Canada's Dietary Guidelines for Health Professionals and Policy Makers* (Health Canada, 2019a) states that healthy foods that nourish our bodies are the backbone of healthy eating which includes eating items such fruits, vegetables, whole grains, plant-based proteins, and water (p. 9). Section Two highlights the fact that overly processed, high sodium, high fat, and high sugar foods and beverages should be eaten infrequently as they sabotage healthy food habits (p. 22). Both *Canada's Food Guide* and *Canada's Dietary Guidelines for Health Professionals and Policy Makers* are valuable resources to assist Canadians with healthy eating habits.

A healthy diet has a positive impact on overall health outcomes. The World Health Organization (2020) highlights the benefits of healthy eating; a well-balanced healthy diet protects against various issues associated with malnutrition as well as preventable disease such as cancer, heart disease, stroke and diabetes (Key Facts). Healthy eating habits in children and adolescents have a positive impact on growth, cognitive development, and other aspects of health and wellbeing, including energy, weight and self-esteem (Government of Canada, 2015; Sadegholvad et al., 2017).

Neurodiversity: Its Impact on Health and Healthy Eating

Youth with Intellectual and Developmental Disabilities (IDD) have a wide range of challenging eating behaviours that can lead to inadequate nutrition, obesity, and other chronic diseases (Bandini et al., 2019; Bandini et al., 2021; Engel-Yeger et al., 2015; Hinckson et al., 2013). Research has shown that obesity and chronic health conditions ranging in severity, including nutritional rickets and decreased bone health, are related to various challenging food behaviours in students with IDD (Bandini et al., 2019; Bandini et al., 2021; Engel-Yeger et al., 2015; Hartman & Silver, 2020; Hinckson et al., 2013). Engel-Yeger et al. (2015) suggests that 97% of children with IDD demonstrate some form of challenging eating or feeding behaviour that has been shown to result in nutritional problems (p. 18). These challenging food related behaviours may exist due to underlying causes such as behavioural issues, pre-existing conditions, medications that affect appetite, and organic or anatomical issues (p. 18). Research is just starting to explore the influence of challenging eating behaviours on the health and well-being of students with IDD (p. 19).

Overweight and obesity are a major health concern for children and adolescents with IDD around the world, and health education programs and interventions targeting this vulnerable

population are desperately needed to address these issues (Hinckson et al., 2013, p. 1171). For children and adolescents with IDD, learning to cook can be a life skill that allows them to become more autonomous and less dependent on other people for meals or the use of unhealthy processed foods (Granberg et al., 2017a, p. 494). This makes teaching this vulnerable and marginalized population the skills to cook even more essential (Granberg et al., 2017b, p. 1074). A key factor for success is that the programs that teach them these skills need to be delivered by people with the correct expertise, and the activities must be appropriate to the needs and abilities of the students (Hinckson et al., 2013, p. 1177).

The current foodscape of the world is complex and nutritional information can be confusing and misunderstood by the vast majority of people (Slater, 2013; World Health Organization, 2016). Children and adolescents with IDD have impaired cognitive function and adaptive behaviour; they also have additional limitations that impact behaviour, oral motor and sensory abilities. All of these challenges together can negatively impact their daily lives and activities associated with healthy habits (Bandini et al. 2021, p. 899). Without the knowledge and ability to understand what constitutes balanced nutrition, it is clear why this population would be at a much greater risk of making unhealthy food choices resulting in nutritional inadequacies. Individuals with IDD need to be empowered to make healthier food choices but this is not possible "unless nutrition literacy is universal and provided in a manner that is useful, understandable and accessible to all members of society" (World Health Organization, 2016, p. 17).

School Context

Nutrition and the consumption of healthy foods should be a priority for all schools (Lavelle et al., 2016; Scott & Haverkamp, 2016; Stewart & Taggart, 2014; World Health

Organization, 2016; World Health Organization, 2020). A school wide approach is necessary in which all staff are positive role models and the school food environment reflects dietary guidelines that go above and beyond the recommendations described in the *Guidelines for Food and Beverage Sales in BC Schools* in order to create an environment in which all students are food literate (Dedicated Action for School Health, 2022). Food is connected to many competencies and concepts from multiple subject areas (British Columbia Ministry of Education, 2021b); healthy eating should be promoted across the curriculum to provide students many opportunities each day to develop food literacy in all aspects of schools (Dedicated Action for School Health, 2022). A school can reduce preventable health related illness and have a positive impact on physical fitness, healthy eating, healthy relationships, and healthy practices by using a school wide approach that also creates a culture of caring, responsible students (British Columbia Ministry of Education, 2020, p. 9).

Creating the foundations for healthy eating in students with IDD needs to start early on in their education. The B.C. curriculum for *Applied Design, Skills and Technology* (ADST) (British Columbia Ministry of Education, 2021a) spans kindergarten to Grade 12, but many school districts do not offer Home Economics or Food Studies as a part of the curriculum until Grade six. When children enter the school system it should include a health promoting school culture and instruction in health and nutrition at every grade level (World Health Organization, 2016, p. 17). Healthy eating habits and the ability to prepare healthy meals are two elements of healthy living that have positive benefits for all children and adolescents, regardless of ability, now and in the future.

Home Economics classes give students an environment where they can learn, develop, and apply food skills and nutrition knowledge, but research indicates that

...little is known about whether school environments work for or against health outcomes for youth with I/DD. Barriers to the inclusion of youth with I/DD in school-based health promotion efforts include a lack of understanding of how to adapt existing evidence based programmes to their needs, maximize inclusion and support mutual goals of health and autonomy. (Hubbard et al., 2014b, p. 577)

At this time there is a noticeable absence of evidence-based health promotion programs for children and adolescents with IDD (p. 576). This issue highlights the need to remedy this disparity and find ways to best translate this essential knowledge and skill set to these students.

Benefits of Instruction in Home Economics and Food Literacy

For many years Home Economics teachers have been tasked with imparting food skills and nutrition knowledge to young people in the school environment but food literacy is a newly emerging concept that needs to be incorporated into the curriculum (Ronto et al., 2016b, p. 12). Food literacy is a popular term in both health promotion initiatives and educational interventions that is meant to benefit the health of individuals through increased food knowledge and cooking skills (Truman et al., 2017b, p. e211); a recent study indicates that Canadians are 91% in favour of food literacy being taught in schools (Dalhousie University, 2021). Helen Vidgen and Danielle Gallegos' (2014) definition of food literacy, which is the most often cited in the literature, defines food literacy as

...the scaffolding that empowers individuals, house-holds, communities or nations to protect diet quality through change and strengthen dietary resilience over time. It is composed of a collection of inter-related knowledge, skills and behaviours required to plan, manage, select, prepare and eat food to meet needs and determine intake. (p. 54)

Canada's Dietary Guidelines for Health Professionals and Policy Makers (Health Canada, 2019a) suggests that food literacy and food skills are critical components in health promotion strategies aimed at developing healthy eating habits in order to prevent people from falling victim to the easy to make, highly processed foods that are all too prevalent in today's food environment (p. 31). Food literacy can increase students' ability to be aware of and reflect on their own eating habits while also providing instruction on food security, cooking skills, healthy habits and healthy food choices that can increase their confidence and ability to increase agency in their health (Vamos et al., 2021, p. 652).

Education in food literacy has the potential to support healthy eating and positive health outcomes (Ronto et al., 2016a; Ronto et al., 2016b; Velardo, 2015) and as illustrated by Fordyce-Voorham (2011),

...home economics teachers have a significant role to play in adolescents' lifelong learning about healthy dietary behaviours. They have the nutritional background and pedagogical expertise to provide food literacy education to adolescents, including a background in practical food preparation skills, which makes them well placed to enhance adolescents' food literacy. (Ronto et al., 2016b, p. 12)

Having a better understanding of Home Economics teachers' perspectives on teaching food literacy in schools will help to shed light on their most beneficial role in supporting students with healthy habits; this increase in awareness will help to clarify any speculation in the literature, and reveal how to increase support for this essential learning (p. 12).

Challenges to Change

The modern food environment often promotes access to easy to make, unhealthy foods and inactive lifestyles (World Health Organization, 2016, p. v). Many students arrive in class

with little to no understanding of food preparation, proper equipment use, food terminology, food safety or proper nutrition (Slater, 2013, p. 621). This lack of knowledge can be, in part, attributed to two issues, 1) fewer people are cooking meals from scratch due to the vast increase in the availability of ultra-processed food products that require little time and skill to 'cook', and 2) the decreased transfer of food skills and nutritional knowledge from parents, caregivers, and family to children and adolescents in the home environment (Health Canada, 2019a, p. 32). It is the responsibility of Home Economics teachers to create conditions for students to do their best work (Pink, 2009, p. 85), and to cultivate the essential skills that are required in order to successfully negotiate their way through this obesogenic food environment and develop healthy eating habits (Health Canada, 2019a, Section 3).

While teachers may not be able to address many of the underlying causes of challenging eating behaviours in students with IDD, from the perspective of public health it is important to identify the factors that can be addressed through interventions in order to create optimal health outcomes for this population that is already increasingly at risk (Lindly et al., 2020, p. 389). Hubbard et al. (2014b) describes a common problem regarding the strain on teachers' time when it comes to collaborating, planning, and implementing programs for exceptional learners; the authors

...posited that schools likely represent the optimal venue for the delivery of nutrition programmes for youth with intellectual and developmental disabilities, but remarked on the labour-intensive aspects of collaboration which included a reliance on the special education teachers to adapt and implement the programme. (p. 586)

This statement illustrates some common themes in Special Education: 1) many techniques are too time consuming to be implemented properly, and 2) teachers are often overwhelmed when

trying to implement new techniques or approaches that they are not familiar with which leads to ineffective outcomes (Cook & Schirmer, 2003, p. 203). Bandura (2004) suggests that schools and teachers are not able to take on the added responsibility of early interventions to modify bad habits and properly promote health due to the lack of resources, training and incentives (p. 158). The composition of school classrooms also impacts teachers' ability to effectively promote health; the needs and abilities of students with IDD are often very diverse and this requires Home Economics teachers to constantly shift their perspectives on what they want students to learn, how they teach it, and how to factor in all the other influences that impact the learning environment in order for the learning to be accessible to all.

Personal Context

Being a Food Studies teacher, I have a lot of experience interacting with students through the medium of food. I believe my research topic is significant because eating and feeding are behaviours children and adolescents must do every day in order to develop and grow into healthy adults. I aim to encourage all of my students to be making healthier food choices by the time they leave my course than they did when they arrived.

My interest in researching nutrition and healthy food choices for students with IDD started two years ago when a colleague and I created an Inclusive Foods course at our school. We structured the class around teamwork, building community, creating common interests, and learning both kitchen and gardening skills. We ran this course four times over a two-year period and it was amazing to watch all the students work together, gain confidence in the kitchen, and expand their social-emotional skills. The simple daily activity of eating is often impaired in children and youth with IDD (Engel-Yeger et al., 2015, p. 17); this impairment created a challenge in running this course as this limited the range of food choices that I could offer, with

students' particular preferences for high fat or high sugar foods. Some of the characteristics associated with Autism Spectrum Disorder (ASD) are a strong dislike of change and a limited scope of interests, both of which could factor into the students' eating habits (Lázaro & Pondé, 2017, p. 181). Research indicates that higher rates of food selectivity in children with IDD often coincides with a diagnosis of ASD which explains what I was seeing in my classroom (Bandini et al., 2019, p. 439). Intellectual and Developmental Disabilities are common, and are associated with many pre-existing health challenges, which make it essential that this population of students is taught about nutrition, healthy food choices, and basic cooking skills to create a healthy relationship with food and to avoid added health issues.

Moving Forward

From a Special Education perspective, researching healthy food choices and nutrition for students with IDD is important not only for the general health of these students but also to create more inclusive Food Studies classrooms and more accessible activities and content. It is important for teachers of students with disabilities to identify the needs and abilities of the students in order to modify tasks and make the learning accessible allowing them to acquire essential food skills (Fordyce-Voorham, 2011, p. 119). This vulnerable population of students needs the opportunity to work on these skills more frequently at school because in a group situation they will often let others take over and at home they may not be able to practice these skills (p. 119). Teachers, especially Special Education teachers, aim to improve the confidence, abilities, independence, and quality of life of their students. For students with IDD, teachers must foster an intrinsic drive to develop autonomy, mastery, and purpose in all areas, but especially health and nutrition in order to lead healthy and rewarding lives. Even minor efforts to increase healthy behaviours in students with IDD can have a lasting impact on their health, quality of life,

independence and contributions to society (Ipsen, 2012, as cited in Hubbard et al., 2014b, p. 576).

It is important to create a holistic approach to intervene and treat inappropriate food behaviours before nutrition deficiencies create significant health issues. Many parents are unaware of the risks of unhealthy eating patterns; some parents may not even be aware of why their child is demonstrating certain challenging behaviours around food; teachers may not understand the food habits students with IDD are demonstrating in their classrooms. Supporting food literacy and healthy food choices for students while educating families and teachers is essential for consistency in health promotion efforts.

Granberg et al. (2017b) state that students who attended regular schools, as opposed to schools specifically for students with IDD, had similar struggles in Home Economics as the students with IDD (p. 1075). As Cook and Schirmer (2003) state, "techniques that are effective for students with disabilities are generally effective for all students. The techniques, practices, procedures, and in many cases, the content [especially in Home Economics], are appropriate for most, if not all learners" (pp. 202-203). The World Health Organization (2016) indicates that society must act quickly in order to protect and improve the health of current and future generations (p. 60). Food literacy can be a key strategy in this health promotion effort (Ronto et al., 2016a; Truman et al., 2017b; Vamos et al., 2021; Vigden & Gallegos, 2014); the literature suggests that food literacy education efforts, as they apply to health outcomes, are not being implemented effectively (Truman et al., 2017a, p. 365).

Study Overview

This research study focused on the following question: What do Home Economics teachers know and need to know about supporting health promotion for students with IDD? The

purpose of the study was to examine the instructional practices of Home Economics teachers, the essential skills required for students, and barriers to educating students with IDD in Home Economics. By identifying issues and analysing gaps in understanding, I endeavoured to create knowledge that would inform the field of literature about the current practice of instruction. The outcome of this research has the potential to contribute to an understanding of effective practices and learning needs for Home Economics teachers that can inform teacher training programs and professional development.

The research methodology used was a needs assessment where the identified needs indicated gaps between current outcomes and intended outcomes (Watkins et al., 2012, p. 19). Participants were Home Economics teachers from across B.C. who were recruited from the Teachers of Home Economics Specialist Association (THESA) Facebook page. A concurrent mixed methods survey was the data collection tool. The quantitative questions engaged participants with the topic by comparing their practice with recommendations from literature in the field while the qualitative questions gathered insight on specific lessons and strategy ideas being implemented to encourage motivation for healthy eating, strategies for supporting food literacy, and practices for teaching food skills, for both students with IDD and their peers who are typically developing. Descriptive statistics allowed data to be summarized, organized, and presented visually to reflect the participant's perspectives on various components related to teaching both the subject of Home Economics, and teaching students with IDD.

The epistemology of this study leaned toward positivism, as its goal was to understand the trends and commonalities of the teaching practice and knowledge of Home Economics teachers in B.C. In addition to quantitative questions, some qualitative questions investigated participants' perspectives on specific lesson and strategy ideas for encouraging motivation for

healthy eating, strategies for teaching food literacy, and practices for teaching food skills for all students, especially those with IDD.

This study had some limitations. Although there was a wide variety of perspectives (i.e., years of experience and grade levels taught) in the participant population, the sample size was too small to make the results generalizable. Another limitation was the construction of the survey as it was important to not only make the survey an appropriate length but also to make sure the questions were clear to participants and would collect the specific data required to answer the original research question. Bias could have been considered a limitation in this study because the qualitative data collected was highly subjective. Responses to the survey were self-reported with no researcher present which meant the answers provided by the participants were neither observable or confirmable. However, even though there were some limitations to this study, it is hoped that the results are valuable to Home Economics teachers. I believe the findings could be applicable for directing teacher education in the area of food literacy, Evidence-Based Practices (EBPs) for health promotion and healthy eating, and in raising awareness about the importance of education for healthy eating with teachers of students with IDD.

Summary

In this chapter I have outlined the importance of healthy eating and illustrated the necessary guidance and skills students require to achieve healthy habits. The impact of neurodiversity on health and healthy eating is discussed, and the role of schools, including the benefits of instruction in food literacy and Home Economics, is provided as a means to support health promotion for students with IDD. This chapter also summarized many challenges to overcome in order to make changes and how we can move forward to better support health promotion efforts. Chapter one concludes with an overview of my research study. In chapter two,

the topic of health promotion for students with IDD is further examined through the lens of Social Cognitive Theory (SCT). The chapter provides a review of both existing literature and current research studies in order to describe the impact of nutrition on health and why health promotion is important. The literature review provides an overview of the needs of students with IDD, the various roles involved in health promotion efforts, and promising strategies to support health promotion, as well as identifies gaps in knowledge related to this field of study. This chapter concludes with a description of the purpose of this study.

Chapter Two: Literature Review

This chapter provides an understanding of literature that informs the field of study surrounding nutrition for positive health outcomes, and more specifically, health promotion for students with Intellectual and Developmental Disabilities (IDD). The role of individuals, schools, and communities in health promotion as well as the reasons for implementing health promotion are outlined. A variety of current research studies are included with the aim of establishing an understanding of existing knowledge about the health needs of students with IDD and strategies to support health promotion in this population. This comprehensive review of literature in this field concludes by identifying gaps in knowledge relating to health promotion for students with IDD.

Foundational Sources

Albert Bandura: Social Cognitive Theory

Social Cognitive Theory (SCT) is commonly used in the fields of health education and health promotion in order to understand food related behaviours and how to change these behaviours for the better (Marks & Sisirak, 2014a, p. 45). Bandura (1998) believes that because health habits are formed when we are young, it is easier to intervene in negative habits earlier rather than later in order to prevent these habits from persisting and causing lasting detrimental health consequences (p. 643). Schools do play a central role in health education of students yet Bandura recommends that

...health promotion must be structured as part of a societal commitment that makes children's health a matter of high priority. A serious commitment must provide the multidisciplinary personnel and the resources needed to foster the health of its youth.

This requires creating new school-based models of health promotion that operate in concert with the home, community and the society at large. (p. 644)

Concepts of autonomy, purpose, mastery, confidence, self-determination, and self-management are integral to Bandura's Social Cognitive Theory. Respect for autonomy is a serious ethical consideration when it comes to health promotion in children with IDD. Autonomy requires the freedom to make decisions and take action (Heng & Sullivan, 2014, p. 207) which is often a balancing act with duty of care (Hubbard et al., 2014b, p. 587).

Bandura's 1998 research highlights a growing body of evidence indicating that confidence is an overtly powerful factor in determining one's health and ability to act in healthy ways (Marks & Sisirak, 2014a, p. 49). This fact demonstrates that the school environment and Home Economics teachers need to be equipping students with the essential skills and knowledge they need in order to have confidence in their ability to make healthy dietary choices. SCT is an appropriate lens through which to view health promotion in education because schools cannot be the sole catalyst to changing dietary habits and nutrition in today's youth. Bandura (1998) states that

...if we are to contribute significantly to the betterment of human health we must broaden our perspective on health promotion and disease prevention beyond the individualistic level. This calls for a more ambitious socially-oriented agenda of research and social practice. We can further amplify our impact on human health by making creative use of evolving technologies that enhance the scope and strength of health promotion efforts. (p. 647)

In his article *Health Promotion by Social Cognitive Means*, Bandura (2004) describes human health as a social concern rather than an individual concern; he further explains that

comprehensive health promotion "requires changing the practices of social systems that have widespread effects on human health" (p. 143). This notion could help to remove some of the impediments to healthy living that exist in society. Collective self-efficacy can help to create social change that raises awareness of health risks, educates the public and policy makers, advocates initiative and policy changes, and creates appropriate methods for the improvement of health conditions in society (Bandura, 1998, p. 646).

Health, Health Concerns, and the Need for Health Promotion

The World Health Organization (WHO) defines health as a "resource for everyday life, not the object of living. It is a positive concept emphasizing social and personal resources as well as physical capabilities" (Nutbeam, 1998, p. 1). Research shows that individuals with IDD experience many challenges that impact their ability to achieve positive health outcomes yet these challenges should not exclude them from leading healthy lives. *Article 25* of the United Nations (UN) Convention on the Rights of Persons with Disabilities (2006, p. 18) "recognizes that persons with disabilities have the right to the enjoyment of the highest attainable standard of health without discrimination based on disability." These documents provide the legal framework for supporting health in people with IDD in order to prevent illnesses (Heng & Sullivan, 2014, p. 204).

Intellectual Disability (ID) is defined as having extensive limitations to both intelligence and age appropriate behaviours that impact many aspects of everyday life. ID can be categorized into mild, moderate or severe/profound depending on the level of an individual's Intelligence Quotient (IQ) (Davis et al., 2014, p. 8). Developmental Disability (DD) on the other hand is a broader term that intellectual disability falls under; it refers to both neurological and physical limitations that are present before birth or in childhood that create life-long challenges for an

individual (p. 8). The Person-Environment Fit Model (PEFM) of disability promotes the idea that disability should be viewed as a poor fit between an individual's capacities and the environment rather than as a defect in the person themselves (Thompson et al., 2010, p. 169). This less traditional perspective of IDD may be ideal for health promotion efforts in this population of students because it puts significant emphasis on understanding the strengths of the students and the context in which they need to function in order to have them meaningfully participate in the school environment and activities (p. 170). Research indicates that

...people with intellectual disabilities suffer from significantly more health problems than the general population and are much more likely than other citizens to have significant health risks and major health problems. Nevertheless, there is considerable evidence that people with intellectual disabilities are not receiving the same level of health education, health promotion opportunities, and health screening as other members of society. (Cousins & Taggart, 2014, p. 1)

This research highlighted a significant flaw in how society is supporting this vulnerable group of people. In order to empower and increase the self-efficacy of individuals with IDD, they need to be provided working knowledge of health, healthy eating, and healthy lifestyle habits to allow them to better advocate for and work towards their own health goals (Scott & Havercamp, 2016, p. 64).

Healthy eating is especially important in children as it leads to positive long-term health outcomes and helps to prevent diseases related to poor nutrition (Wyonch & Sullivan, 2019, p. 3). Many children and adolescents with IDD have diets that are high in fat and calories, and low in fruits and vegetables leading to issues with overweight or obesity (Northway & Slevin, 2014; World Health Organization, 2016). Persistent malnutrition puts people at risk for infection and

illness; it can cause health issues that impact bones, muscles, mobility, and lead to morbidity or untimely death rates in people with IDD (Davis et al., 2014, p. 10). The World Health Organization (2020) recognizes that

...diet evolves over time, being influenced by many social and economic factors that interact in a complex manner to shape individual dietary patterns. These factors include income, food prices (which will affect the availability and affordability of healthy foods), individual preferences and beliefs, cultural traditions, and geographical and environmental aspects (including climate change). Therefore, promoting a healthy food environment - including food systems that promote diversified, balanced and healthy diet - requires the involvement of multiple sectors and stakeholders, including government, and the public and private sectors (How to Promote Healthy Diets, para. 1).

My survey of available literature has demonstrated that children and adolescents with IDD and their families are more likely to have poor health and experience negative health consequences compared to children who are typically developing including lower quality of life, lower school attendance and academic performance, lower wages earned, and lower life expectancy (Davis et al., 2014; Hinckson et al., 2013; Lindly et al., 2020). The health of children and their parents or caregivers is linked yet there is little research on the health knowledge of families in relation to health outcomes in children with IDD (Lindly et al., 2020, p. 402). This lack of evidence illustrates the need for health promotion for young people with IDD as well as their families.

Currently, the existing research on the eating and feeding issues of children and youth with IDD is scarce (Bandini et al., 2019, p. 433), but the work of Reinoso et al. (2018) highlights that these issues in children with Autism Spectrum Disorder (ASD) are now at the forefront of pediatric therapy, making it a worthwhile field of research (p. 40). I believe it follows then that

there is also value in researching the challenging eating behaviours of children and adolescents with IDD in order to better support their nutrition and health so that they can grow and develop to the best of their ability. Having a better understanding of and acting on the barriers that make it challenging for students with IDD to acquire cooking skills and make healthy food choices is a key component in order for them to advance in all areas, including school, job attainment, health care, self-sufficient living, and inclusion in their communities (Hubbard et al., 2014b, p. 576).

The WHO is concerned about the state of health in the world's population but especially the health of young people. Globally, childhood obesity and non-communicable diseases related to diet are rising at a rapid rate; the WHO is very committed to improving health on a global scale (Nutbeam, 1998; World Health Organization, 2008; World Health Organization, 2015; World Health Organization, 2016). Slater (2013) explains that an increase in the amount of research indicates that the normalization of unhealthy, convenience foods and busy lifestyles paired with a population lacking in cooking abilities is a detriment to the health of current generations and those to come. (p. 623); Nutbeam (1998) explained that health promotion efforts can help combat these issues in his statement that...

Health promotion represents a comprehensive social and political process, it not only embraces actions directed at strengthening the skills and capabilities of individuals, but also action directed towards changing social, environmental and economic conditions so as to alleviate their impact on public and individual health. (p. 1)

The literature demonstrates that health promotion can have a positive impact if governments and all stakeholders in society are committed to making changes (Government of Canada, 2015; World Health Organization, 2008; World Health Organization, 2015; World Health Organization, 2016). Governments, especially, need to play a much bigger role in health

promotion by changing policies related to food labeling, marketing, and production, as well as education to promote healthier lifestyles (World Health Organization, 2020, How to Promote Healthy Diets, para. 2). In 2016 the WHO strongly encouraged its member states to take action because a lack of action will have serious medical, social and economic repercussions on a global scale (p. 8).

People with IDD have little knowledge about health; this lack of knowledge and understanding has had a negative impact on health outcomes in these individuals (Marks & Sisirak, 2014a; Scott & Haverkamp, 2016). This at-risk population is often left out of health education efforts as evidenced by the ten health promotion programs reviewed by Scott and Haverkamp (2016) where only one program was for children with ID. There is early evidence indicating that health promotion efforts aimed at behavioural changes are effective for individuals with IDD but they need to be developed and implemented (p. 72). Countries around the world are facing this challenge of instituting equitable health promotion programs for people with IDD and the need for them is finally being recognized (Davis et al., 2014, p. 14). Comprehensive and targeted health promotion efforts designed for people with IDD that include aspects of both nutrition and physical activity would help to not only improve their lives but also their autonomy, confidence and participation in society (Bandura, 1998; Marks & Sisirak, 2014b; Scott & Haverkamp, 2016). Individuals with IDD have the right to benefit from the same health promotion supports as all members in their communities; this ethical consideration is based upon respecting their innate dignity as members of our society (Heng & Sullivan, 2014, p. 207); stakeholders at all levels of society need to recognize this right and take action to support it.

Guidance for Healthy Eating

Governments around the world provide essential and necessary health information to their citizens in order to support their wellbeing in various ways. The literature intimates that government documents, policies, guidelines and recommendations for healthy eating are key components to supporting healthy living and should be followed to maintain a healthy diet (Health Canada, 2019a; Health Canada, 2019b; Government of Canada, 2015; World Health Organization, 2008; World Health Organization, 2015). There are many ways for staff, students, and families to seek guidance for healthy eating habits; two well recognized resources for healthy eating in Canada are *Canada's Food Guide* and *Canada's Dietary Guidelines for Health Professionals and Policy Makers*. Both educational resources aim to achieve the same goal: promoting healthy eating, improving nutritional status, and supporting improvements to Canada's food environment as a whole (Health Canada 2019a; Health Canada, 2019b). These resources are also used to support the development of nutrition policies, programs and education programs to increase health promotion efforts in our country (Health Canada, 2019a, p. 1). *The Guidelines for Food and Beverage Sales in B.C. Schools* (Government of Canada, 2015) is an older resource, currently under review, that is meant to be used in every school in the province in order to follow the recommendations laid out in *Canada's Food Guide* and *Canada's Dietary Guidelines for Health Professionals and Policy Makers* when providing food and beverages to students. The invaluable guidance provided in these resources can be used at home, in the wider community, and in schools by Home Economics teachers and all staff because they

...are basic education tools that are designed to help people follow a healthy diet. They embody sophisticated dietary analysis, and merge national nutrition goals, data from food consumption surveys, and issues of food supply and production. They translate the science

of nutrient requirements into a practical pattern of food choices, incorporating variety and flexibility. (Health Canada, 2019c, p. 1)

Canada's Food Guide (Health Canada, 2019b) is composed of informational sections about healthy food choices, healthy eating habits, recommendations for all ages and stages of life, various tips, and recipes. The new interactive *Canada's Food Guide* (2019b) is visually appealing, user friendly and available in many languages making it an accessible health resource for many people, although not necessarily accessible for students with IDD. A recent study by the University of Dalhousie (2021) in Nova Scotia demonstrated that *Canada's Food Guide* ranked 8th overall for being a source of information for Canadians about food choices behind influences such as the internet, family members, T.V. shows, and celebrities on social media (p. 5). These findings indicate that although *Canada's Food Guide* is full of valuable information, it is not being accessed by many Canadians as a resource. If Home Economics teachers want to use these resources to educate students with IDD and their peers who are typically developing about food skills, and healthy eating habits, they need to find ways to make the information available in a format students of all abilities will understand and engage with. Accessible and understandable health promotion content and activities are essential for supporting health promotion (World Health Organization, 2016, p. 17).

The Dietary Guidelines for Health Professionals and Policy Makers (Health Canada, 2019a) may seem as though it is not meant for average Canadians based on its title, and yet the important guidelines apply to anyone over the age of two (p. 1). This resource is divided into the four main sections: foundation for healthy eating, food and beverages that undermine healthy eating, the importance of food skills, and implementation of dietary guidelines (Health Canada, 2019a). As role models and often the providers of food, families, caregivers and educators may

benefit from a review of each of these sections to educate themselves in order to teach the next generation. A strong emphasis is placed on the importance of food skills as evidence shows that cooking meals from basic, healthy ingredients is becoming less common and people are becoming more dependent on fast, processed foods that require very little skill to make (Health Canada, 2019a; Slater, 2013; Velardo, 2015; World Health Organization, 2015; World Health Organization, 2016). Home Economics classes give children and adolescents an environment where they can learn, develop, and apply food skills. These guidelines highlight the need for food skills to be taught to the next generation of Canadians, and if it is not happening in the home environment then perhaps schools can fill this role (Health Canada, 2019a, pp. 31-32). Diet related dangers are one of our country's leading contributors to disease burden based on combined rates of death and disability which demonstrates the need for increased health promotion efforts, especially surrounding healthy eating (p. 4).

Governments are encouraged to adopt policies that support healthy diets at school and limit the availability of foods that undermine healthy eating habits (World Health Organization, 2015, p. 1). *The Guidelines for Food and Beverage Sales in B.C. Schools* (Government of Canada, 2015) is a document that supports this by providing information, tools, and facts to assist schools in the implementation of healthy foods and beverages across the school environment. The goal is to increase access to healthy options and decrease the availability of unhealthy options. This resource is also meant to be used to ensure that what students are learning in the classroom about healthy foods and nutrition is reinforced outside of the classroom in places such as vending machines, school cafeterias, hot lunches, school events, and fundraisers (Government of Canada, 2015; World Health Organization, 2008). Albert Bandura (2004) stated that it is the epitome of irony to attempt to promote healthy habits in children while

schools offer access to vending machines and fast food lunches in order to receive financial support from the corporations that supply these unhealthy options (p. 158). *The Guidelines for Food and Beverage Sales in B.C. Schools* (Government of Canada, 2015) highlights the concept of a whole school approach to healthy dietary behaviours; all stakeholders (parents, teachers, administrators, community members and food service staff) should be aware of these guidelines in order to promote a healthy school food environment in all aspects of school. A whole school approach is also recommended in the *B.C. Performance Standards for Healthy Living* (2020) which suggests that

...by undertaking a comprehensive school health approach, a school can positively influence levels of physical activity and healthy eating, promote healthy relationships and healthy practices, all of which can significantly reduce preventable illnesses, promote optimal health while contributing to responsible citizenship and caring communities. (p. 9)

The literature suggests that a whole school approach would be beneficial for effective health promotion in students; in a 2013 Manitoba study, the teacher participants felt that the culture of food in their schools contradicted what they were teaching in their classrooms and that this led to unfavourable attitudes towards Home Economics courses amongst students and other staff (Slater, 2013, p. 621). Following the framework and recommendations in the *Guidelines for Food and Beverage Sales in B.C. Schools* (Government of Canada, 2015) can create a positive impact on the school food environment and work toward a whole school approach to healthy habits which will benefit not only the students' health and wellbeing but also their motivation and attitude for healthy dietary behaviours.

A current research study involving Home Economics teachers highlighted two themes related to the need for these valuable resources for guidance surrounding healthy eating. First, Home Economics education has become more challenging to execute in the last 20 years due to a decrease in food skills and nutrition knowledge in the younger generations and second, today's perplexing food landscape requires that students be equipped with the appropriate skill set to successfully navigate it in healthy ways (Slater, 2013, p. 620). For students, especially those with IDD, to acquire autonomy, confidence, and self-determination in cooking skills and dietary choices, families, teachers, and other role models need to be using these resources to create healthy food environments and to transfer the essential skills and knowledge needed in order to promote life-long healthy eating habits.

Health Promotion in Schools

Based on alarming global health statistics over the last two decades in regards to childhood obesity and the rise in non-communicable diseases, the WHO has made health promotion in children and adolescents a priority in many of their reports, conferences, initiatives, and calls to actions (World Health Organization, n.d; World Health Organization, 2008; World Health Organization, 2015; World Health Organization, 2016). Some important goals of the WHO are to create policies and programs for schools that encourage students to acquire and maintain healthy diets, to educate all members of the world about nutrition and healthy habits, and to use schools as a venue to promote cooking skills in children (World Health Organization, 2020, How to Promote Healthy Diets, para. 3); these are just some of their goals. Progress can be made in regard to the health of today's young people by using the WHO's recommendations in six key areas: weight management, promote intake of healthy foods, promote physical activity, preconception and pregnancy care, early childhood diet and physical activity, health, nutrition

and physical activity for school age children. Three of the WHO's recommendations that specifically target ways to improve healthy eating are recommendation 5.4 which promotes nutrition and health education as elements of the core curriculum while recommendations 5.5 and 5.6 call for improved nutrition literacy in parents and cooking classes for children, families and caregivers (World Health Organization, 2016, p. 31). Recognizing that adults with IDD are afflicted with a wide range of health issues resulting from unhealthy habits, it seems well advised for schools to take action in regards to health promotion efforts in order to prevent this from happening to our students in the future (Stewart & Taggart, 2014, p. 164).

The evidence suggests that many sectors of society, especially education, can create positive change in the health of our youth (Bandura, 1998; Stewart & Taggart, 2014; World Health Organization, 2016). Governments in most countries oversee all aspects of education, including curriculum (World Health Organization, 2016, p. 30); the World Health Organization (2016) strongly advocates for a school curriculum and environment that promotes health through nutrition and health literacy as soon as children begin school (p. 17) and that strategies to support health promotion must include elements of nutrition and physical activity (p. 30). The study by Lavelle et al. (2016) investigated the perspectives of Home Economics teachers as well as other experts in the field and found that they supported the recommendation for mandatory cooking and nutrition education for all students (p. 9). Slater (2013) provided evidence in support of foods and nutrition education as a component of creating positive health changes in today's young people; Slater stated that while it is not the sole solution, it is critical that education properly prepare children and youth with the food skills and knowledge to engage with today's complex food landscape independently (p. 623).

There are many ways to promote health in children and adolescents through schools which is why school nutrition programs exist in many countries around the world (Wyonch & Sullivan, 2019, p. 1). Surprisingly, these authors also determined that Canada is the only G7 nation without a national student nutrition program (p. 1). However, Wyonch and Sullivan also determined that although these types of programs have some beneficial short-term effects, especially for low income or disadvantaged individuals (p. 19), they do not have any significant impact on improving childhood obesity, food security, or student learning (p. 22). Therefore, student health promotion through education needs to continue to be a priority over universal programs that strictly provide food.

The primary goal of education is to provide appropriate supports that allow students to fully participate in both the school setting and the educational activities that are valued by the student, their family, and all members of the educational team (Thompson et al., 2010, p. 168). Education is a means through which students can gain the appropriate nutrition knowledge and food skills needed to make healthy choices and adopt lasting healthy eating habits (Sadeghivad et al., 2017, p. 1). The three core competencies outlined in B.C.'s curriculum are interwoven and lay the foundation of all learning (British Columbia Ministry of Education, 2021b, Competencies); the personal awareness and responsibility core competency emphasizes that students should "keep themselves healthy and stay active, manage stress, and express a sense of personal well-being" (Wellbeing). The B.C. curriculum (2021b) also includes elements of health promotion as an integral part of the K-12 Physical and Health Education curriculum. In middle and secondary schools, Home Economics, and Culinary Arts courses provide additional education surrounding nutrition knowledge, food skills, and healthy dietary habits as a part of the

Applied Design, Skills, and Technology (ADST) curriculum content (British Columbia Ministry of Education, 2021a).

The ADST curriculum focuses on aspects of hands-on implementation, and aims to "foster the development of the skills and knowledge that will support students in developing practical, creative, and innovative responses to everyday needs and challenges" (British Columbia Ministry of Education, 2021a, Introduction). Despite the fact that the ADST curriculum (2021a) spans all grade levels, the K-5 ADST curriculum does not contain any specific content related to food, nutrition or health (K-5 Content). Teachers are encouraged to bring the ADST learning into the grade level content in cross-curricular ways that foster the skills and mindset for design thinking and making in students (K-5 Content). Depending on the school, the teachers' prerogative, the resources and available funding, K-5 students are potentially missing out on some crucial years where they could be developing skills and knowledge around health and nutrition. The research study of Lavelle et al. (2016) highlighted that learning food skills and cooking skills at younger ages is shown to positively influence adult dietary and cooking behaviours (p. 10); the systematic review completed by Scott and Haveramp (2016) supported the findings of Lavelle et al. (2016) suggesting that health habits stem from early childhood (p. 65). These pieces of literature lend evidence to the argument that all B.C. students should be receiving education in health, nutrition, healthy eating, and food skills starting in elementary school and carrying on into high school.

Home Economics classes, which fall under the *Applied Design, Skills, and Technology* curriculum (British Columbia Ministry of Education, 2021a), have the potential to play a significant role in health promotion in students (Fordyce-Voorham, 2011; Ronto et al., 2016a, Ronto et al., 2016b). These courses are a good venue for health promotion for students because

this curriculum is hands-on and applies a range of teaching methods and learning opportunities that are able to meet the diverse needs and abilities of learners (British Columbia Ministry of Education, 2021a, Features of the Curriculum). One of the goals in ADST is to focus "on fundamental needs and practical concerns of individuals, families, communities, and society in a changing and challenging world" of which health, nutrition, health eating, and food preparation are a part of (Rationale and Goals). The ability to cook, along with knowledge of healthy foods and nutrition is important for all students, especially marginalized groups such as students with IDD (Granberg et al., 2017a, p. 494).

Food preparation knowledge and cooking skills are highly favoured as goals for most programs for individuals with IDD because they provide skills that can be used for leisure activities, employment opportunities and independent living (Lancioni & Riley, 2002; Sun & Brock, 2022). These essential skills for students with IDD can be developed in school Home Economics classes and it is believed that Home Economics teachers can role model healthy eating, provide information about nutrition, and teach how to apply this knowledge in practical ways that increases the odds that students with IDD will make more informed and healthier choices (Marks & Sisirak, 2014a, p. 48). Current studies showed that students with IDD struggle with many practical and theoretical aspects of Home Economics including reading recipes, mathematics and measurements, and procedural knowledge. In order to gain procedural knowledge, students need to learn through hands-on experiences (Brunnoson et al., 2014; Fordyce-Voorham, 2011; Granberg et al., 2017a). The advantages of the school learning environment are that it is able to provide students with individualized instruction, teachers they are familiar with, and many opportunities for practice, but it can also limit the degree to which these newly acquired skills can be generalized to home, community or employment settings (Sun

& Brock, 2022, p. 9). The literature indicates that strategies for teaching individuals with IDD cooking skills, such as the use of computer programs, pictorial cards, and verbal prompting, have positive effects on individuals' ability to cook and follow instructions (Lancioni & Riley, 2002; Marks & Sisirak, 2014a). Schools and Home Economics teachers need to develop ways to best translate the essential skills and learning to students with IDD (Slater, 2013, p. 623). Home Economics classes can be an ideal place to build self-efficacy for students with IDD because they can develop skills through lived experiences (Marks & Sisirak, 2014a, p. 49); Bandura (1998) suggested that watching others (observational learning) and verbal prompting or encouragement, which are regular elements of Home Economics classes, help people with IDD master skills and work harder (p. 626). The mastering of skills and associated feelings of accomplishment will build self-efficacy in students which will in turn positively affect their feelings, ambitions, expectations, motivation, and actions in regard to healthy dietary behaviours (Marks & Sisirak, 2014a, p. 49).

The B.C. Performance Standards for Healthy Living (British Columbia Ministry of Education, 2020) is linked to the old B.C. curriculum's prescribed learning outcomes but still has a place in school health promotion. Its recommendation of educating students in cross-curricular ways is reflected in the current K-5 *Applied Design, Skills and Technology* curriculum. The rubrics provided in this document can be used by students, family members or teachers to assess and monitor the knowledge, skills, attitudes and behaviours of children and adolescents related to healthy eating (p. 6), and the knowledge gained from these assessment tools is meant to inform and support decision making surrounding instruction (p. 19). Evidence from assessments such as this can help schools and teachers make informed decisions and implement health promotion

efforts that are evidence-based which will have a greater chance of creating long lasting change (Stewart & Taggart, 2014, p. 164).

Health Promotion in Families

Families that have members with IDD often have to adapt their entire life around special circumstances and advocate for their child which can put a great deal of stress on a family (Broberg & Temple, 2014, p. 151). It is important that schools work with families and students with IDD to support healthy food choices in a sensitive manner as some of these families will be facing various social, economic, and behavioural challenges (p. 151). Even though schools play a significant role in promoting health, family is where health behaviours are ingrained (Bandura, 1998, p. 643). Health promotion interventions for families of children with IDD can involve parent stress reduction, parent education, or parents in the role of trainers (Broberg & Temple, 2014, p. 152). The majority of adults in society are, on some level, aware that their actions teach by example and they may not fully comprehend just how significant their role modeling can be for children and adolescents (Crain, 2005, p. 212). A family's attitude and ability to be a positive role model is very important when it comes to supporting children with IDD in healthy ways. In order to be successful, education about health and healthy eating needs to be targeted at the entire family (Northway & Slevin, 2014, pp. 63-64). Albert Bandura's research highlighted how important modeling is in any social setting (Crain, 2005, p. 212) and his SCT suggested that we learn a vast amount through imitation and observing models (p. 197). SCT is based on the idea that the minds of children and adolescents are constructed from the models, social training practices, and the environment around them and Bandura furthered this by suggesting that people can gain new knowledge through observing others but this does not mean that they can then recreate the behaviour (p. 200). Bandura believed that "if we want children to learn, we must

motivate them and assist them. We must teach them things, administer rewards and punishments, and provide them with appropriate models" (pp. 209-210). All children can benefit from pep talks and positive verbal prompting from family members and this type of encouragement goes a long way in helping students with IDD master skills and try harder at tasks that are suited to their ability (Bandura, 1998; Crain, 2005). Health promotion should be founded on the needs, abilities, and preferences of the individual and should include concepts of autonomy, purpose, self-efficacy, rights and responsibilities, in order to fully engage individuals with IDD (Ayres & Cihak, 2010; Bandura, 1998; Marks & Sisirak, 2014b).

The Ecological Framework for Food Choice (EFFC) is an evidence-based health promotion strategy that has the potential to help teachers and families support healthy eating habits in students with IDD (Marks & Sisirak, 2014a, p. 44). This framework provides a guide to understanding how individuals with IDD make food selections and for implementing changes to both society and the environment in order to actively include individuals with IDD in meal planning, grocery shopping, and cooking in their local communities (p. 44). This Evidence-Based Practice (EBP) uses Bandura's SCT and an Ecological Model point of view in order to clarify the core elements of how people with IDD make food choices. Family members and caregivers who are supporting students with IDD in making food choices need to take the biological, physiological, and psychological characteristics of the individual into consideration as these will all impact healthy food choices (pp. 45-46). Using the EFFC could help teachers and families to determine the internal and external influences that are interconnected and may affect food choices in students with IDD. Once these influences have been identified, programs that foster confidence, empower students with IDD, create more social supports, and increase community inclusion can be developed and implemented (p. 45).

Instead of relying on family or other caregivers to make decisions regarding healthy choices for them, individuals with IDD need to be empowered to make their own decisions, allowing caregivers to instead act as moderators, or motivational agents of change (Cousins & Taggart, 2014, p. 3). Bandura's research indicated that a strong sense of personal self-efficacy can be a key factor that helps individuals make progress in life with enthusiasm (Crain, 2005, p. 208) and he also suggested that self-efficacy in modern times needs to morph into collective self-efficacy where groups of like-minded people work together to create change (p. 214). Society at large needs to make the health of today's youth top priority. From the perspective of SCT, new school-based models of health promotion that work cooperatively with the home and community are warranted (Bandura, 1998, p. 644). These programs need to be of high quality and well coordinated to include individuals with disabilities and their families in society (Bandura 1998; Broberg & Temple, 2014).

Strategies for Health Promotion

Health promotion is the action of empowering individuals to increase autonomy over the factors in their lives that impact health, thereby improving their health outcomes; individuals must be active participants in this process if they want to maintain health promotion efforts (Nutbeam, 1998, p. 2). In their 2016 systematic review of literature Scott and Havercamp suggested that individuals with IDD have insubstantial knowledge of health and that in order for individuals to improve their health knowledge, society must provide them with the tools, knowledge, programs and supports to do so (p. 65). From a health perspective, SCT indicated that "health knowledge, incentive systems, self-regulating capabilities and sociostructural supports all have a role to play in the successful pursuit of health" (Bandura, 1998, p. 643).

Food Literacy. Food literacy is a widely used term that is broadly applied but its core elements seem to be different depending on the initiative (Truman et al., 2017a; Truman et al., 2017b). Many of the food literacy initiatives vary in their content and goals (Truman et al., 2017a, p. 366). This issue highlights a gap in knowledge because in order to promote food literacy as a strategy for health promotion Home Economics teachers would benefit from having one comprehensive definition that is used by all. As mentioned in chapter one, Vidgen and Gallegos' definition represents the current, main perspective when describing food literacy and should be used to guide Home Economics teachers as they move forward with health promotion efforts (Truman et al., 2017a, p. 367). The literature review conducted by Vamos et al. (2021) found that 55% of definitions for food literacy emphasized the acquisition of critical knowledge (information and understanding) over functional knowledge (skills, abilities, and choices), 8% focused solely on functional knowledge, and 37% of definitions incorporated both (p. 363). This differs greatly from the research of both Granberg et al. (2017b) and Fordyce-Voorham (2016) whose studies have shown that Home Economics teachers believe practical skills are the most important thing for students to learn. Sadly, very few of the studies reviewed by Truman et al. (2017a) promoted health related outcomes which is a flaw in food literacy education and an area for further research in this field (p. 365). Enhancing food literacy and health literacy in the K-12 school environment can provide important tools and skills to empower students and potentially reduce the health inequalities that exist for students with IDD (Vamos et al., 2021, p. 650).

Vamos et al. (2021) stated that for individuals to attain healthy eating goals they must be food literate (p. 651); the authors' recent article on food literacy focused on The Health Belief Model (HBM) and suggested that this model provides a comprehensive framework that can assist schools in advancing both their health literacy and food literacy agendas through the

examination of the fundamental constructs that reinforce practice, research, policy and intervention efforts in this area (p. 650). Vamos et al. (2021), like Bandura (1998), believed that the education sector can be a major catalyst for enhancing health promotion. The HBM has some overlapping determinants with those of SCT but it does not take into account an individual's self-efficacy or goals (Bandura, 2004, pp. 145-147). Bandura stated that

...most of the models of health behavior are concerned only with predicting health habits. But they do not tell you how to change health behavior. Social cognitive theory offers both predictors and principles on how to inform, enable, guide, and motivate people to adopt habits that promote health and reduce those that impair it. (p. 146)

The alarming rates of childhood obesity, especially in children and youth with IDD, have significantly raised awareness for the importance of nutrition education and the need to foster positive, healthy eating habits and food skills that will begin in childhood and last a lifetime (Truman et al., 2017b, p. e211). Although food literacy is not an EBP, it can be used in conjunction with SCT in order to build students' knowledge and confidence when it comes to healthy choices.

Evidence-Based Practices (EBP). EBPs are valuable for creating meaningful, positive outcomes for student learning. As stated by Cook and Cook (2011), intelligent, well rounded teachers will use both EBPs and other instructional strategies as tools to support learning in their classrooms (p. 78). Research-based and EBPs both have an important role to play in supporting health promotion efforts for students with IDD. However, the use of EBPs can help justify change and provide evidence to guide decisions on planning and instruction in the area of health promotion (Hattie, 2012, p. 149). Using evidence-based health promotion efforts in schools over

those that are not evidence-based will have a greater likelihood of creating lasting change for students (Stewart & Taggart, 2014, p. 164).

The Person-Environment Fit Model (PEFM) of disability has many positive implications for education and should be embraced by administration and staff in order to promote certain EBPs that align with its ideals. Positive Behaviour Supports (PBS) for students with IDD is one method of putting the PEFM into action; PBS emphasizes changing both the context and the student thereby reducing the gap that exists between the student's capabilities and the demands of the setting allowing the student to participate successfully in a meaningful way (Thompson et al., 2010, p. 171). Universal Design for Learning (UDL) is another practice that uses the PEFM to help all students achieve their learning goals by designing the environment, materials, and activities to meet the needs of all abilities in the classroom (p. 171). Thompson et al. indicate that the curriculum modifications and technology that are used as a part of the UDL framework help to reduce the gap between student capacity and the demands of the educational activities resulting in enhanced learning opportunities for the student (p. 171). Positive Behaviour Support Plans (PBSPs) develop from Person-Centered Planning (PCP) and can be used by the Special Education team, in collaboration with the student and family, to assess and plan for what supports are needed for the student, now and in the future, that enable meaningful educational and social participation (p. 175). PBSPs are often integrated into a student's Individual Education Plan (IEP) which should include all supports needed as well as academic goals in order to increase their ability to function as an individual and as a member of the school community (p. 176). Special Education supports based on the PEFM focus on providing enhanced aids and supports that enhance learning opportunities for students with IDD across many school activities and settings. When the PEFM is applied to education it supports Bandura's SCT by amplifying

the capacity of students while at the same time helping them develop self-determination (p. 171). The use of the PEFM to promote EBPs such as PBS, UDL, and PBSPs would benefit all students, not just those with IDD.

Students with special needs do not necessarily need disability specific strategies to teach them this content, especially since many of the EBPs that are used for students without special needs will work for them as well (Mitchell, 2006, p. 11). Rimmer et al. (2014) mentioned that while specialized programs for certain populations of disability can be useful short term, they cannot last long term when resources such as staff, transportation, and space are no longer made available once a project has run its course (p. 2). If the education system would move away from the traditional view of disability and instead adopt the PEFM of disability then the potential for advancing practices, both research and evidence-based, to enhance the school experiences and learning outcomes for students with IDD would increase exponentially (Thompson et al., 2010, p. 168).

Looking at evidence-based health promotion programs, interventions and strategies for youth and adolescents without disabilities may be an alternative to developing new EBPs designed specifically for students with IDD. It is clear that one size does not fit all for any child because their needs are so varied; however, there is a wide range that exists within each category of disability and this fact should be carefully considered when selecting EBPs to adapt (Mitchell, 2006, p. 2). Sun and Brock (2022) highlight that identifying more EBPs specifically for this population in order to supplement their learning is of great importance (p. 11).

Adapting Evidence-Based Practices. As mentioned in chapter one, Hubbard et al. (2014b) highlighted that at this time "evidence-based health promotion programmes for youth with intellectual and developmental disabilities (I/DD) are notably absent" (p. 576). There is

some evidence that health promotion programs developed for people without disabilities could be adapted for those with IDD or at the very least be used to inform the future development of EBPs in this field (Hinckson, 2013, p. 1171). My review of available literature indicated there is a lack of understanding in how EBPs that work for those without disabilities can be tailored to the needs and abilities of people with IDD (Hubbard et al., 2014b; Scott & Havercamp, 2016). To address this need, Guidelines, Recommendations, Adaptations Including Disability (GRAIDs) was developed by leaders in the field of disability and health promotion and it is believed that this framework includes methods and criteria for adapting EBPs in the field of health promotion for people with various disabilities (Rimmer et al., 2014, p. 1). Adapting EBPs that are effective for people without disabilities rather than developing new ones has the potential for expediting the use of current or new evidence-based results in this population that is often underrepresented in health promotion efforts (p. 2). This would overcome some of the barriers of research-to-practice such as time and cost. The efficiency of adapting strategies and programs would be valuable due to the urgent need to improve the health of today's youth that is highlighted by the literature (World Health Organization, 2015; World Health Organization 2016). The GRAIDs framework would also be helpful for bridging the research-to-practice gap in this field and would provide an effective and sustainable foundation for the inclusion of people with disabilities in existing evidence-based health promotion interventions in the same environment as the rest of their local community now and in the future (Rimmer et al., 2014, p. 7).

Researching evidence-based health promotion strategies for students without disabilities and how they can be adapted for students with IDD in schools has the potential to contribute valuable knowledge that can benefit Home Economics teachers as this could help them better

meet the needs of and support the health of their students. It is clear that evidence-based, comprehensive and targeted health promotion efforts adapted for children and youth with IDD that include aspects of both nutrition and physical activity would help to not only improve their lives but also their autonomy, confidence and participation in society (Bandura, 1998; Marks & Sisirak, 2014b; Rimmer, 2011; Scott & Havercamp, 2016; Sun & Brock, 2022).

Challenges to Making Changes

Research-to-Practice. Research-to-practice is a significant element of the modern educational environment that is well suited to supporting successful teaching and learning strategies for students with IDD (Cook & Schirmer, 2003, p. 204). Research-to-practice is important as it allows teachers to be lifelong learners. Through reflection and critical thinking research-to-practice results in improved understanding and experiences for teachers, and therefore, creates relevant and beneficial impacts on student learning outcomes (Hornby, 2014, p. 62). Research-to-practice has an important role in education as it gives teachers a voice and helps advance the field of education forward for the benefit of all learners.

Putting research into practice is a slow, challenging process as evidenced by the looming gap between research and practice that currently exists in education, especially Special Education (Greenwood & Abbott, 2001, p. 281). With greater effort on the part of all stakeholders in education, we can continue to close the research-to-practice gap by supporting and implementing EBPs.

Ethically, it is the role of teachers to evaluate and use practices, strategies, and interventions that will be effective for students and have positive outcomes on their learning. If teachers neglect to do this the prospective benefits for both students with and without disabilities would continue to be unfulfilled (Cook & Schirmer, 2003, p. 202). "Scientific thinking in

practice is what characterizes reflective teachers - those who inquire into their own practice and who examine their own classrooms to find out what works best for them and their students" (Stanovich & Stanovich, 2003, p. 35). Focusing on the meaning and purpose of change may be a helpful way for getting more research into practice as Hattie (2012) states that the most significant contributor to creating improvements in our schools is to avoid the notion of finding the 'right' program, resource, strategy or structure and instead reflect on the impact we, as teachers, have on student learning outcomes (p. 166). EBPs are seen as an essential tool for closing the gap that exists between research and practice in education. Once EBPs are identified, educators need to implement these practices in the ways in which they were designed to be used, with integrity, and on a regular basis (Cook & Schirmer, 2003, p. 204). Not all EBPs will work for all students; therefore, teachers have a responsibility to monitor how their practice and instruction is impacting the learning outcomes of their students (Cook & Cook, 2011, p. 77). Despite the fact that there is a growing body of evidence-based research to guide teaching practice, it is important to include professional common sense based on experience when making decisions that impact instructional decisions to meet the needs of all students (p. 78).

Effective Dissemination. A challenge of research-to-practice and implementing EBPs in the field of health promotion for students with IDD is a general lack of awareness. Many parents and educators are unaware of the consequences of unhealthy eating habits and some may not even be aware of the many reasons why a child might have challenging food behaviours. Awareness about issues surrounding health promotion needs to be brought to all stakeholders in the education system through effective dissemination methods in order for them to be working together to make meaningful changes in health promotion efforts for students with IDD.

As Cook et al. (2013) explains, it is experience and expertise in classroom instruction rather than fancy degrees that attains teacher integrity (p. 171). Teachers who specialize in Home Economics are in the ideal position to disseminate information on EBPs for health promotion. The challenge will be moving away from traditional, passive methods of dissemination to the more effective approaches mentioned by Cook et al. such as simplicity, unexpectedness, concreteness, credibility, emotion, and stories which have the ability to drive home ideas and increase their effect on teaching practice (176). According to Cook et al. the most crucial task required to create change is the examining, clarifying, and implementing of these types of effective dissemination strategies (p. 177).

Educators need to be able to clearly comprehend what research-based and EBPs are in order to see how they can be used (Cook & Cook, 2011; Cook & Schirmer, 2003; Hornby, 2014). Using dissemination approaches that fail to resonate with educators contributes to the existing research-to-practice gap (Cook et al., 2013, p. 163). There is evidently more effort needed to disseminate accurate and engaging information about EBPs for health promotion in students with IDD to educators, administrators and policy makers in order to see them used in a broader application in schools, bridge the gap between research and practice, and begin to address the problem (Cook & Cook, 2011, p. 80).

School Culture. In order to achieve authentic inclusion, teachers have to work together with administration to create an inclusive school philosophy and create a school culture in which all teachers have a shared duty of care for students (Collins, 2018, p. 27). The PEFM perspective of disability would be one way of positively impacting the school culture as it promotes full inclusion. If teachers are focusing on finding ways to close the gap between a student's capacities and the environmental context then students with IDD can be successful and fully participate in

all aspects of the school culture in meaningful ways (Thompson et al., 2010, p 170). The concept of changing the culture of the school into one where all are responsible for the impact on students and all are working on the same goals and celebrating the same success is an important part of addressing health promotion. If students are not receiving consistent messages about nutrition, physical activity, and healthy behaviours then it is hard to make any progress in addressing the issues. Mitchell (2006) highlighted this type of collaborative culture by suggesting that all teachers and parents have a partnership in guaranteeing a high-quality school experience for students with special needs (p. 1). Stewart and Taggart (2014) suggested that schools who exemplify a healthy school approach work as a united team towards the protection and improvement of health in the school community in order to create the best environment to work and learn together (p. 160).

Teacher attitude and mindset has a significant impact on health promotion efforts because teachers are role models; teachers are agents of change who have a moral and ethical responsibility to enhance learning for students (Hattie, 2012, p. 161). Because proper nutrition and eating habits play an important role in learning, it is essential for teachers to understand how their knowledge, attitudes, and behaviours regarding food choices, physical activity and health related behaviours may impact students. This idea does not just apply to Physical Education teachers and Home Economics teachers as being a leader in health promotion efforts and advocating for healthy choices is something all staff should endeavour to do. By extending leadership beyond individual classrooms as Collins (2018) suggested, educators can implement school-wide change to improve both staff and student outcomes in regards to health promotion.

Systemic Change. Hattie (2012) emphasized the need to create big disruptions and have convincing evidence in order to create change in some teachers. Hattie also suggested enhancing

teacher quality is key to having the greatest positive effect on student learning (p. 159). One way to improve teacher quality would be for the education system to undergo a paradigm shift in order for things like time, collaboration, and professional development to be priorities in our efforts to support students.

Both Collins (2018) and Hattie (2012) emphasized the importance of teachers having time to work together. However, in order to have this time, there needs to be a major shift in how we view teachers' work (Hattie, 2012, p. 168). There are other countries around the world in which teachers spend much less time in front of students teaching, and more time working with their colleagues for the betterment of their practice (p. 168). Hattie stated that what is needed most, over even quality professional development or learning communities, is more time for teachers to plan, critique, develop, observe and evaluate together in order to create change (p. 168). The culture of the schools and the shape of a teachers' day need to be restructured so that there is more time to collaborate with colleagues in order to improve outcomes for students. The PEFM of disability can be beneficial for positive student outcomes; however, it not only requires time, effort, and collaboration in order to assess a student's strengths and limitations before figuring out how to modify the environment but it also requires regular review as the student's abilities and the environment will change over time (Thompson et al., 2010, pp. 170-171). Thompson et al. stated that if sufficient time for assessment and planning in regard to support needs for students with IDD is not provided to teachers, truly individualized supports will not be implemented (p. 178).

Building positive working relationships is an important step in putting research into practice. Educators need to have positive relationships with the students they teach, but they also need to have effective working relationships with all school staff and district offices if the

intention is to have the use of EBPs transcend individual classrooms to impact whole schools and districts in order to create reform on a grand scale (Cook & Schirmer, 2003, p. 204). The B.C. Ministry of Education's (2016) *Special Education Services: A Manual of Policies, Procedures and Guidelines* highlights the importance of creating a collaborative team approach that involves ongoing in-service training for staff in order to promote the use of appropriate, quality EBPs in order to successfully meet the needs of special needs students. The research will continue to make slow inroads into practice until everyone is working towards the same goal. It is evident that improving relationships amongst all stakeholders in the education system will create positive change in our ability to put much needed research into practice when it comes to health promotion for students with IDD.

Owing to the fact that the most effective health promotion interventions combine both physical activity and nutrition, collaboration between Physical Education teachers and Home Economics teachers could be a good starting point for increased health promotion efforts in schools. Once existing evidence-based health promotion programs that work for students without disabilities are identified, these teachers could work together to adapt programs and implement them within the school. Cook et al. (2013) explained that competence and personal integrity can positively impact one's persuasiveness (p. 170) which follows that Physical Education teachers and Home Economics teachers could be able to convince others of the benefits of these strategies using their knowledge and experience. If the strategies and instructions for changes to health promotion came from within the school context rather than as "a top-down model in which researchers and the knowledge they produce govern the content and practice of teacher preparation" then it is more likely that teachers in the school would implement the ideas (Clark, 1988, as cited in Hirschhorn & Geelan, 2008, p. 3). Collaboration in which Home Economics

teachers work together to identify, co-construct and find solutions to this problem of practice can support healthy food choices for students, educate families, and teachers and create consistency in evidence-based health promotion efforts moving forwards (Greenwood & Abbott, 2001, p. 283).

Teaching is an evolving practice that requires professional development with current research-based and EBPs that has improvement of practice as its main goal (Stanovich & Stanovich, 2003, p. 28). EBPs and research need to be made easily accessible to teachers, administrators and policy makers (Hornby, 2014, p. 75), after which teachers need to be shown how to apply these strategies and interventions with fidelity in the context of their own classrooms (Cook & Schirmer, 2003, p. 203). Hornby (2014) suggested that effective professional development for teachers is an essential contributor to genuine and consistent implementation of EBPs (p. 78). Cook and Schirmer (2003) proposed that coaching and mentoring for practicing teachers that provides regular, in context feedback would help put research and EBPs into action (p. 203). From a knowledge perspective, Stanovich and Stanovich (2003) suggested that education and training in order to comprehend the scientific process and its ability to create collective growth of knowledge that paves the way for EBPs would be beneficial for professional development (p. 5). With greater understanding and proper guidance educators can learn how to effectively use EBPs in meaningful ways, and create a community of collaboration where educators support one another in their use of these practices (Hornby, 2014, p. 75). Cook and Cook (2011) viewed staff composition, professional development, ongoing mentorship, regular evaluations, effective administrators and system mediation to be key components required for bringing more EBPs into schools (p. 78). Without proper support, and

training educators will continue to avoid implementing or ineffectively implement evidence-based health promotion strategies and interventions to the detriment of our students' health.

Current Research

Nutritional Challenges in Students with IDD

The simple action of eating is commonly impaired in children and adolescents with IDD (Engel-Yeger et al., 2015, p. 17); however, the current literature on feeding issues and nutrient deficiencies in children and youth with IDD is limited (Bandini et al., 2021; Engel-Yeger et al., 2015; Hinckson et al., 2013). Increasingly, research has begun to investigate the connection between impaired eating habits and the health of children and youth with disabilities (Engel-Yeger et al., 2015, p. 19). Bandini et al. (2021) presented a case study that examined the nutrient adequacy, dietary patterns, and diet quality among children with ID as compared to their peers who are typically developing. In another study, Engel-Yeger et al. (2015) investigated the relationship between Sensory Processing Disorders (SPDs) and eating problems in 91 children with various levels of ID. Feeding issues and lower levels of physical activity are causing obesity to become a growing concern in children and youth with IDD. The results of these studies indicated that the challenging feeding behaviours that are common in children and youth with IDD are putting this population at risk of serious health consequences. The authors also suggested that not only is appropriate intervention needed to support diet quality and health in this vulnerable group, but further research is required to improve the quality of life in this population (Hinckson et al., 2013, p. 1177).

Bandini et al. (2021) recruited children ranging from three to eight years of age who were enrolled in the Children's Mealtime Study. The authors wanted to build on the findings from their 2019 study by investigating the nutrient adequacy, dietary patterns, and diet quality in both

children with ID and children who are typically developing; however, they were also interested in determining if weight was related to dietary patterns. Quantitative data was collected from the participants' parents through a series of demographic, medical, and diet history questionnaires. A registered dietitian nutritionist taught the parents how to keep a three-day food record of what their child ate and drank over two consecutive weekdays and one weekend day (p. 900). Body Mass Index (BMI) was determined by weighing and measuring each participant. The results of the year-long study suggested that there was a noticeable difference in the BMI percentile between the two participant groups demonstrating that the children with ID had higher BMIs than their peers who were typically developing (p. 901). When comparing nutrient intake, Bandini et al. discovered that both groups had similar "intakes of calories, fiber, percentage of fat and carbohydrates in relation to total calorie intake" (p. 902). In both children with ID and their peers who were typically developing, 50% of participants had nutrient deficiencies in four or more nutrients (p. 903). The analysis of dietary patterns suggested that participants with ID had much lower vegetable intake than participants who were typically developing (p. 903). The authors observed that the children's diets in both groups could be improved through the consumption of more fruits and vegetables. The findings of Bandini et al. strongly indicate that health promotion efforts to improve the diets of all children, not just those with ID, is justified (p. 909). It should be noted that the moderate sized convenience sample used in this study prevents the results from being generalizable. It is also necessary to note the limitations that could have resulted from the self-reported food records of the parents, which could have incomplete data or be skewed in relation to portion size. The study's nutrient analysis also neglected to account for dietary supplements that may have been taken by participants. Despite the limitations of this case study, it is significant to this field of research because not only does it examine three

complementary measures of dietary intake allowing for a comprehensive profile of each participants' diet, but it is also the first study of its kind to report on dietary differences between children with ID and their peers were typically developing (p. 909).

Engel-Yeger et al. (2015) designed their case study to determine if SPDs impact daily activities, especially eating, in children with IDD. The authors hypothesized that, 1) SPD would correlate with eating problems and that children with severe IDD would have more SPD and eating problems, and 2) SPD would significantly predict eating problems (p. 19). Engel-Yeger et al. recruited 91 participants four to nine years of age from segregated elementary schools attended only by children with IDs. The participants ID level ranged from mild to severe/profound. The parents of the participants completed a demographic questionnaire, and the students' main caregiver at school completed the Screening Tool of Feeding Problems (STEP) and the Short Sensory Profile (SSP) under the supervision of the researcher (p. 20). Descriptive statistics were used in the analysis of the data and linear regression was used to examine whether SSP scores predicted STEP scores (p. 20). The extensive data collected by the researchers confirmed their first hypothesis that "correlations between STEP scores and the sensory profile were more prevalent among children with an IDD severity level" (p. 22). The authors were only able to partially confirm their second hypothesis through the stepwise linear regression. Overall, the findings demonstrated that eating issues in children with IDD are related to SPD on some level. This case study was completed using a small convenience sample recruited from a specific geographic area which prevents the results from being generalized. The work of Engel-Yeger et al. has emphasized that more attention is needed in this area of paediatric research, and that occupational therapists need to account for SPD when dealing with the eating behaviours of children with varying levels of IDD (p. 24).

These two aforementioned studies are connected in that they highlight the various cognitive, physical, and behavioural challenges experienced by children with IDD that can greatly impact their daily activities and overall health (Bandini et al., 2021; Engel-Yeger et al., 2015). The research presented by these authors demonstrates that children and youth with IDD are at a greater risk of obesity, inadequate diets, and challenging feeding behaviours due to the limitations associated with their disabilities. The studies agreed that the issues related to proper nutrition, healthy eating, lack of physical activity, and weight management have negative health consequences that impact the child and the family as a whole. This population already has many comorbid health issues to contend with which is why both these studies emphasized the need for serious health promotion efforts in children and youth with IDD (Bandini et al., 2021; Engel-Yeger et al., 2015). The authors concurred that there is limited research in this field but each study makes different, albeit related, recommendations for future research that can target healthy lifestyle management for this vulnerable population. Bandini et al. (2021) recommended that further studies should follow children with IDD from early childhood well into school age in order to see the extent of problematic dietary patterns and whether they persist as children age (p. 909). While the study of Engel-Yeger et al. (2015) suggested that additional work is needed to undertake a systematic evaluation of sensory processing issues in concert with an assessment of eating and feeding (p. 24). Developing intervention programs that are specifically tailored for children and youth with IDD and delivered by people with the proper expertise is recommended by both articles (Bandini et al., 2021; Engel-Yeger et al., 2015) and as well the authors identified the inequity that exists due to the fact that programs designed specifically for needs and abilities of children and youth with IDD are not currently at the forefront of health promotion efforts.

Challenging Eating Behaviours in Students with Autism Spectrum Disorder (ASD)

Current research has indicated that although there has been extensive study done on the topic of selective eating and food sensitivities linked to ASD, there is a limited body of work on nutrient intake and interventions to address these behaviours. The study of Bandini et al. (2016) aimed to assess if food selectivity in children with ASD was persistent over time, and to examine the association between food selectivity and weight status. Food selectivity was broken down into two dimensions: food refusal, the percentage of foods refused that were offered, and food repertoire, the number of foods a child ate over three days. In order to achieve their objective, Bandini et al. assessed 18 participants with ASD at the mean age of 6.8 and 13.2 years of age. The same methodology was used in both the baseline and follow up studies, which included measures of weight status, food refusal, food repertoire, and challenging mealtime behaviours. The study illuminated both positive and negative changes in the participants over the six-year span. Some encouraging findings were that food refusal, including refusal of fruits and vegetables, and problematic mealtime behaviours in participants decreased. In spite of these positive changes, the study also indicated that the food repertoire of participants decreased over time, and the authors noted that the rate of obesity increased from 28% to 50% between the baseline and follow up studies. The authors concluded that despite their findings more research is needed to further examine the persistence of food selectivity; they suggested using a longitudinal study with a larger sample size. Furthermore, the increase in obesity rate of participants caused the authors to conclude that more early childhood interventions are needed to support nutrition and prevent obesity in children with ASD.

The 2015 study undertaken by Curtain et al. is based on the data of 53 children with ASD and 58 children who were typically developing, collected in a previous study (Bandini et

al., 2010, as cited in Curtain et al., 2015, p. 3309). The authors aimed to discover how food selectivity impacted mealtime experiences in families with children who had ASD in comparison to children who were typically developing. Curtain et al. hypothesized that mealtime behaviour issues and family stress during meals would be higher in families with children who had ASD. The authors suggested these issues would be associated with food selectivity. The study defined high food selectivity as refusing foods that are offered 33% of the time or more. Parent questionnaires were the method used to gain evidence to support these hypotheses; parents were asked to complete the *Meals in Our Household* questionnaire, and the *Child Mealtime Behaviour Problems* Scale of the Problematic Mealtime Behaviours Domain (p. 3310). The questionnaires focused on three areas: child mealtime behaviour problems, spousal stress related to mealtime behaviours, and the influence of the child's food preferences on others. The authors noted that these three areas were adjusted based on age, sex, and race using a linear regression model of evaluation (p. 3310). Results of the data analysis supported the hypotheses of the authors in that their findings illustrated that children with ASD demonstrated more mealtime behaviour problems contributing to increased spousal stress in parents than their peers who were typically developing, and a higher frequency of the child's desired food selection affecting what the rest of the family ate (p. 3310). Curtain et al. concluded that while their findings are consistent with other recent research in the field, "further studies using other parenting stress measures would be informative, as would a comparison of whether mothers and fathers experience different aspects of their child's behaviour to be stressful" (p. 3314). Finally, the article suggested that since the families of children with ASD are at a higher risk of negative mealtime behaviours resulting in additional family stress, that both these issues would benefit from early intervention.

Lázaro and Pondé (2017) reported on the narratives of mothers whose children have ASD. The authors noted that most studies conducted on the eating habits of individuals with ASD were strictly from the perspective of various health care professionals. Therefore, their study aimed to provide the parents' perceptions and concerns about their children's selective eating habits. The study's methodology involved conducting semi-structured interviews with 18 mothers whose children were diagnosed with ASD. The interviews focused on questions related to the eating and behavioural patterns of the children, and the family's eating habits as a whole (p. 182). The interviews were recorded and transcribed by the software program, NVivo, where the data was analyzed (p. 182). The results of the data analysis showed that the main aspects mentioned by all 18 mothers could be grouped into three categories: child's eating patterns, family's attitudes, and food-related behaviour. In relation to the child's eating patterns, Lázaro and Pondé speculated that those children who stopped breastfeeding at a much younger age might have more issues with chewing and swallowing due to differences in the muscles of the face (p. 185). The authors also suggested that in regard to the category of family's attitude, the preferences, and attitudes of the parents have a notable impact on the development of the child's food-related behaviour (p. 185). Finally, in the category of food-related behaviour, the authors noted that when children demonstrated inappropriate behaviours in attempts to get their preferred foods, the mothers would often capitulate, thereby establishing the precedent for a restricted diet (p. 186). Lázaro and Pondé concluded that although organic factors may impact a child's food patterns, environmental factors also play a large part in either reinforcing food selectivity or promoting a more varied and healthy diet (p. 186). The authors stated that their findings allow for interventions that favour healthier eating patterns to be developed, and that parents should be

targeted with education programs in order to better model healthy eating behaviours for their children (p. 186).

Strategies and Programs for Health Promotion

Food Literacy. Food literacy has the potential to help support health promotion in children and adolescents. The study by Ronto et al. (2016a) explored the perspectives of adolescents on the potential for food literacy to impact their overall dietary habits where the authors recruited participants by contacting Home Economics teachers at 16 schools in South East Queensland, Australia. Focus groups were conducted with adolescents ranging from 12 to 17 years of age that included both quantitative and qualitative questions on the topic of food literacy (p. 549). The analysis of the quantitative data was done using descriptive statistics in order to describe the data and calculate means and frequencies between variables. The qualitative data was analyzed for common themes in participants' responses using a content analysis approach (p. 552). The results of this study indicated that

...overall, adolescents ranked food and nutrition knowledge as more important than food skills and food capacity. Although adolescents stated that food and nutrition knowledge is more important for them to eat well, the majority did not apply their knowledge to practice due to low confidence in food skills. (p. 549)

The authors suggested that food literacy education is not being supported in home environments and that schools should fill this gap in order for adolescents to increase their opportunities to become food literate (p. 550). This study has contributed to a better understanding of adolescents' views on the important aspects of food literacy but it is limited in that only 22 aspects of food literacy were considered during the focus groups, and the participants were asked to choose only the six aspects that were most and least important to them (p. 556). This research

indicated that perhaps Home Economics teachers should focus on educating students on the application of food and nutrition knowledge in their daily lives rather than practical skills. Conclusions from this study highlighted that further research could look to ascertain quantitative measures of adolescents' level of food literacy and how this affects their overall dietary habits (p. 556).

Another study by Ronto et al. (2016b) explored high school Home Economics teachers' understanding of food literacy and their role in developing adolescents' food literacy and healthy eating habits. In this study 22 Home Economics teachers were recruited from a list of previous food literacy survey participants. The semi-structured interviews focused on questions to do with each teacher's understanding of food literacy, their background in food literacy, and their role in enhancing food literacy in their students (p. 12). The data from the interviews was analyzed using thematic analysis which identified four overarching themes: Home Economics teachers have varied but solid understanding of food literacy and its importance, some Home Economics teachers have additional training as chefs or dieticians, Home Economics teachers build competent citizens, and Home Economics teachers believe that they should act as role models (p. 13). These findings cannot be generalized as they are solely based on the subjective perspectives of the participants, and there is a concern that the self-report nature of the interviews could have resulted in participant bias, or a tendency to give more 'desirable' answers to the interview questions (pp. 18-19). Ronto et al. do not make any recommendations for future research, but this study provided some insight into the methods by which Home Economics teachers contribute to instructing youth to acquire and sustain food literacy and healthy eating habits (p. 11).

Food literacy has many definitions; Vigden and Gallegos (2014) aimed to develop a definition of food literacy by identifying the components associated with this concept. The authors hypothesized that since the concept of food literacy is highly contextual they would need to acquire multiple perspectives to come to a shared meaning. The authors believe that a common understanding of food literacy is important for guiding educational efforts in this area and for getting individuals, schools, communities, and society as a whole invested in the importance of food literacy (p. 51). The Expert Study and The Young People Study were two case studies created by the authors to gather multiple perspectives. The Expert Study involved participants from a variety of food related fields who worked in either research, practice, policy, or advocacy settings while The Young People Study involved participants aged 16-25 who were specifically selected in order to investigate variations across different levels of disadvantage, gender, and culture (p. 53). Both studies collected data through semi-structured interviews and interpreted their findings using thematic analysis and coding; however, The Expert Study required more extensive analysis as it used a Delphi method which required the results from the first phase of data collection to inform the building of the surveys for the second and third phases. The findings from The Expert Study indicated that participants described food literacy as an empowering concept that gives individuals agency in determining their food consumption while the participants in The Young People Study described it as someone who is good with food (p. 54). The results from both studies were used together to create a shared definition which simply put is that food literacy is the skills and knowledge required in order to have a lasting healthy relationship with food (p. 54). The two studies also identified 11 components of food literacy under the categories of planning and management, selection, preparation, and eating (p. 55). The studies of Vidgen and Gallegos are significant as this was the first time that the term

food literacy had been empirically defined and analyzed. These studies have brought a much broader scope of understanding and meaning to the concept of food literacy; however, the authors suggested that future research focused on the relationship between food literacy, healthy eating and associated elements of food security, social connectedness and ecological sustainability is warranted (p. 58).

Home Economics Programs. The home is assumed to be the place where young people learn to cook by emulating those with more experience but for many, especially those with IDD, this is not the case (Granberg et al., 2017b, p. 1068). For children and youth with IDD acquiring cooking skills and knowing how to cook are an essential part of becoming independent (p. 1068) and Home Economics courses have the potential to be the venue for this important learning. Granberg et al. undertook an ethnographic study of Home Economics teachers in Sweden in order to see teachers in context and to hear their thoughts on what cooking skills they believe are important for students with IDD to learn. The data collection consisted of observations and interviews of 22 Home Economics teachers and was analyzed thematically through a sociocultural lens in order to identify commonalities in teachers' perspectives (p. 1070).

The results of the study by Granberg et al. (2017b) showed that it was common for educators to change their prerogative in regards to what they felt was essential for students to learn, and how it was taught based on various factors that impacted the learning environment at any given time (p. 1070). The participants indicated that the experience level and what students were capable of doing, based on physical and cognitive challenges, were important factors to consider when planning cooking activities (p. 1070). The broad categories teachers felt important for students with IDD to learn in combination were: the words and language of cooking, following recipes, and 'know how' of various aspects to cooking (p.1070). The teachers

emphasized that the theory of cooking was not as important based on the needs of this group of students, and that task centered activities where students could master basic daily skills connected to food, meals and cooking were instrumental (p. 1073). These results corroborated the findings of Fordyce-Voorham (2016) where hands-on cooking and practical skills were found to be one of the most important things for students to learn in skill-based programs (p. 121).

One concern highlighted in this study is that although all the participants felt cooking was an important skill for students with IDD, only a limited number of Home Economics teachers in the study discussed cooking skills in connection with health (Granberg et al., 2017b, p. 1074). The connection between food, cooking skills and health is important and cannot be overlooked, and students with IDD are considered an at-risk population; therefore, it can be argued that it is even more crucial to educate those who are already marginalized in society about healthy food and healthy habits (p. 1068).

This study is limited by its small sample size and the fact that it was only conducted in one county. Owing to the fact that "cooking and cooking skills are culturally oriented" this makes the transferability of these findings difficult (Granberg et al., 2017b, p. 1072). The study has practical implications as it can guide Home Economics teachers in their planning and delivery of lessons; Granberg et al. concluded that for students with IDD to acquire the skills and knowledge for cooking, Home Economics education needs to clearly prioritize what is essential learning for this population and use a student-focused, practical approach to instruction (p. 1075).

New Technology for Health Promotion. The literature indicates that strategies for teaching individuals with IDD cooking skills in order to support healthy habits, such as the use of computer programs, pictorial cards, and verbal prompting have positive effects on individuals'

ability to cook and follow instructions (Lancioni & Riley, 2002; Marks & Sisirak, 2014a). These approaches are valuable, but do not work for all students depending on their level of disability as they require a lot of practice time in order for students to learn and replicate, and are also very teacher or paraprofessional dependent. Health promotion for children and youth via interactive media is a promising field that has been under development for the past two decades and more recent electronic technologies are being used in creative ways (Ayers & Cihak, 2010; Bandura, 2004; Sun & Brock, 2022). Computer-Based Video Instruction (CBVI) has been used to teach students with IDD purchasing skills, grocery shopping, fast food ordering, social skills, cafe training, Automated Teller Machine (ATM) use, and various future employment skills (Ayers & Cihak, 2010, p. 196). Interactive video games and health promoting interactive videos have been used in health promotion efforts to raise childrens' self-efficacy and independence while aiding them to manage various health conditions (Bandura, 2004; Bassette et al., 2019). These types and uses of technology have led to some promising strategies for health promotion that could benefit students with IDD and they strongly indicate that these types of interventions can supplement the learning of many important life skills (Ayers & Cihak, 2010, p. 195).

Video-Based Instruction (VBI) is an EBP that has shown positive results in teaching individuals with varying levels of IDD a wide range of skills (Bassette et al., 2019, p. 1441). The systematic review of Sun and Brock (2022) indicated that most studies using VBI take place in school settings and focus on practical skills with most studies reporting positive outcomes for student learning (pp. 9-11). The study of Bassette et al. (2019) used VBI to teach students with IDD how to perform a physical activity and the results showed that the students not only learned to perform the exercise circuit independently but were then able to transfer this skill into a

community setting with some success. These findings demonstrated that VBI can increase independent performance of skills in students with IDD (p. 1451).

Although this study looked at building physical activity skills, I believe that VBI has the potential for teaching essential food skills to students with IDD that can be developed in school Home Economics classes. The ability of Home Economics teachers to use VBI to role model healthy eating, provide information about nutrition, and teach how to apply this knowledge in practical ways could be a very effective approach for health promotion in students with IDD. A great deal of time, practice, and task repetition is critical for students with IDD in order for them to develop new skills (Ayers & Cihak, 2010; Fordyce-Voorham, 2011) and thus the customized videos could be re-watched allowing students to retain the information and increase autonomy (Ayres & Cihak, 2010; Bassette et al., 2019). If students are taught new skills via these methods then this can eliminate the need for individualized supports and still allow the students to participate successfully (Thompson et al., 2010, p. 176).

Practicing food preparation is costly because it requires the use of ingredients which are consumable. This results in either high instructional cost or in reduced opportunities for students to practice their skills. CBVI can help mitigate these issues by providing many opportunities to practice, computer and teacher feedback, and reduced cost. The study of Ayers and Cihak (2010) investigated the use of CBVI to teach three 15-year-old students with IDD functional skills in a simulated kitchen setting. The study included a baseline, intervention and maintenance phase and addressed the question: "Can students acquire and generalize a specific sequence for completing a functional skill taught via CBVI?" (p. 196). The 'I Can! Daily Living and Community Skills' software was used to target the learning of three functional skills: making a sandwich, microwaving soup, and setting a table (p. 198). The baseline assessed the students' ability to do

the tasks with only one verbal instruction (p. 199). During the intervention phase the computer program led students through six videos for each skill after which the students engaged in behavioural rehearsal of the skills using a mouse or tracker ball to operate the program. The computer program provided feedback of varying degrees (verbal, model, stimulus, full performance of the task) if the students answered incorrectly or failed to answer within ten seconds (p. 200). The final step of the intervention had students participate through in vivo probes in the simulated kitchen which replicated what they had seen on the computer program (pp. 197-198). The students practiced with actual materials until they managed to be 100% successful at the skills three times in a row (p. 200). The students participated in the intervention once a day, three times per week and the number of learning sessions required varied among the students from four to nine depending on the task being learnt (pp. 201-205). The results indicated that all three students were able to maintain the skills they had learned at day one and two of the maintenance phase; however, at the six- and 12-week maintenance probes the students all showed a significant decrease in their ability to do the tasks (p. 201). Following a single CBVI session, all three students went back to 100% success for all three tasks (p. 205). This data suggests the possibility of using CBVI as a review strategy for previously learned tasks and skills that may have declined over time (p. 205). The study's practical implication is that students with IDD could be educated on a multitude of life skills for current and future use and CBVI could facilitate retraining if the students needed a refresher (p. 207). Ayers and Cihak recommended continuing research to identify the scope and variety of tasks in which CBVI might be used as an instructional strategy (p. 207).

Although the study of Ayers and Cihak (2010) showed strong social validity, it also had limitations that should be mentioned. The small sample size prevents the study from having

external validity and the fact that the study took place in a classroom setting rather than a real world setting where students actually need to be able to replicate these skills means that the results are not generalizable (pp. 205-206). The authors further indicated that all three participants in the study had good computer skills but that this intervention might not be as beneficial to students with low computer skills (p. 205). The skills that were taught to the participants were useful life skills; however, the parents of the participants indicated that their children did not use any of their newly acquired skills in the six weeks following the intervention which led to a deterioration in their ability to perform the tasks at their six- and 12-week maintenance probes (p. 206). This issue highlights the fact that teachers are wasting instructional time and energy if they are not teaching skills students will actually be able to practice and use in the real world, regardless of how important teachers may think those skills are (pp. 206-207). Teachers need to collaborate with parents and community partners to create opportunities for students with IDD to practice the skills they acquire through CBVI in real life situations so they can maintain these functional skills to aid their independence and participation in society.

Many physical, social and environmental barriers exist that make health promotion efforts challenging for individuals with IDD (Bassette et al., 2019; McMahon et al., 2020; Marks et al., 2019a; Rimmer et al., 2014). The ability to customize VBI and CBVI can help to overcome barriers related to lack of interest, lack of awareness, environmental constraints, physical challenges, lack of accessible equipment/spaces, and lack of funds (Bassette et al., 2019, p. 1440). VBI shows strong potential to guide Special Education teachers, PE teachers, and community providers in developing physical activity opportunities and other related skills, such as cooking, in people with IDD (p. 1451).

The use of Virtual Reality (VR) technology has positively influenced both cognitive outcomes and social abilities in adolescents with IDD, likely due to the fact that VR provides inclusive conditions where they can interact with virtual worlds that replicate real-world situations (McMahon et al., 2020, p. 88). VR exercise interventions have previously been proven effective at improving physical fitness in adults with IDD and the research of McMahon et al. explored VR exergaming and its ability to help students with IDD increase their physical activity (p. 88). Although somewhat costly, VR could be an accessible alternative mode of intervention for students with IDD. The findings of McMahon et al. suggested that not only is VR exergaming effective for improving duration and intensity of physical activity but also led to socially meaningful outcomes for the participants (p. 91) with the four students in the study indicating they enjoyed the experience and their teacher stating that the VR exergaming became a behaviour incentive for the students (p. 93). McMahon et al. concluded that VR is a promising intervention for assisting students with IDD achieve the recommended daily physical activity that supports health promotion (p. 95).

McMahon et al. (2020) also indicated that VR experiences have many possible educational applications due to their captivating nature (p. 95). Perhaps an area of future research could look at adapting VR for games that help with acquiring food and nutrition knowledge. Physical activity and nutrition are both key components of preventing health problems (p. 88). At the very least, VR exergaming could be a collaborative effort for Physical Education and Home Economics teachers to work together to create a potentially evidence-based health promotion program for students with IDD.

Evidence-Based Practices (EBPs). EBPs are "instructional techniques that meet prescribed criteria related to the research design, quality, quantity, and effect size of supporting

research" (Cook & Cook, 2011, p. 71). Educators can trust EBPs, interventions, and strategies because they "are supported by multiple, high-quality studies that utilize research designs from which casualty can be inferred and that demonstrate meaningful effects on student outcomes" (p. 73).

Therefore, as an EBP, SCT contends that people learn much quicker in social settings simply by watching how other people behave and the consequences of those behaviours (Crain, 2005, p. 198). Likewise, Marks and Sisirak (2014b) advocate that peer supports and their potential to improve understanding and heighten engagement are beneficial for modifying behaviours in people with IDD (p. 23). In the same vein, Albert Bandura theorized that the process of socialization has the ability to influence a broad range of behaviours, including practical skills (Crain, 2005, p. 201) and Hornby (2014) included peer tutoring/mentoring as one of six key strategies that all teachers should know how to use effectively as it is an EBP (pp. 66-67).

In addition, the evidence-based *HealthMessages* Program teaches individuals with IDD to become Healthy Lifestyle Coaches (HLCs) who deliver health information to their peers in weekly meetings (Marks et al., 2019a, p. 245). This study of Marks et al. that examined the effectiveness of this peer-to-peer health promotion program (p. 252) demonstrated overwhelming positive results that showed improved self-efficacy, health knowledge and health behaviours in both the HLCs and participants. Furthermore, both the HLCs with IDD and the participants with IDD indicated that the aforementioned program was effective and fun (p. 253) with the peer participants indicating that in order for them to continue with the healthier habits they had learned in the program, they would benefit from continued support from peers, friends or family (p. 252). Therefore, "this programme provides tools for people with intellectual disabilities to

increase confidence, knowledge, and health advocacy by becoming peer HLCs" (Marks & Sisirak, 2014b, p. 23). In summary, the findings of Marks et al. (2019a) corroborate the existing literature on the ability of peer supports to positively impact health behaviours of people with IDD (p. 253).

Peer partners can be a useful and effective strategy to support students with disabilities (Collins, 2018, p. 32). This form of natural support would allow students with IDD to interact and learn with their peers while the teacher and educational assistant are solely responsible for facilitating and monitoring the partnership (p. 32). Therefore, peer support programs in Home Economics classes could provide students with IDD increased autonomy, social interactions, and inclusion while allowing them to learn and build skills to support their health (Bandura, 2004, p. 151).

The study of Marks et al. (2019b) is the first intervention study to examine the effectiveness of staff-led exercise and health programs on health outcomes for staff who support individuals with IDD in community-based environments (p. 429). The findings from this study were valuable because role modeling is very important when it comes to working with all students, not just those with IDD (Bandura, 1998; Ronto et al., 2016b). If staff are knowledgeable, demonstrate a positive attitude to healthy behaviours, model appropriate healthy lifestyles, and are properly trained to work with people with IDD, the outcomes of health promotion efforts in this population should be positive.

Promoting health in staff is not only beneficial for individuals with IDD but also for the staff themselves. The results of this study indicated that staff had increased confidence for exercise and nutrition, increased levels of daily physical activity, and increased willingness to exercise more often (Marks et al., 2019b, p. 429). The evidence-based *Healthmatters* Train-the-

Trainer Program also benefited employers as the results of this study indicated lower levels of stress, less absenteeism, improved health, and increased productivity in participants (p. 424).

The *Healthmatters* Train-the-Trainer Program demonstrated that providing staff with the knowledge, resources and skills required for healthy living allows them to better assist those with IDD to improve their health (Marks et al., 2019b, pp. 429-430) as family members, teachers, and other staff in schools can have a direct influence on students' food choices and health behaviours. Therefore, consistency in health promotion messages is important and educating staff is the first step. Marks and Sisirak (2014a) suggested that if staff or other caregivers are properly trained to inform, teach, and model all aspects of proper nutrition then individuals with IDD are much more likely to make informed choices around nutrition and physical activity (p. 48).

Adapting Evidence-Based Health Promotion Programs. In the mixed method case study of Hinckson et al. (2013), 17 participants between seven and 13 years of age were selected to participate in an intervention program specifically adapted for children with IDD who were also considered at risk of being obese. Participants were recruited from two specialized schools for students with disabilities in Auckland, New Zealand (p. 1171). The intervention program, adapted from the "Mind, Exercise, Nutrition...Do It!" (MEND) program was used to target issues with physical activity, dietary habits, and overall health in children and youth with IDD. Hinckson et al. hoped to determine the effectiveness of this program on their participants over the course of 10 weeks. The baseline data was collected before the program began and directly after the program concluded, as well as 24 weeks post program, and included measures of healthy food selections, physical activity, and health practices (p. 1174). The quantitative data also included a fitness assessment involving a six-minute walk-test and recording the weight and height of each participant (p. 1174). The researchers collected data through a physical activity

and nutrition questionnaire that was completed by the parents at each measure of the program. Semi-structured interviews were conducted with parents, caregivers, and teachers in order to collect qualitative data associated with the appropriateness, strengths and limitations of the adapted MEND program (p. 1174). The quantitative data was analyzed using statistical analysis while the qualitative data was analyzed thematically to search for patterns in the respondents' answers. The results demonstrated that the quantitative outcomes were not statistically significant aside from the fact that there was a positive effect on the six-minute walk-test for participants 24 weeks post program, which showed participants could walk 51 metres further than in their pre-program fitness assessment (p. 1174). Qualitative data from the interviews acknowledge surprising improvements in the overall physical health and social abilities of the participants (p. 1177) as well as a significant decrease in the consumption of sweets and chocolates (p. 1175). The parents and teachers felt that the participants demonstrated increased physical activity and improved awareness of healthy food habits and they also noted that the improved physical health of the participants resulted in lower rates of hospitalization, and absences from school (p. 1176). Overall, the parents gained confidence in their child's capacity to sustain healthy behaviours (p. 1176). This study is not without limitations; Hinckson et al. noted that self-reporting by parents could result in over or under reporting to achieve desirable answers. Furthermore, the authors concluded that the small sample size and lack of control group are also limiting factors in this study. Despite some limitations, this research study is significant in that it is the first study to report on the results of a physical activity and nutrition program targeted at children and youth with IDD. Hinckson et al. made a significant contribution to this under-researched field that can inform the development of intervention programs in the future. This study also demonstrated that programs and resources that are geared specifically toward the

needs and abilities of children and youth with IDD are necessary to support improvements in healthy living.

Hinckson et al. (2013) suggested that schools may be ideal environments for promoting health interventions in students with IDD but acknowledged that teachers would have to be properly prepared with appropriate knowledge, resources, equipment, and time to achieve this (p. 1177). Developing intervention programs that are specifically tailored for children and youth with IDD and delivered by people with the proper expertise is recommended by the authors (p. 1177); The authors viewed the fact that there are currently no programs designed for or including children and youth with IDD as a significant gap in research that should be remedied in an effort to move forward with health promotion for this already marginalized group (p. 1171).

In his article, *Promoting Inclusive Community-Based Obesity Prevention Programs for Children and Adolescents with Disabilities: The How and the Why*, James Rimmer (2011) explains that there is a lack of accessible obesity prevention programs for youth with disabilities but that many obesity prevention programs for individuals without disabilities have the potential to be adapted in order to meet the needs of this population and provide opportunities for interventions on weight management (p. 180). Smarter Lunchroom is a nutrition intervention that has been proven effective at increasing both the selection and consumption of fruits and vegetables in youth who are typically developing (Hubbard et al., 2014a, p. 362). In their participatory action research study, Hubbard et al. adapted this evidence-based nutrition intervention to serve adolescents with IDD in a residential school where the authors sought to determine if food choices and dietary impact could be improved by environmental changes in the school cafeteria. The residential school students who participated in the six-month study ranged from nine to 22 years of age with the entire student body taking part in the intervention in order

to avoid disruptions to the school's routines (p. 362). The authors' experimental design compared baseline and follow-up dietary data from participants over five days of food service in order to evaluate changes in each individual (p. 362). The hope was that this intervention would increase the students' selection and consumption of fruits, vegetables and whole grains, and at the same time reduce the consumption of refined grains. Data was collected via photographs of the students' trays before and after eating in order to learn about students' specific eating habits. The Smarter Lunchroom intervention consisted of environmental changes where the goal was to improve students' food selection through gentle prodding rather than extreme menu changes (p. 364). Healthier options were placed with greater prominence at the beginning of the cafeteria line while items like peanut butter and jelly sandwiches were removed from the serving line to the back counter. Entrees and side dishes were unbundled to allow for more autonomous healthy choices by the students, and desserts were reduced in size (p. 364). The menu was enhanced with added real food photos as optimal visual aids that are accurate and descriptive for students. The intervention also consisted of classroom activities to support the changes in the cafeteria and promote healthy foods. Classroom teachers and staff working in the cafeteria felt that the majority of students were able to identify healthy food options in their classroom lessons but were unable to transfer these skills into the lunch room setting due to cognitive challenges and issues with impulse control (Hubbard et al., 2014b, p. 581). Generalizing from one social context to another was identified as a major barrier for youth with IDD when it comes to making choices in real life conditions (p. 581). The teachers were trained in how to support student autonomy in the cafeteria line but Hubbard et al. found that the staff working in the lunch room were conflicted between their duty to protect the health of students and their ethical duty to support the students' autonomy in making choices (p. 587). The results of the study indicated that while the

daily calorie intake and volume of food consumed did not change, there was a significant increase in the consumption of fruits and whole grains, and a decrease in the consumption of refined grains. Vegetable consumption did not increase but the intervention's findings demonstrated a decrease in fruit and vegetable waste which supported the authors hypothesis that students would consume more of the fruit and vegetable options when given autonomous choice (Hubbard et al., 2014a, p. 369). Although the outcomes of this study showed a positive influence on students' food choices and food consumption, the small sample size and lack of a control school are limitations that prevent generalizability of the findings. Hubbard et al. also highlighted the substantial amount of time it takes to adapt existing evidence-based interventions as a possible barrier in health promotion efforts for people with disabilities (p. 370). A strength of this study is that it demonstrates a low-cost intervention that shows strong potential in positively influencing short-term food choices and nutrient intake for students with IDD (p. 370). Longitudinal studies to evaluate dietary changes over time is recommended as an area of future research.

Hubbard et al. (2014a) suggested that schools are the ideal venue to deliver nutrition interventions for all youth not just those with IDD but that these interventions "need to address the barriers at the individual and environmental levels that are perceived or experienced by youth with I/DD and their caregivers" (p. 369). Creating accessible school-based health promotion strategies adapted from EBPs, like Smarter Lunchroom, would go a long way towards improving the dietary habits and long-term health of youth with IDD. The adaptation of existing health promotion strategies is an important method for addressing the gap in health promotion efforts and increasing the opportunities for this population to participate in effective programs in their communities (Rimmer, 2011, p. 181).

Conclusion

We clearly know that the health of young people is a growing concern worldwide. Health promotion, especially for vulnerable populations such as people with IDD, is essential for their long-term health, confidence, independence, and full participation in society. The literature in the field provides evidence that schools and Home Economics teachers can play a crucial role in health promotion efforts. However, there is a gap in understanding the issues related to and knowledge surrounding how best to support health promotion for students with IDD. The studies of Bandini et al. (2021), Engel-Yeger et al. (2015), and Hinckson et al. (2013) provided evidence that students with IDD are, more often than not, excluded from health promotion efforts and interventions. Their research highlighted that health promotion in children and adolescents with IDD is an under-researched field, and that the lack of health promotion programs specifically designed to target the needs of children and youth with IDD is a serious gap in knowledge when it comes to supporting health promotion in this at-risk population. Scott and Havercamp (2016) summarized this by concluding that an area of future research that might be valuable in correcting inequities in health for individuals with IDD is health promotion efforts that are specifically tailored to creating changes in behaviours (p. 65). In recent years there has been an increase in efforts to understand and improve the health of individuals with IDD but there is still more research required in order to make health promotion efforts equitable for children and adolescents with IDD (p. 63). The first step in improvement of health promotion efforts is increased understanding of current practices. The goal of this study was to analyze the perspectives of Home Economics teachers in order to clarify not only the ideal role of both schools and Home Economics teachers in health promotion efforts but also to identify promising

EBPs and strategies that are used to assist Home Economics teachers in their efforts to enhance health promotion for students with IDD.

In summary, in this chapter I have described the foundational background which provides the framework for this research study and examined the relevant literature related to health and health concerns for students with IDD, strategies for health promotion, and challenges to creating change in this field. This review of the literature highlighted the lack of studies which target health promotion efforts specifically for youth with IDD and demonstrated that adapting EBPs that work for youth who are typically developing shows promise as a means for supporting health promotion efforts for this population. I believe the results of my study will contribute to existing literature through identifying potential in current teaching practice to adapt evidence-based health intervention programs and strategies in order to help support health promotion efforts in Home Economics classrooms and schools. In the next chapter the needs assessment methodology used in my research study is discussed.

Chapter Three: Research Methods

The following chapter provides a detailed overview of the methodology used in my research study. I begin with a discussion on the context of my study, the participants involved and their recruitment, followed by a summary of the methods used for collecting and interpreting the data. The chapter concludes with an analysis of the value of the study, its limitations, as well as ethical considerations that were necessary to consider during the research.

The purpose of this descriptive study was to gather evidence regarding a specific problem of practice by gathering the perspectives of Home Economics teachers (Rumrill et al., 2011, p. 140). This study aimed to examine the instructional practices of the participants in regard to health outcomes and health consequences, the needs of students with Intellectual and Developmental Disabilities (IDD), health promotion efforts at school, health promotion lessons and strategies, as well as challenges and barriers to teaching healthy eating and food skills to not just students with IDD, but all students. Therefore, this study explored the following research question: What do Home Economics teachers know and need to know about supporting health promotion for students with IDD?

Methodology

A needs assessment is a research methodology that can be used to determine what is needed for those involved. It involves discerning needs and placing those needs in order based on priority to help make an action plan to move forward (Altschuld & Watkins, 2014, p. 6). The purpose of a needs assessment is to explore gaps between what is and what it could be with the needs being the gaps between present outcomes and optimal outcomes (Watkins et al., 2012, p. 19). The process of undertaking a needs assessment is that it will identify issues and gaps in knowledge related to the field of study that need to be remedied.

A needs assessment is considered successful if it can amass data to both define and understand the needs while also locating and evaluating possible solutions (Watkins et al., 2012, p. 69). This methodology compares what is currently being done in the classrooms of Home Economics teachers to what is known from the current literature in the field in order to find gaps. The value of this methodology is in the identification of the gaps in knowledge.

Needs assessments are routinely used to guide *strategic decisions*, choices that are guided by the needs of society, including the needs of direct clients (such as a government's ministry of education), indirect clients (such as community schools served by the ministry), and others in the society that are beneficiaries of an organization's efforts (such as the broader population of the country or region). (p. 40)

A needs assessment methodology allowed this research study to find the gaps in knowledge between what Home Economics teachers know about supporting health promotion efforts for students with IDD and what they need to know to be able to provide this support effectively. Watkins et al. highlights that gaps can be seen as opportunities or problems that are the catalyst for action leading to strategies, projects and programs that create change to existing conditions (p. 16).

This methodology was most appropriate for investigating my research question because it encouraged participants in the study to reflect on their current practice in order to provide useful knowledge about supporting teacher needs and making decisions about what "could be done to improve performance and reach [the] goal" of improved health promotion for students with IDD (Watkins et al., 2012, p. 21). The benefits of a needs assessment are that it is able to provide a systematic process to guide decision making and justify decisions before they are made (p. 25).

This methodology was appropriate for the size and time frame of my project while also offering a framework that could be replicated by a novice researcher such as myself (p. 25).

Participants

The participant population was determined using non - probability purposive sampling which means it was "a particular group of teachers, where no attempt to generalize [was] desired" (Cohen et al., 2018, p. 217). Purposive sampling was used to access Home Economics teachers as the knowledgeable sample required for this study (p. 219). This sampling method was less complicated, more cost effective and well suited to this study since I was not attempting to generalize the findings. The voluntary participants were K-12 Home Economics teachers from across the province. I needed to access this particular group for their knowledge and expertise in the subject area in order to answer my research question.

Recruitment

Participants were recruited from Teachers of Home Economics Specialist Association (THESA) Facebook page where "a general request to participate [was] placed in an electronic environment..." (Cohen et al., 2018, p. 361) as the initial recruitment contact. THESA's goal is collaboration amongst THESA members for the betterment of students, families and communities. There were 473 members in this Facebook group who were given the opportunity to participate in order to explore current practice and needs related to health promotion and support for students with IDD in B.C. schools. The administrators of the THESA Facebook group were contacted to make sure that posting a survey for research purposes was allowed. Home Economics teachers were also recruited using Twitter where I posted my survey to @THESAOrg. As other teachers shared my posts it led to a snowball sampling effect (p. 220). Recruitment for this study took place from September to the end of November 2022 and resulted

in 22 Home Economics teachers representing 11 school districts across B.C. volunteering to participate in this study.

Ethical Considerations

The THESA Facebook group is private, so only members can see what is posted in the group and who the members are, which helped to maintain confidentiality. The study allowed the participants to remain anonymous and the completion of the survey was voluntary which meant there was no way to connect participation to particular THESA group members. The use of the THESA Facebook group provided an easy way to send participants reminders about completing the survey, thank you messages to those who participated, and for disseminating the link to my completed thesis for participants and non-participants to read. Research Ethics Board (REB) approval was acquired prior to commencing data collection and consent was obtained at the beginning of the survey. With regard to issues of security, privacy, confidentiality, "it is impossible to guarantee total security of identification and information here [in an online survey]" (Cohen et al., 2018, p. 367); therefore, the introductory section of the survey included a consent for online survey form, which indicated the various steps I took to maintain the privacy of participants (p. 150). Data storage and data access had to be considered and participants needed to be informed of Google, NVivo, and SPSS security policies, as well as how the data was being used and when the data would be destroyed once the research was complete. I had planned to use NVivo and SPSS software but determined that this was not required based on the number of participants and the analysis abilities of Google Sheets. Cohen et al. emphasize that "the avoidance of harm to people (non-maleficence) and the promotion of beneficence" is important in order to limit possible risks to participants (p. 145). This reflected the need for me, as a researcher, to always act in the best interest of the participants during the study's duration.

This was achieved by asking questions of a practical nature regarding the teacher's individual practice posing a low risk to the participants. Due to any sensitivity that might have arisen surrounding the topics in the survey, participants were informed that they could withdraw from the study at any time up until they submitted their survey, and that they could skip any questions they did not wish to answer.

Data Collection

The data collection method used was a concurrent mixed method survey. Watkins et al. (2012) indicates that surveys are an applicable data collection tool when doing a needs assessment because online surveys are easy to create, the amassed data can be exported into analysis software in order to create useful information or various graphs and charts, and most importantly surveys are an efficient method of reaching a large group of participants (p. 116). Cohen et al. (2018) supports the use of online surveys by highlighting that this data collection tool is suitable in the case of a closed population, such as Home Economics teachers (p. 372).

This data collection tool was an exploratory survey "in which no assumptions or models are postulated, and in which relationships and patterns are explored" (Cohen et al., 2018, p. 335). The survey collected both quantitative and qualitative data. There needed to be several questions for each component issue related to my topic in order to have solid validity and reliability (p. 339). The quantitative (closed questions) were used to engage participants with the topic by comparing their current practice with what is known from literature in the field. The qualitative (open questions) attempted to collect data about specific lesson and strategy ideas for encouraging motivation for healthy eating, strategies for teaching food literacy, and Evidence-Based Practices (EBPs) for teaching food skills for all students, but especially those with IDD. Watkins et al. (2012) reinforces my decision to use a concurrent mixed method survey by

suggesting that during data collection researchers should "use a similar integration of qualitative (or quality), quantitative (or quantity), hard (or externally verifiable), and soft (or not externally verifiable) data collection procedures to ensure that a needs assessment is robust and diverse" (p. 64). The creation of a strong survey was crucial to my data collection process. As suggested by Cohen et al. (2018), a pilot study was used prior to the launch of the finalized survey in order to test the data collection tool itself and make sure that it would collect the appropriate data needed to answer my original research question (p. 339). Cohen et al. highlighted some key design features that I attempted to incorporate when creating my survey: keep it plain with limited graphics, have an introductory section, begin with easy questions and place interest-based questions early on for motivation, limit the number of choices for answers and avoid leading questions (pp. 364-365). It was also suggested to heighten visual aspects of the survey with sections, headings and bold words which I found very helpful for emphasizing important sections or key words (p. 366). Cohen et al. indicated that it is important to keep the survey to approximately 10-15 minutes since participants are kindly giving up their time (p. 373) and while I appreciate the sentiments of Cohen et al., I found it impossible to keep my survey to this suggested time frame due to the extent of the data I hoped to gather. The time to complete the survey for my study was estimated to be 30 to 45 minutes.

Themes that were explored in this survey included knowledge about students with IDD, the role of health and healthy food choices, long term health outcomes, teaching strategies and lessons, food literacy and essential skills, potential barriers (e.g. socioeconomic, food insecurity, parental support, school support, district support, funding, time, student attitude/motivation), and, curriculum and guidelines related to food and health.

The benefits of using a survey as the data collection tool were that it was low cost, efficient, fast, reached a large sample, was easy for participants to complete on their own time, and had the possibility of higher response rate. The data was also able to be exported into various software programs for analysis, and the collected data was perhaps more honest and authentic due to its voluntary nature and the fact that no researcher was present (Cohen et al., 2018, pp. 361-362).

Data Analysis and Interpretation

The data from the survey was analyzed through descriptive statistics and coding. The use of descriptive statistics allowed the data to be organized, summarized and presented for analysis in a coherent form (Rumrill et al., 2011, p. 52). The data was coded using in-vivo descriptive coding and the coding method was a mix of inductive and deductive as the survey was already organized into broad themes. This method of coding best reflects the perspectives of the participants and helped to avoid errors in interpretation. A second coder was used to increase the reliability of the qualitative data analysis. Thematic analysis helped to organize the data and create categories that emerged from the coding process. The data was triangulated through mixed methods to consider trends, commonalities, motivations and understandings. The analysis looked for correlations and frequencies to illustrate certain qualities of the collected data. The use of Google Forms survey summary and Google Sheets built in explore function created various graphs and charts which provided a way to visually represent the data and identify particular trends and patterns. Interpretation of the data created findings to help answer the research question. The data was considered through needs assessment methodology to compare the results with knowledge about 'best practice' from current literature. The findings that resulted from the

interpretation of the data were the stimulus for discussion about how to move forward with and improve health promotion for students with IDD.

Limitations

There are limitations to be aware of in regard to this study. Data collection was an issue due to the small sample size, yet despite the size of the recruited sample, a wide variety of perspectives (i.e., years of experience and grade levels taught) were represented in the participant population. Another limitation was the construction and design of the survey. It was important to make sure that the instructions and questions were clear to the participants and would collect the specific data to answer the research question; however, this resulted in quite a lengthy survey which could have been a deterrent for some potential participants. The length of the survey resulted in response fatigue as fewer participants answered the later qualitative questions. Bias could be considered a limitation in this study because the qualitative data collected was highly subjective. The self-report nature of the survey was a further limitation as participants' answers were not observable or confirmable. Owing to the lack of researcher presence, participants may not have told the truth, misrepresented themselves to give more desirable answers or opted for the satisficing principle by choosing the first reasonable answer in the list rather than reviewing all the possible answers to select the best one (Cohen et al., 2018, p. 367). Finally, this study does not have external validity as the results are not generalizable.

Significance

The positivist epistemology of this research study makes claims about trends and commonalities amongst Home Economics teachers based on the 'sample' of participants. At the same time, the study attributed the perspectives of the participants to current knowledge in the field in order to find the areas of need. This study is worthwhile because it aimed to contribute

knowledge to a field that is under-researched, through the lens of education rather than health.

This study could be valuable for identifying some of the gaps in knowledge that exist in this field and for providing recommendations on how improvements can be made to how Home Economics teachers foster health promotion, food literacy and healthy eating in their classrooms through the use of EBPs and adapted EBPs.

Summary

In this chapter I have summarized the methodology used in my research study and discussed how a needs assessment fits the context of the study with its focus on identifying gaps in knowledge. The participants, their recruitment and the method of data collection are outlined in detail. Additionally, data analysis and interpretation are summarized and the chapter concludes with the identification and elaboration of both the limitations and significance of the study. In chapter four, I will describe the findings and results which came to light after the analysis of both the qualitative and quantitative data that was amassed from the participants' surveys. The themes discussed are the current instructional practices of Home Economics teachers in regard to health outcomes and health consequences, the needs of students with IDD, health promotion efforts at school, health promotion lessons and strategies, as well as challenges and barriers experienced by participants that impact health promotion efforts.

Chapter Four: Findings and Results

The purpose of this study was to investigate educational supports being provided for healthy eating and health promotion for students with Intellectual and Developmental Disabilities (IDD). In this chapter, I outline the results of both the quantitative and qualitative data collected from each section of the online survey. The survey examined the instructional practices of the participants in regard to healthy eating and long-term health consequences, the needs of students with IDD, health promotion efforts in schools, lessons and strategies for health promotion, as well as challenges and barriers to teaching healthy eating and food skills to not only students with IDD, but all students. This study explored the question: What do Home Economics teachers know and need to know about supporting health promotion for students with IDD? By using a needs assessment methodology, this study was able to identify issues and analyze gaps in understanding to create knowledge that describes current practices in Home Economics and Foods Studies courses, with particular attention to needs and gaps in instructional practices addressing healthy eating and food literacy, and inclusive practices that support positive nutritional outcomes and well-being of students with IDD. The collected data from this study have been used to discuss themes, compare participant knowledge to knowledge from current literature, identify gaps to be addressed, and provide recommendations based on the perspectives of the participants as well as what is known from current research. It is hoped that these recommendations have the potential to contribute to an understanding of effective practices and learning needs for Home Economics teachers that can inform practice, teacher training programs and professional development.

Participant Demographics

Questions regarding demographic information were asked at the beginning of the survey in order to find out the grade levels taught by each participant as well as their years of experience. These questions revealed that of the 22 participants, twelve taught secondary school, five taught middle school, two taught elementary school, and three indicated that they worked with multiple grade levels. In terms of experience, two participants indicated they had been teaching for more than 21 years, eight for 16-20 years, three for 11-15 years, two for six to ten years, and six participants indicated they had been teaching for one to five years. One participant selected both 11-15 years and 16-20 years of experience. This error means their response must be treated as unknown. Participants were also asked to indicate their school district as one of the things I wanted to investigate was which B.C. school districts offer K-5 Home Economics. Eleven school districts from across B.C. are represented in this study with two participants choosing not to identify the school district in which they teach. Only three of the represented districts indicated they offer Home Economics at the K-5 grade level and six participants were unsure if their district offered Home Economics to younger students. It is notable that only a few of the districts in this study offer Home Economics instruction at the elementary school age. Given that the literature (Lavelle et al., 2016; Scott & Haverkamp, 2016) suggests nutrition knowledge, cooking skills, and attention to food literacy in elementary classrooms may be a valuable step in health promotion.

The Role of Health and Healthy Eating

In this section of the survey, participants were asked questions that pertained to the value of Home Economics courses, their concerns for the future health of students with IDD and possible long-term health consequences. 95.5% of participants agreed to strongly agreed that

educating students about health promotion, healthy eating and cooking skills will empower them to achieve better physical, social and emotional health. One participant, number 22, indicated that they strongly disagreed with this statement which is a significant outlier compared to all other participants' responses. The idea of empowerment or knowledge as power came up four times in the qualitative responses which supports the data in which 95.5% of participants also agreed to strongly agreed that Home Economics classes are effective in helping students develop autonomy, confidence, and self-determination related to healthy eating and healthy food choices. Once again, participant 22 indicated that they strongly disagree with this statement which was the opposite of all other participants. When participants were asked about their concerns for the future for students with IDD, quality of life was identified as the number one most significant concern for the future with 91% of participants indicating that they had quite a lot or a very great deal of concern. The second most significant concerns were independent living (86%) and autonomy/independence (86%). All three of these concerns are interconnected since without autonomy and independence students will not be able to live independently or have a high quality of life. Overweight and obesity was the most significant concern in regard to long term health consequences for students with IDD for the majority of participants (52%), followed by growth and brain development (23%) and decreased life expectancy (14%). The second most significant long-term health consequence indicated by 33% of participants was diabetes. This finding makes sense as diabetes is often a result of being overweight or obese and unhealthy eating. I found it surprising that decreased life expectancy was indicated to be the least significant long-term health consequence by 32% of participants, but since all the other long-term health consequences listed would lead to decreased life expectancy in the end, this result makes sense. Participant 22 only indicated decreased life expectancy as the most significant

long-term health consequence and did not rank any of the others listed. When participants were asked to explain why they believe it is important for students to understand the relationship between health and healthy eating, the three most common responses included themes surrounding the ability to make informed decisions, the impact on physical health, and the impact on mental health. Participants' responses to all questions in this section made it clear that they felt health and healthy eating were integral to one another.

Knowledge of Students with IDD

This section of the survey attempted to investigate what Home Economics teachers know about challenges related to Sensory Processing Disorders (SPDs) and underlying health issues that can impact the eating behaviours of students with IDD. When asked about their awareness of 12 issues caused by SPD that impact food related behaviours, the majority of participants (64%) have a very great deal to quite a lot of awareness about selectivity to texture, taste, temperature and brands with a smaller majority (55%) indicating they have a very great deal to quite a lot of awareness when it comes to both over/under eating and multiple food aversions. There were eight out of the 12 SPD issues that impact food related behaviours (rumination about certain foods, pica, delay in self-feeding, food refusal, selectivity to the person assisting them, selectivity to the environment, stealing food, tantrums/aggressive mealtime behaviour) that one or more participant indicated they had no awareness of. 18% of participants were least aware of delays in self feeding, and 23% were least aware of stealing food as an SPD problem that affects food behaviours. Participant one indicated that they were both quite a lot (4) and a very great deal (5) aware of issues around over/under eating. Perhaps they were trying to show a level of awareness in the middle (4.5). Only four of the 12 SPD issues that impact food behaviours for those with IDD were known to some degree by all participants. Table 1 shows that a little (3) was the most

common response from participants for all 12 SPD issues. This finding suggests a general lack of awareness of issues resulting from SPD and perhaps even SPD itself and could be an area for professional development and training.

Table 1

Frequency Table for Level of Awareness of SPD Issues

Level of Awareness for 12 issues caused by SPD that Impact Food Related Behaviours	Number of Times Indicated by Participants	Percent
A very great deal	50	19%
Quite a lot	60	23%
A little	103	39%
Very little	33	12%
Not at all	20	7%

Pre-existing health issues are a common occurrence for individuals with IDD that can have a profound impact on their health and well-being. Participants were asked to indicate their level of awareness of eight underlying health issues that can impact health and food choices for students with IDD. 45% of participants indicated they have a very great deal to quite a lot of awareness about both loss of appetite (often due to medication), and fatigue while 41% indicated they have a very great deal to quite a lot of awareness about gastro-esophageal reflux. Seven of the eight underlying health issues had one or more participants with no awareness of it. 32% of participants indicated the least awareness of organic/anatomical problems (such as split cleft) with 27% of participants indicating they were least aware of muscular or structural integrity affecting the oral cavity, larynx, and pharynx. Loss of appetite (often due to medication) was the only underlying health issue known to some degree by all 22 participants. Table 2 shows that as with the data regarding SPD issues, the participants most frequently answered a little (3)

for their level of awareness of underlying health issues. This finding once again indicates an area where professional development and training would be beneficial in order to support the needs of students with IDD.

Table 2

Frequency Table for Level of Awareness of Underlying Health Issues

Level of Awareness for 8 Underlying Health Issues in Students with IDD that Impact Health and Food Choices	Number of Times Indicated by Participants	Percent
A very great deal	20	11%
Quite a lot	31	18%
A little	56	32%
Very little	41	24%
Not at all	26	15%

Participants checked a total of 266 boxes indicating various levels of awareness of issues related to SPD while only checking a total of 174 boxes related to awareness of underlying health issues. This data seems to indicate that Home Economics teachers are more aware of sensory processing disorder issues that impact food related behaviours than they are of underlying health issues of students with IDD that impact health and food choices. Having a better understanding of and acting on the barriers that make it challenging for students with IDD to make healthy food choices is a key component in order to support health promotion in this population (Hubbard et al., 2014b, p. 576).

Current Practice

This section of the survey was designed to find out what Home Economics teachers are currently doing in their classrooms to promote health and what their experiences are in regard to working with and supporting students with IDD. The B.C. curriculum is an essential guide for all

teachers' planning. At the heart of the *Applied Design, Skills, and Technology* (ADST) curriculum is the Personal Awareness and Responsibility core competency, which states that students should be able to "...take increasing responsibility in caring for themselves. Keep themselves healthy and stay active, manage stress, and express a sense of personal well-being" (British Columbia Ministry of Education, 2021b, Wellbeing). When participants were asked how often their Home Economics program included strategies and activities directly related to this core competency, the majority (59%) of participants indicated that they refer to this aspect of the curriculum either daily or weekly. Participant 13 selected daily, weekly, monthly, and once per semester/course/rotation, which were all the options for the question. Choosing daily would seem to indicate that you also use the core competency in all the other scenarios as well; looking back at the participant's entire survey, it was noted that they teach multiple grade levels so perhaps this participant teaches different courses or classes in which they would use this core competency in different frequencies depending on the age of the students. *Canada's Food Guide* and *The Guidelines for Food and Beverages Sales in BC Schools* are two other resources that should be used in schools in order to support health promotion efforts across the whole school environment. When participants were asked how often they use these resources, the data showed that 45.5% of participants are only using them sometimes when planning lessons and activities. The qualitative data collected from the follow up question indicated that weaknesses of *Canada's Food Guide* (Health Canada, 2019b) such as being outdated, restrictive, and not culturally responsive as well as themes of budget and time were the reasons for the limited use of this resource. As for *The Guidelines for Food and Beverage Sales in BC Schools*, one participant did not know what this resource was, one indicated they do not use it, and one specifically

mentioned that their school, especially the cafeteria does not prescribe to the guidelines listed in this resource.

Teacher planning is important, but so is honouring the food preferences of students. When asked if students have autonomy and choice in what they cook, 41% of participants indicated that students have some level (2.86/5 average) of autonomy and choice in what they cook. This data was interesting as it relates to an earlier survey question in which 95.5% of participants agreed to strongly agreed that Home Economics classes are effective in helping students develop autonomy, confidence, and self-determination related to healthy eating and healthy food choices. How can we expect Home Economics courses to do this if we are not giving students more autonomy and choice in the classroom? Based on the qualitative data, it would seem that it is not that participants do not want to be giving more autonomy and choice to students but that it is restricted by time and budget constraints.

In order to find out what teachers know about supporting health promotion for students with IDD, it was important to investigate how these students are being included in Home Economics courses. 2.35 is the average number of students with IDD in a class based on the data from the 22 participants, although 22.7% indicate having five or more students with IDD in their classes. This finding corresponds to the survey question relating to Education Assistants (EAs) and 1:1 supports in which 59.1% of participants indicated that they disagree to strongly disagree that they have enough EA support in Home Economics classes. Additionally, 64% of participants ranked more EA support and 1:1 supports as either their first or second priority in terms of resources or supports that could help Home Economics teachers better implement their ideas for health promotion and healthy eating. In order to support health promotion for students with IDD, it is essential that they be included in this important area of learning, yet 31% of participants

indicated that there are students with IDD that are not included in Home Economics classes while 22.7% of participants were unsure if any students with IDD at their school were not included in these classes. Knowing that the research specifies that this population of students needs more practice and support in this area in order to learn new skills (Ayers & Cihak, 2010; Fordyce-Voorham, 2011), these results show that greater attention to the placement of students with IDD in Home Economics classes is needed. The qualitative data collected in a follow up question indicated that the main themes around why certain students with IDD are not included in Home Economics classes were a lack of resources and supports, safety risks, and challenges experienced by students with IDD (i.e., level of physical or cognitive disability, behaviour, sensory issues). Two participants stated that although some students with IDD are not included in Home Economics classes, they are offered food-based activities in separate settings but it is often inconsistent and lacks a focus on food for health. Perhaps solutions need to be found (i.e., collaboration, professional development, training, Evidence-Based Practices) in order to make sure that all students, no matter what their cognitive, physical or emotional capacity, are able to receive instruction in this area. When asked if they plan lessons, activities and cooking labs specifically with students with IDD in mind, 35.4% of participants indicated they rarely plan with students with IDD in mind and a further 23.7% of participants are only sometimes planning with this population in mind. On a positive note, 27% of participants always plan specifically with students with IDD in mind and 13.6% are often planning in this manner. The fact that the majority (59.1%) of participants are not actively planning for this population demonstrates a need for greater attention to understanding the needs of and planning for students with IDD in order to have them fully included in Home Economics classes. More inclusive, targeted planning

could provide students with IDD better access to curriculum including key components that contribute to health promotion.

Some qualitative responses to later survey questions alluded to some reasons why participants are not planning with this population of students in mind. When asked at the end of this section of the survey about what type of professional development they would like to receive in order to support health promotion for students with IDD 76% of participants mentioned themes surrounding more resources and supports such as examples, curriculum, lesson plans, and strategies that can be used to accommodate and include students with IDD in order to support concepts of healthy eating and health promotion. Several participants mentioned wanting more training and knowledge surrounding the needs of students with IDD, strategies to support students in the classroom, strategies for planning to attend to medical needs, and information about challenges with food related issues. The majority (90.9%) of participants agree to strongly agree that professional development, courses, and workshops on the topic of health promotion for students with IDD would be beneficial for Home Economics teachers while only 13.6% of participants indicated that they have previously attended any professional development, courses, and workshops in this area. This finding clearly demonstrates that participants have had very little access to professional development in this area and that they would find it useful for their current practice.

The literature, particularly the work of Albert Bandura, emphasizes the importance of role modeling and that students, especially those with IDD learn most effectively from watching those around them (Bandura, 1998; Crain, 2005; Northway & Sleven, 2014; Ronto et al., 2016b). Participants were asked several questions in this section of the survey about ideas, lessons, activities, and strategies they are currently using in their classrooms to model healthy eating and

to support health promotion for students with IDD. Significant themes that came out of the qualitative data were teacher modeling, autonomy and motivation, building relationships, making it relevant and relatable to students, and providing healthy options. In their responses, participants further indicated that both direct instruction and experiential learning are equally important when building knowledge in this area. The use of peer supports was also a strategy mentioned by three participants in regard to role modeling, which correlates to the finding that 50% of participants are always or often using peer-to-peer strategies in their classrooms to support students with IDD. This strategy is an Evidence-Based Practice (EBP), and with 50% of participants not regularly using this strategy, a need for more attention to peer supports is indicated. Perhaps, they have limited knowledge of EBPs. This study would have benefitted from a follow up question asking how teachers are using this strategy and maybe also why they are not using this practice in their classroom if they indicated rarely or never for their response. Several participants mentioned that peer supports and collaborative group work are often essential in Home Economics classes when you do not have enough EAs or adults in the room to support the students with IDD. Peer support strategies were mentioned by participants on several occasions in the qualitative data; participant three stated “honestly, students learn from their peers so the importance of collaborative work should not be overlooked,” while participant six mentioned that in order to help model healthy eating and healthy practices they use “peer-to-peer support mostly at beginning and gradually through the school year work towards independence and have visuals in locations to be seen.”

85.4% of participants indicated that health promotion specifically targeting students with IDD is important to very important and when asked if healthy eating goals should be a part of students' Individual Education Plans (IEPs) in order to target health promotion, 91.9% of

participants agreed to strongly agreed. The use of IEP goals as a strategy to promote healthy habits, self-help, and food preparation skills is supported by the literature (Ayres & Cihak, 2010; Thompson et al., 2010).

The final questions in this section of the survey sought to find out the participants' level of confidence in a range of areas. On a five-point scale of very confident (5) to not at all confident (1), the majority (82%) of participants feel quite confident (3.5/5 average) in their ability to motivate students to make healthier choices; however, participants felt that there were external barriers such as school food sales, vending machines, unhealthy cafeteria food, and nearby fast food or convenience foods that undermined this ability. 59.1% of participants stated that their confidence in their knowledge of the health concerns, food issues, and needs of students with IDD is a four or five on a five-point scale. The average confidence level of all participants in this area is 3.6. The exact same statistics were indicated by participants as to their confidence in their abilities to work with and meet the needs of students with IDD. These statistics are interesting because they do not correspond to the previous survey section about the participants' knowledge of students with IDD as far as both SPD issues and underlying health issues. The demographic information outlined at the beginning of this chapter indicated a wide variety of responses across both years of experience and grade levels taught. It was interesting to find that at no point in the data did more years of experience have any correlation to better knowledge of students with IDD, awareness of their needs and challenges, ability to plan with these needs in mind, or confidence in abilities to motivate students to make healthier choices and foster food literacy.

School Food Environment

A school's food environment can either be beneficial or detrimental when it comes to health promotion efforts, which is why a whole school approach to health promotion is recommended (BC Ministry of Education, 2020; Dedicated Action for School Health, 2022; Government of Canada, 2015; Slater, 2013). The quantitative questions in this section of the survey aimed to investigate the participants' perspectives on the state of their school's current food environment while the qualitative questions sought to gain a deeper understanding of how Home Economics teachers view their role, the school's role, and the wider community's role when it comes to health promotion.

The first question in this section explained to participants that a whole school approach is when the school, parents, staff, students, and the wider community all share the responsibility of promoting health and healthy eating. Participants were then asked to indicate their school's current practice in regard to a variety of statements related to a whole school approach using a five-point scale that ranged from strongly agree to strongly disagree. Table 3 shows that the participants' schools are doing an acceptable job with their whole school approach with 68% of the responses indicating a more favourable view of the school food environment but clearly there is a lot of room for improvements since 32% of responses were less than favourable. However, the qualitative data suggests that there is a lot of room for improvement when it comes to the whole school approach and systemic change. When participants were asked what the schools' role is when it comes to supporting health promotion, the responses were mainly related to improvements to the whole school approach, leadership, providing healthier options, and following policy and guideline recommendations that foster a healthy school food environment. Access to unhealthy food both on (i.e., cafeteria, hot lunch, vending machines, fundraisers,

school functions) and off campus (convenience stores and fast food) was mentioned quite frequently by participants as a barrier to health promotion efforts; therefore, it is interesting that 55% of participants agreed to strongly agreed that their school follows the provincial guidelines that stipulate what foods can be sold in schools.

Table 3

Frequency Table for School's Current Practice Toward a Whole School Approach

Statements	Agree/Strongly Agree	Percent	Disagree/Strongly Disagree	Percent
Consistent messaging on health eating across the school community	11	50%	5	23%
School limits availability of unhealthy food/beverages	11	50%	7	32%
Staff collaborate to include health promotion in cross-curricular ways	6	27%	8	36%
School works with community agencies/ partners to support health promotion	14	64%	5	23%
Supports pro-d in the field of health promotion for students	10	45%	4	18%
Staff know where to access reliable info and resources for health promotion	9	41%	2	9%
Staff role model healthy eating and healthy habits	11	50%	4	18%
PAC supports health promotion efforts	10	45%	4	18%
School follows provincial guidelines to support healthy eating habits	12	55%	5	23%
Total Responses 138	94 Favourable Responses	68%	44 Unfavourable Responses	32%

The literature indicates that students with IDD should receive extra instruction in regard to cooking skills, food preparation, and other topics covered in Home Economics courses due to the fact that they often need more practice in order to understand and replicate tasks (Ayers & Cihak, 2010; Fordyce-Voorham, 2011). 36% of participants stated that students with IDD always or often participate in extra food related activities outside of regular Home Economics instruction while 27% stated that this rarely or never happens at their school. Participants were then asked if they thought that students with IDD should be receiving additional instruction in Home Economics and 86% agreed or strongly agreed. If this result is true, why are only 36% of schools in this study offering additional instruction in this area. In order to address this need, Home Economics teachers could approach their administration to advocate for and prioritize more instruction time for students with IDD.

Collaboration with other teachers is another way in which additional instruction in food related topics could occur. 40.9% of participants indicate they sometimes collaborate with other teachers to promote or teach health in cross-curricular ways and 13.6% have never done so but would like to which suggests that greater attention needs to be placed on providing ways for teachers to collaborate on food and health related curriculum. Collaboration was a code that appeared in the qualitative data 18 times. Home Economics teachers could collaborate with Physical Education teachers and Special Education teachers in order to make a plan, develop programs, and possibly implement EBPs in order to find ways for additional instruction to take place that supports health promotion for students with IDD.

The qualitative questions in this section of the survey aimed to discover how Home Economics teachers viewed their role, the school's role, and the wider community's role in the process of supporting students to increase control over and improve their health. When asked

what they thought their role was in supporting health promotion, the most common response was to model and build relationships with students while the second most common responses were to provide experiential learning and to collaborate in a whole school approach or in cross-curricular ways. Three participants included words such as "pivotal," "crucial," and "go-to person" to emphasize the importance of their role but most participants' responses indicated that in order for them to effectively do their role, budget, resources and supports, as well as the schools' ability to follow policy and guidelines need to be improved. These responses were also reflected in the participants' answers when they were asked what the school's role was in supporting health promotion. Overwhelmingly, the responses included the concept of using a whole school approach including administrative leadership, providing healthy options, and enforcing policy and guidelines. There were also several responses that stated the school should be providing proper budgets, resources and supports, as well as professional development opportunities in this area. Three participants felt it was the school's role to create more Home Economics courses in their school with a greater variety of specialized courses in order for Home Economics teachers to be able to educate more students about healthy food related topics. Finally, two participants mentioned that what is needed is bigger than what the school can provide, and that systemic change on a grander scale is required in order to properly support health promotion in schools. When asked about the community's role in health promotion including parents, guests, community agencies, and community health care supports, the participants' responses once again reflected the need to make sure a whole school approach was being implemented. Many of the participants' indicated they would like to have more community involvement inside and outside the school; their responses reflected a need for collaboration with the community partners, especially in regard to experiential learning opportunities where students could be out in the

community practicing skills they learned at school. Some participants wanted to know how to better access the wider community as a resource and support for their courses. Three participants mentioned that the family's role as far as providing healthy food is important and that they should also be a part of the education process while another three participants identified that it was important for both the Parent Advisory Council (PAC) and community partners to make sure that donations for courses or school events reflect healthy options. Finally, two participants felt that the community's role and involvement in schools has the capacity to make the teaching and learning surrounding healthy eating and health promotion more culturally responsive.

Food Literacy

Food literacy is a concept that the current literature promotes as a strategy to enhance health promotion because it provides students with valuable tools and skills that can empower them to support their own health (Truman et al., 2017a; Vamos et al., 2021); therefore, this section of the survey sought to gain insight into how participants understand food literacy, what their confidence level is for teaching food literacy, why they believe food literacy is beneficial, and what they believe are the most essential skills and concepts that students, especially those with IDD, need to learn in order to become truly food literate.

This section of the survey began by stating the *Healthy Schools BC* (2022) definition of food literacy and asked participants to indicate their level of understanding ranging from fully understand to limited understanding in relation to this definition. 50% of participants responded that they fully understand the concept while 40.9% indicated they understand it. This high level of understanding correlates to participants' confidence in their ability to promote food literacy; the majority (81.8%) of participants indicated that they are able to very able when it comes to their ability to foster food literacy in their classes. Even though over 80% of participants are

confident about teaching food literacy, there remains a need for continued attention to this concept and practices to support it. When asked about what they thought the benefits of teaching food literacy were, the main theme that arose was its positive impact on students' futures, which included being able to make informed decisions, gaining autonomy and motivation, and being empowered to make healthy choices. Another less significant theme was that food literacy education helps students make connections between food and health, as well as to see the big picture of the wider foodscape. This result corresponds to a later question in this section in which 91% of participants indicated they agreed or strongly agreed that education in food literacy positively influences the eating habits of students.

Three consecutive questions in this section addressed the essential skills of food literacy broken down into the categories of food and nutrition knowledge, food skills, and capacity. For each category participants were asked to rank the various aspects from very important to not at all important in regard to what was most essential for students, especially those with IDD, to learn. Table 4 indicates that participants felt food safety and hygiene, where to obtain food from, where to find food and nutrition information, healthy and unhealthy foods, and appropriate portion size were the top five aspects to develop in regard to food and nutrition knowledge. Although dietary guidelines, environmental sustainability, where food comes from, and animal welfare are all indicated as valuable pieces of knowledge in regard to food literacy, participants may have considered them less essential because they may be more difficult concepts for students with IDD to grasp while the previously mentioned five aspects of food and nutrition knowledge come in more accessible forms and are much more practical for students with IDD to develop as they move toward independence. In table 5, the first four aspects have clearly been identified by participants as the essential aspects of food literacy related to food skills for

students to develop. These aspects of the food skills category would take students with IDD a lot of time and practice to develop, but they are very practical in nature and would be helpful in building autonomy, confidence, and self-determination in students with IDD in order to help them become more independent. As with the food and nutrition knowledge category, it would seem that the five aspects considered a lower priority by participants might be the ones that are more challenging for students with IDD to understand and acquire. Finally, in table 6 participants have highlighted confidence in skills related to sourcing and preparing foods, positive attitude to cooking and healthy eating, and regular social eating experiences as being significantly more essential than creativity and ability to improvise ingredients when it comes to building capacity. The findings from these three questions suggest that participants put greater importance on the aspects related to practical learning in which students with IDD can gain real-life experiences.

Table 4

Frequency Table for Food and Nutrition Knowledge Students Should Develop

Food Literacy Aspects Related to Foods and Nutrition Knowledge	Participants Who Indicated Important to Very Important	Percent
Food safety and hygiene	22	100%
Healthy and unhealthy foods	19	86%
Where to find food and nutrition info	20	91%
Appropriate portion sizes	18	82%
Dietary Guidelines	17	77%
Where to obtain food from (farm/field to plate)	21	95%
Environmental sustainability	17	77%
Where food comes from (food miles)	17	77%
Animal welfare	14	64%

Table 5*Frequency Table for Food Skills Students Should Develop*

Food Literacy Aspects Related to Food Skills	Participants Who Indicated Important to Very Important	Percent
Prepare and cook food with basic and available ingredients	21	95%
Use common equipment, utensils and appliances	22	100%
Store food appropriately and safely	22	100%
Follow and adapt recipes based on foods available	22	100%
Select and prepare foods based on dietary guidelines	18	82%
Plan and manage a budget for food	19	86%
Identify and critically analyze food related information	14	64%
Plan and manage time for shopping	17	77%
Gather food from different sources (store, farmers market, home garden)	17	77%

Table 6*Frequency Table for Capacity Students Should Develop*

Food Literacy Aspects Related to Capacity	Participants Who Indicated Important to Very Important	Percent
Positive attitude to cooking and healthy eating	21	95%
Confidence in skills related to sourcing and preparing foods	22	100%
Creativity and ability to improvise ingredients	17	77%
Regular social eating experiences	21	95%

The data collected in this part of the survey clearly shows that the participants know the value and importance of food literacy. To wrap up this section, participants were asked to give their opinion about what the consequences are of not teaching students food literacy. All responses related to the theme of being detrimental to students' future. Eleven participants mentioned this results in gaps in knowledge, a further eight mentioned it also leads to gaps in skills, eight highlighted negative health consequences and unhealthy choices while three participants brought up the idea that there could be financial implications if you are not food literate. Finally, two participants indicated that not teaching students about food literacy means that Home Economics teachers are doing their students a huge disservice as they would not be developing healthy human beings.

Challenges and Barriers

Throughout the data, both quantitative and qualitative, participants alluded to various challenges and barriers that can impact health promotion efforts at home, in schools, and in the community. When specifically asked what challenges, they believe students with IDD faced in their classes, the most common challenge brought up was the lack of resources and supports needed to meet the cognitive, physical, and social needs of these students. Some participants went as far as to mention that the lack of supports can lead to safety concerns in the classroom. The wide range of abilities of students with IDD, both cognitive and physical, that impact their inclusion in Home Economics classes was the second most common challenge mentioned. Owing to the fact that Home Economics classes rely on a lot of collaborative work between students, it was interesting that only four participants mentioned social difficulties with peers as a challenge experienced by students with IDD. Three participants gave teacher centered responses when they identified that teachers need more knowledge and strategies for how to

meet the needs of students with IDD including how to make adaptations and how to plan with these students in mind; they insinuated that this increase in knowledge would be a means to reduce the challenges and barriers that impact the experience of students with IDD in Home Economics classrooms.

Acquiring a better understanding of and acting on the barriers that make it challenging for students with IDD to make healthy food choices is a key factor in how Home Economics teachers can better support and foster health promotion; therefore, participants were asked what challenging eating behaviours they have had to respond to in their classrooms. Table 7 shows that the three challenging eating habits that the majority of participants always or often see demonstrated are a preference for high sugar foods, low consumption of fruits and vegetables, and refusal to try certain foods. These three behaviours can make it very difficult for students with IDD to fully participate in Home Economics classes. Table 7 also highlights that all seven of the challenging eating behaviours listed have been seen in classes to some degree. This question asked participants to indicate the frequency that they have noticed these seven behaviours and it is interesting to note that not a single participant answered that they have never had to respond to one of these challenges. The regularity in which these challenging behaviours are seen in classrooms demonstrates how much of an impact they have on these students' ability to choose healthy foods and create healthy eating habits. These barriers are common challenges experienced by students with IDD but there are many other barriers, not related to students' eating habits, that can negatively impact a teacher's ability to foster health promotion at school.

Table 7*Frequency Table for Challenging Eating Habits Shown by Students with IDD*

Challenging Eating Habits	Always or Often Seen Demonstrated in Class by Students with IDD	Percent
Preference for high fat foods	12	55%
Preference for high sugar foods	18	82%
Low consumption of fruit and vegetables	14	64%
Limited variety of foods eaten	13	59%
Refusal to eat certain foods	14	64%
Refusal to try new foods	13	59%
Limited ability to make healthy choices	9	41%

To find out the degree to which other barriers impact health promotion in Home Economics classes, participants were given a list of barriers that are commonly referenced in the literature and asked to indicate on a five-point scale, each one's level of impact from a very great deal to not at all. The data contained in table 4.8 shows that participants identify limited time and budget as the two barriers that have the biggest impact on health promotion in their classes. The qualitative data included 14 mentions of limited time as a challenge and 29 mentions of budget or funding as a barrier. Table 8 further highlights that food insecurity, student attitude and behaviour, social media, socio-economic status, and student skill and ability also have a significant impact on participants' ability to support health promotion. Nine participants indicated that the lack of EBPs specifically for students with IDD had quite a lot to a very great deal of impact on health promotion in their classes. This finding correlates with findings from two earlier questions which indicated that the majority of Home Economics teachers are not

actively planning for students with IDD, and that some students with IDD are excluded from Home Economics classes for a range of reasons. Together these findings indicate a gap in knowledge about EBPs and a need for attention to effective strategies and practices for Home Economics teachers. Table 8 shows that both parent support and lack of positive role models are not considered significant barriers by participants which is a positive result as the literature indicates how influential these two factors can be on students, especially those with IDD (Bandura, 1998; Crain, 2005). Looking at the list of barriers collectively, table 9 shows that a moderate amount is the level of impact indicated most often by participants in regard to all 14 barriers mentioned in this question. In a follow up qualitative question, participants were asked if there were any other challenges or barriers they felt impacted their ability or the school's ability to promote health and healthy eating. Only half of the participants chose to answer this question but the responses highlighted two key themes repeatedly, 1) poor budget allocation, and 2) access to unhealthy, convenience foods both inside and outside the school.

Table 8

Frequency Table for Level of Impact Certain Barriers have on Health Promotion

Barriers	Impact Health Promotion in Class Quite a Lot to A Very Great Deal	Percent
Limited time	16	73%
Budget	15	68%
Parent support	2	9%
Lack of positive role models	4	18%
Socio-economic status	11	50%
Food insecurity	12	56%

Barriers	Impact Health Promotion in Class Quite a Lot to A Very Great Deal	Percent
Lack of evidence-based practices/programs for supporting health promotion for students with IDD	9	41%
Student attitude and behaviour	12	56%
Student skill and ability	11	50%
Lack of professional development specific to students with IDD	9	41%
School food environment	8	36%
Administration support	7	32%
Food literacy levels/lack of understanding of what is healthy	8	36%
Social media	12	56%

Table 9

Frequency Table for Amount Barriers Impact Health Promotion in Classes/School

Amount Barriers Impact Health Promotion in Classes/School	Number of Times Indicated by Participants	Percent
A very great deal	55	18%
Quite a lot	81	27%
A moderate amount	103	34%
Very little	50	17%
Not at all	11	4%

The final three questions in this section addressed the topic of resources and supports. The qualitative data suggests that this is an important topic for participants as the lack of resources and supports was mentioned 40 times in participants' responses across all sections of the survey. When asked if they have the resources and supports they need to effectively support

health promotion and healthy eating for students, 27% of participants indicated that they have most if not all resources and supports they need. I wonder if participants were fully aware of EBPs that exist in the literature if they would still have answered this way. On the other end of the spectrum, 27% of participants indicated they have limited to no resources and supports. When asked about EA support in their classrooms, the majority (59%) of participants disagreed to strongly disagreed that they have the appropriate level of EA support and only 23% of participants indicated that they agreed to strongly agreed that they have appropriate levels of EA support. The findings from these two questions suggest there is a positive correlation between sufficient EA support and feeling well-resourced. This section concluded by asking participants to rank, in priority order, resources and supports that they need in order to better implement their ideas for health promotion and healthy eating. The number one ranked priority for resources and supports was more EA support/1:1 support indicated by the majority (41%) of participants followed by a smaller majority (32%) for increased budget. More EA support/1:1 support and increased budget were also the number two ranked priority for 23% of participants. Access to more technology and specialized equipment was ranked the lowest priority by 41% of participants. More knowledge of technology for instruction may be a need indicated by this finding since according to the literature, there is a lot of new technology being used to support health promotion for students with IDD. District, province, and country wide health policies were ranked the lowest priority by 32% of participants, and yet the need for and the benefits of these types of policies was a theme that came up many times in the qualitative data from many sections of this survey. The findings from the final three questions in this section indicate a need for more resources and EA support for Home Economics teachers.

Ideas and Strategies

In the 2016 study of Lavalley et al. the participants, Home Economics teachers and other experts on healthy eating and cooking, recommended mandatory education in both practical cooking skills and nutrition for all students as a means to positively influence health, diet quality, cooking behaviours, and self-efficacy (pp. 9-10). Hence, the first question related to ideas and strategies in this survey asked participants if Home Economics should be a mandatory subject for all students and the result was overwhelmingly positive with 91% of participants responding agree to strongly agree. This data corresponds to both the data where 86.3% of participants agreed to strongly agreed that students with IDD should receive additional instruction in Home Economics and that 85.4% of participants see the need for health promotion efforts specifically targeted for students with IDD.

The qualitative questions in this section sought to gain deeper insight into ideas and strategies Home Economics teachers have that could potentially support health promotion and encourage healthy eating habits for students. Each of the questions specified that participants' responses should directly relate to supporting health promotion efforts for students with IDD but also acknowledged that these could also apply to all students. Participants were asked to respond to three statements: 1) Describe any ideas, lessons, activities, or strategies you would like to try in your classroom to help support health promotion and healthy eating for students with IDD, 2) Describe any actions your school could take to improve how it is fostering health promotion, food literacy, and healthy eating, and 3) Indicate any ideas you have for how Home Economics teachers can improve how they support health promotion, food literacy, and healthy eating. One participant stated, "whatever is tried needs to fit a range of students so others are not sitting there with nothing to do. I need support with adapting and modifying content in the classroom."

Despite the wide variety of ideas participants wanted to try, budget, time, and lack of resources and supports were once again consistently mentioned as barriers to implementing these ideas. Of the 15 responses to the second statement regarding the actions the school could take, the majority of responses included ideas specific to providing more resources and supports including increased EA support, increased budget, and time for teachers to plan and collaborate, and additional instruction for students with IDD while fewer responses included implementing a whole school approach including starting school wide initiatives, and enforcing policy and guidelines around healthy eating. Contained in the 14 responses to the final question were six references to implementing a whole school approach, three references to using experiential learning, and two references to concepts related to Universal Design for Learning (UDL), even though the participants did not specifically use the term UDL in their responses. One participant simply stated "training" as a way for Home Economics teachers to improve yet the quality and content of pre-service and in-service training is not necessarily something Home Economics teachers have the capacity to improve. Budget and lack of resources and supports, though not something that is always possible for teachers to control or improve, was mentioned by three participants. Finally, it seemed that participant nine had a good grasp on beneficial and possibly evidence-based strategies for Home Economics when they stated, "I think some understanding of how to adapt the cooking process, how to include augmentative communication, visuals, and sensory exploration into Home Economics. There is so much opportunity to combine food, nutrition, and cooking with building fine motor, communication, and social skills. It would be great to include Home Economics as a possible strategy in supporting IEP goals along with some nutrition specific objectives." Unfortunately, three of the 14 participants indicated they were

either unsure or had no ideas for how Home Economics teachers could improve which was probably due in part to the length of the survey and that this was the final question.

Summary

In this chapter, I described the findings of the analysis from both the quantitative and qualitative data that were compiled for this research study. The findings were grouped into categories regarding the role of health and healthy eating, knowledge of students with IDD, current practice, school food environment, food literacy, challenges and barriers, and ideas and strategies. In chapter five, I will discuss the interpretation of these findings, compare these findings with knowledge about best practice from current literature, identify limitations to the study, emphasize the significance of this study to this field of research, and outline recommendations for changing current practice and future research as they pertain to health promotion for students with IDD.

Chapter Five: Discussion and Recommendations

In this chapter, I have formulated conclusions from the study, connected these conclusions to previous literature in the field and highlighted the significance of this study to this area of research. Limitations to this study are also discussed, and the chapter concludes with recommendations for how to improve and move forward with health promotion efforts for students with Intellectual and Developmental Disabilities (IDD). The conclusions discussed in this chapter are derived from a study of Home Economics teachers in British Columbia that sought to answer the question: What do Home Economics teachers know and need to know about supporting health promotion for students with IDD? The conclusions discussed in this chapter are based on the qualitative and quantitative findings outlined in the previous chapter.

What Home Economics Teachers Know

During the first sections of the survey, the participants were unanimous on the fact that food and health are connected and that this connection is important for students to understand. Participants were also in agreement that food has an impact on the physical, cognitive, social and emotional health of students. These two findings align with the study of Granberg et al. (2017b) which recommends that the connection between food, cooking skills, and health cannot be ignored (p. 1068). The responses of the participants showed that they were also in agreement with the research results found by Bandini et al. (2021) and Engel-Yeger et al. (2015) which suggested that due to the fact that strategies to support students with IDD are not at the forefront of health promotion, efforts specifically targeting this population are important. Furthermore, participants felt having healthy eating goals in students' Individual Education Plans (IEPs) was a useful strategy for health promotion that is endorsed by both the studies Ayers and Cihak (2010) and Thompson et al. (2010). Peer supports and student collaboration were identified by

participants as effective strategies for supporting health promotion. Participant three stated, “honestly, students learn from their peers so the importance of collaborative work should not be overlooked” while participant six indicated that in order to help model healthy eating and healthy practices they use “peer-to-peer support mostly at beginning and gradually through the school year work towards independence.” These statements show a strong correlation to the work of Albert Bandura, in which he theorized that people learn more quickly by watching others in any social setting (Crain, 2005, p. 198) and with the study of Marks et al. (2019a), in which the results indicated that peer supports had positive outcomes on the self-efficacy, health knowledge and health behaviours of both the peer participants and their mentors (p. 253). Another participant added that peer supports can be a useful tool when you do not have enough Education Assistant (EA) support for students with IDD in the classroom. Home Economics teachers indicated that they have a solid understanding of food literacy, its benefits, and the important components that make up food literacy education; their responses suggest that food literacy is a key strategy for supporting health promotion efforts for students, especially those with IDD. Very few current studies have connected education in food literacy to health outcomes (Truman et al., 2017a, p. 365); however, the responses from these Home Economics teachers clearly show that they understand how food literacy is connected to both the current and future health of their students. Subsequently, they acknowledged that not teaching students about food literacy would be a huge disservice to them that would result in negative health consequences. According to the responses of the participants, experiential learning was recognized as a crucial part of health promotion including the demonstrating of healthy habits, cooking healthy foods, and being able to generalize these skills to other settings. This finding is consistent with the findings of both

Fordyce-Voorham (2011) and Granberg et al. (2017b) in which Home Economics teachers indicated that hands-on, practical skills were far more important than theoretical learning.

A key result of this study indicated that Home Economics teachers regularly see students with IDD struggle with various food related issues, as well as physical, social, cognitive, and behavioural challenges. This is comparable to the research results found by both Bandini et al. (2021) and Engel-Yeger et al. (2015) which highlighted the physical, cognitive, and behavioural challenges experienced by children with IDD and demonstrated the negative impact of these issues on daily activities and overall health. These challenges caused participants to express serious concern for the future of students with IDD in terms of quality of life which correlates to the study of Hinckson et al. (2013) where it is recommended that future research into health promotion for this at-risk population is needed in order to improve their quality of life (p. 1177). The results of this study established that Home Economics teachers had varying degrees of knowledge and awareness of Sensory Processing Disorder (SPD) issues and pre-existing health issues that impact both the food choices and health of students with IDD. This lack of knowledge and awareness is a noted issue for participants, and many of them indicated a desire for professional development in this area in order to better meet the needs of these students in their classrooms.

What Home Economics Teachers Need to Know

Knowledge of, and practice with implementing inclusive, Evidence-Based Practices (EBPs), with particular attention to strategies for students with IDD, is needed for effective health promotion. Although participants were aware of the benefits of peer-to-peer supports and student collaboration, the findings suggest that many of them are not using these strategies to their fullest potential. Creating a peer mentoring program, as illustrated by the study of Marks et

al. (2019a), in which relationships can be built amongst students for the benefits of all involved would go a long way to increasing the potential for learning about cooking skills, healthy eating, and healthy habits. Access to more technology and specialized equipment was not identified as a priority in terms of resources and supports needed to better support health promotion in Home Economics classrooms, however, the studies of Ayers and Cihak (2010), and Sun and Brock (2022) suggest that there are many advances in technology that can assist students with IDD in learning many skills related to healthy eating, healthy habits and health promotion. Access to technology and how to utilize it in Home Economics classrooms is a need demonstrated by this study. Participant nine was the only Home Economics teacher to allude to using EBPs and strategies mentioned in the literature as a means to how Home Economics teachers can improve support for health promotion, food literacy and healthy eating when they responded, "I think some understanding of how to adapt the cooking process, how to include augmentative communication and visuals, sensory exploration into Home Ec. There is so much opportunity to combine food, nutrition, and cooking with building fine motor, communication, and social skills." Overall, the responses suggest that the majority of participants are not aware of EBPs for health promotion including those that use technology.

Home Economics teachers in this study identified a desire to build their knowledge base surrounding the needs of students with IDD including pre-existing health issues and SPD issues that impact food choices, challenging food behaviours, and how to adapt and plan to fully include them in Home Economics classes. This corresponds to the findings of Hinckson et al. (2013), where it was acknowledged that in order for evidence-based health promotion programs to be successful, they must be led by people with the correct expertise and designed to meet the needs and abilities of the students involved (p. 1177). This study found that participants are not

planning with students with IDD in mind; therefore, this result highlights the need for more opportunities for professional development and collaboration in order to properly support students with IDD. The need for professional development is supported by the study of Hubbard et al. (2014a) in which it was recognized that teachers need a deep level of understanding in order to address the barriers and challenges that impact health promotion for students with IDD (p. 369). Knowing more about the Person-Environment Fit Model (PEFM) and the Ecological Framework for Food Choices (EFFC) would provide Home Economics teachers with greater expertise to help them overcome some of the personal and external barriers that make health promotion challenging for students with IDD and would have a positive impact on how this vulnerable group is included in health promotion efforts at school.

The need for professional development and collaboration was identified by Home Economics teachers as learning opportunities that would be beneficial to their practice in order for them to support health promotion specifically targeting students with IDD. Participants indicated that it is difficult to find time to collaborate with colleagues, which correlates to the research results of Hubbard et al. (2014b) that emphasized how collaborating, planning, and implementing programs for students with diverse needs can be very time consuming and puts an increased strain on already time impoverished teachers (p. 586). Collaboration with community partners outside of the school environment was also highlighted by participants as an important aspect of health promotion efforts, which aligns with the whole school approach referenced by much of the available literature (BC Ministry of Education, 2020; Dedicated Action for School Health, 2022; Government of Canada, 2015; Slater, 2013). Opportunities for students to practice skills learned at school in community settings would be beneficial for students' confidence and independence. This study found that professional development around the creation of resources,

supports, lessons, and programs or strategies that can be directly applied in their classrooms was an important focus for Home Economics teachers. Overall, the consensus was that professional development and workshops specifically on the topic of health promotion for students with IDD would be instrumental in their ability to better support this population.

Systemic Change: What is Needed

In addition to what Home Economics teachers know, the participants also acknowledged the challenges and barriers that make health promotion efforts in schools difficult to achieve. One participant stated, "I believe it's bigger than just a school, we need a change in our system." Budget, time, and access to resources and supports, especially EA support, were recognized as the most significant challenges to health promotion by all participants. These same barriers have been identified in previous studies of Hinckson et al. (2013), where it was recognized that although schools are an appropriate venue for health promotion interventions, Home Economics teachers need the proper training, knowledge, resources, supports, equipment, and time to be able to implement these with fidelity (Ayers & Cihak, 2010; Hinckson et al., 2013). This study established that participants want to build students' self-determination by giving them more autonomy and choice in what they cook but indicated that participants are limited in this area due to time and budget restrictions. One participant stated, "honestly, it's all time and money." Time for teachers to plan together, adapt lessons or activities, and collaborate to build programs for students with IDD is necessary in order to improve how schools support health promotion for this demographic. It is possible to provide teachers with more time, as evidenced by the work of John Hattie (2012) in which he describes that teachers in many countries around the world spend less time in front of students teaching, and more time collaborating with their colleagues (p. 168). If teachers' days were restructured with built in time for collaborating, it would work to

benefit all students. Participants in this study indicated a desire to collaborate with other teachers in their school in cross-curricular ways as well as community partners in order to better support health promotion.

This study determined that Home Economics teachers believe their schools are doing an acceptable job of establishing a healthy school environment but participants also indicated that there is room for schools to improve in their whole school approach to health promotion. Participants reported that everyone in the school environment needs to be promoting the same messages and working towards the same goals, which corresponds with the ideals set out by both the *Guidelines for Food and Beverage Sales in B.C. Schools* and the *B.C. Performance Standards for Healthy Living*. Many participants reported that their schools are not following the policies and guidelines set out by the government which dictate what types of foods and beverages can be provided in schools. This study determined that Home Economics teachers view the ways in which students are provided access to unhealthy food both inside and outside the school as a barrier to health promotion, especially at the high school level, and that it contradicts what they are trying to promote in their classrooms. This finding is comparable to the research results found by Slater (2013) in which Home Economics teachers felt the school food environment undermined their teaching (p. 621). In order to foster a healthy school food environment, the culture of the school needs to change to be one in which all stakeholders promote consistent messages about healthy habits and healthy eating.

A lack of Home Economics education in the K-5 curriculum was reported by the majority of participants, and yet participants were overwhelmingly in support of Home Economics being a mandatory class for B.C. students because it helps them build skills for independence and gain knowledge to make healthy choices. This result correlates to the work of Albert Bandura (1998)

where he suggests that it is much easier to intervene when students are young in order to prevent bad habits from forming (p. 643). In the same vein, the findings of Lavelle et al. (2016) and Scott and Havercamp (2016) emphasized that since health habits are established in early childhood, it would be beneficial for children to learn about food, nutrition, and cooking skills at a young age. These studies, as well as the World Health Organization (2016) support the argument that not only should Home Economics be a mandatory course for all students but also that education in this important area should begin as soon as students enter elementary school and continue throughout their school career. Participants reported that there are often students with IDD who are not included in Home Economics classes and this lack of inclusion can be attributed to the physical, cognitive or behavioural challenges of students and the lack of EA support in classrooms. This study's results also found that participants recognized the need for proper supports to be in place to enable students with IDD to be included in Home Economics classes and also receive additional instruction in this area to support health promotion efforts. This corresponds to the study of Granberg et al. (2017a) which highlights that students with IDD have three times more instruction in Home Economics than students who are typically developing (p. 494). Overall, Home Economics teachers know they need change to occur at the school, district, and government level in order to do better at promoting health and healthy eating, and fostering food literacy.

The Research Question and Review of Key Themes

In responding to my research question *What do Home Economics teachers know and need to know about supporting health promotion for students with IDD?* several key themes emerged. Home Economics teachers know that food and health are connected, and that this connection is important for students to understand. They also know that food has the ability to

positively or negatively impact the physical, cognitive, social and emotional health of students. Home Economics teachers are aware of the various food related issues with which students with IDD struggle as well as other physical, social, cognitive, and behavioural challenges that impact their inclusion in Home Economics classes. In response to the second part of my research question, I gleaned that Home Economics teachers need to gain more knowledge of, and practice implementing inclusive Evidence Based Practices which include strategies targeted specifically for students with IDD. They also want to increase their knowledge base surrounding pre-existing health issues and Sensory Processing Disorder issues that impact food behaviours. It became clear that Home Economics teachers also need more professional development and collaboration opportunities to support their practice which in turn will help them better support students with IDD in their classrooms. Overall, systemic change is needed for Home Economics teachers to better support health promotion efforts in schools together with a more comprehensive whole school approach to health promotion as this could help overcome some of the challenges and barriers to health promotion. In addition, change also needs to occur at the district and government levels in order to create a greater impact when it comes to promoting health and healthy eating practices for today's youth. All areas of education often advocate for change, but food as a part of health promotion has a lifelong impact that needs urgent attention.

Limitations of the Study

This study gathered and examined data collected from 22 participants from only 11 districts, therefore it cannot be said that it reflects the perspectives of the majority of Home Economics teachers in B.C. The study does not have external validity as the small sample size makes it so that the results are not generalizable. Issues with the construction and design of the survey were a significant limitation. The length of the survey not only could have been a

deterrent for some potential participants, but it also resulted in response fatigue as fewer participants answered the later qualitative questions that aimed to gain insights into how both schools and Home Economics teachers can improve health promotion efforts. The length of the survey could also have resulted in participants choosing the first reasonable answer rather than reading all options first in order to move more quickly through the questions. Question design was a limitation in three circumstances as the use of a tick box style question resulted in data error as participants were able, whether by accident or choice, to select more than one option. A multiple-choice style question would have prevented this error. Even though all of the questions pertained to students with IDD, a limitation was that the questions specifically stated that they could also be applicable to all students. Unfortunately, this use of wording caused most participants to answer the questions based on their experiences with students who are typically developing rather than students with IDD. More accurate data would have been collected had the questions solely focused on students with IDD. Another limitation could be participant bias as the qualitative data collected was highly subjective and participants' responses may have been influenced by timing, setting, or even individual preference to give more desirable answers. Furthermore, researcher bias could be a limitation due to my own background as a Home Economics teacher and my extensive knowledge of supporting health promotion for students with IDD.

Significance of the Study

Health promotion for individuals with IDD is a recent field of research being explored; however, there are studies from many countries that show there is significant concern for both the health of young people worldwide and for how all stakeholders in society can better support efforts in this area (Nutbeam, 1998; World Health Organization, 2008; World Health

Organization, 2015; World Health Organization, 2016). This study is significant because it contributes knowledge to this field from the perspective of education rather than healthcare. Participants were asked to consider practices and strategies that support healthy eating habits and health promotion after which their perspectives were compared to current literature in order to pinpoint areas of need. As the findings suggest, Home Economics teachers are aware of the challenges experienced by students with IDD but often feel they do not have the resources, supports, or training to support these students in their classrooms in order to effectively implement health promotion efforts. The addition of this study to current research will allow the perspectives of the participants to lend evidence to the important systemic changes that need to take place in order to truly effect positive change on health promotion efforts in schools. This study has been able to identify some gaps in knowledge that exist in this field and provide recommendations for the areas of need. Ultimately, these recommendations can help Home Economics teachers implement EBPs and adapt EBPs in their classrooms in order to better meet the needs of and support the health of students with IDD. Sharing the knowledge created by this study will contribute to teaching practices that subsequently have a positive effect on students' health, autonomy, confidence, and ability to fully participate in society. Knowledge mobilization through potential professional development and workshops will contribute to furthering the professional learning of Home Economics teachers. On an academic level, the research and knowledge created by this study adds to this important but under-researched field while on a personal note, this research will enhance my own teaching practice in the identifying and embedding of EBPs that support healthy eating and health promotion.

Recommendations

The following recommendations for changes to practice come from the data collected in this study as well as from available research literature. These recommendations include the use of the PEFM, systemic change including curriculum, school culture, funding, and teacher training, as well as the implementation of EBPs such as peer-to-peer supports, technology-based interventions, and the EFFC. Additionally, adapting EBPs, the investigation of dietary habits of students with IDD over time, and food literacy education's connection to health outcomes are recommended areas of further research.

Changes to Practice

Person-Environment Fit Model. The PEFN should be adopted because it promotes a wide range of EBPs that would benefit all students, not just those with IDD (Thompson et al., 2010, p. 171). This model's view of Intellectual Disability (ID) is superior to the traditional deficit-based perspective because the interventions that stem from it center on reducing the gap between a student's capabilities and the demands of the setting or activity in which they wish to participate (p. 179). To address the gap between competencies and the demands of the environment for students with ID, teachers can implement structured supports such as teaching new skills, using technology, providing peer and EA support, all of which facilitate the inclusion and participation of learners with diverse needs (p. 179). The PEFM can be used to help create accessible school-based interventions that can address both the personal and environmental barriers that impact students with IDD.

Home Economics and Special Education teachers should advocate for IEPs to include goals with objectives related to self-help and food preparation skills (Ayres & Cihak, 2010, p. 197). The IEP must include all types of supports needed by a student, not just academic goals.

These supports should enhance a student's development, education, interests, and well-being in order to increase their ability to function as an individual and as a member of their community (Thompson et al., 2010, p. 176). Person Centered Planning (PCP) should be used when developing IEP goals in order to envision the student's life now and in the future rather than limiting the discussion of aids and supports to only those that are currently needed or applicable (p. 174).

A challenge to the PEFM is that it requires a huge investment of time and effort beyond simply planning learning goals for a student. Despite this issue, professional development on how to integrate the PEFM, including components of Universal Design for Learning (UDL) and Positive Behaviour Supports (PBS) would result in more satisfying and meaningful school experiences for students with IDD, and lead to positive impacts on their learning outcomes (Thompson et al., 2010, p. 173).

Systemic Change. In order for Home Economics teachers and schools to effectively promote and support health in students, both the school culture and the systems that influence many aspects of society, including health promotion efforts, need to change. The barriers to health promotion are deeply rooted in how society and the economy are structured (Bandura, 2004, p. 145). Bandura (1998) indicates that using collective self-efficacy could raise awareness, advocate for change, and educate the public, this in turn would allow Home Economics teachers to enable colleagues, schools, families, community partners, and society at large to work together to improve the health of young people (p. 646). Curriculum needs to be changed to ensure that students are receiving education in nutrition literacy and health literacy as soon as they enter kindergarten, and Home Economics courses should be mandatory for all students. In the same vein, B.C. should follow the example of Sweden and provide additional instruction in Home

Economics to students with IDD to ensure they have the time and practice to develop and generalize the essential skills for healthy eating habits. Guidelines and policies that are created by the government are meant to ensure increased access to healthy foods and decreased access to unhealthy food; however, the findings from this study suggest that this is not happening in schools. Leadership at the district level and school level need to make sure that the *Guidelines for Foods and Beverage Sales in B.C. Schools* are implemented and followed in order to have a healthy school food environment. The government, districts, and schools need to make sure that Home Economics programs are funded properly to increase access to resources, EA supports, specialized equipment and technology, and even more importantly healthy foods, which are becoming increasingly expensive. Beyond that, Home Economics teachers need access to more professional development that specializes in health promotion and time for collaboration in order to promote health as a school wide initiative. Health and healthy eating are topics that can be taught in a variety of cross-curricular ways, it follows then that collaboration between Home Economics teachers, Physical Education teachers, and Special Education teachers, in consultation with families, is essential in order to share knowledge and expertise as well as develop comprehensive programs that include nutrition, physical activity, and skill development that support health promotion. Subsequently, collaboration with families and community partners to exchange resources and more importantly to create real life opportunities for students to generalize the skills they have acquired at school would have positive impacts on students' self-efficacy (Bandura, 1998; Bassette et al., 2019; Sun & Brock, 2022). Research from the available literature has made similar recommendations that require systems both inside and outside the education system to change (Bandura, 1998; British Columbia Ministry of Education, 2020; Government of Canada, 2015; Mitchell, 2006; Slater, 2013; Stewert & Taggart, 2014; World

Health Organization, 2016; World Health Organization, 2020); therefore, collaboration between not only teachers but all stakeholders in education will create a societal commitment to improving the health of students, especially those with IDD and will provide stronger and more consistent health promotion efforts.

Evidence-Based Practices (EBPs). Embedding the use of EBPs into Home Economics classrooms is essential to supporting health promotion efforts. Peer-to-peer supports, technology-based interventions, and the EFFC are three ways in which Home Economics teachers can better support students with IDD in their classrooms.

Structured peer-to-peer support programs would work well in Home Economics classrooms due to the collaborative nature of practical, hands-on work. Students with IDD could be partnered with students who are typically developing in order to facilitate not only inclusion, but also social opportunities, skill development and experiential learning that supports healthy habits. An organized program of peer supports, as revealed by Marks et al. (2019a) would be beneficial for both students involved in the partnership, and could potentially overcome issues surrounding the lack of EA support and limited teacher time mentioned by participants. This type of peer support program would allow for a great deal of opportunities for positive role modeling by the students who are typically developing and observational learning for the students with IDD.

Technology-based interventions such as Video-Based Instruction (VBI) and Computer-Based Video Instruction (CVBI) have become increasingly included in Special Education (Sun & Brock, 2022, p. 11) but resources are needed in order to make this technology more available and less onerous for teachers and staff to implement (p. 10). CBVI is the most commonly used of the technological interventions (p. 1) yet it needs to be more readily available in order for the

software to be used by more teachers, coaches, mentors, caregivers, and families (Ayers & Cihak, 2010, p. 207). School districts and individual schools need to invest more time in staff training, preparation and implementation of EBPs that use technology. It would be beneficial to have pre-made video banks and skill profiles as well as access to equipment, coaching and assistance for first time implementers (Sun & Brock, 2022, p. 10). These resources and supportive learning opportunities will empower staff to conduct these types of interventions.

Although these technology-based interventions require an investment of time and money, the benefits speak for themselves. The independent nature of VBI and CVBI frees up teachers and other support staff to provide live instruction to others (Ayres & Cihak, 2010, p. 195). This could provide greater flexibility and more efficient use of teachers' time. The literature shows that CBVI is a valuable instructional strategy if teachers do not have the money for materials, especially in Home Economics where the materials are consumables, or the time to offer direct instruction on a task (p. 205). This strategy may allow teachers to dedicate more time to other curriculum areas and allocate classroom budgets to other areas of need. VBI and CBVI have the capacity to overcome potential barriers experienced by individuals with IDD, such as lack of interest, lack of awareness, environmental constraints, physical challenges, lack of accessible equipment/spaces, and lack of funds (Bassette et al., 2019, p. 1440). These technology-based interventions can assist Special Education teachers, Physical Education teachers, and community partners in collaboratively developing a wide variety of skill-based opportunities and activities for people with IDD (p. 1451). The positive impact on student learning outcomes demonstrated by these EBPs suggests that all staff who work with students who have IDD should consider using these new technologies to support learning (Sun & Brock, 2022, p. 10).

There are many biological, physiological, and psychological factors that must be considered when evaluating the eating habits of students with IDD. Implementing the EFFC would help Home Economics teachers understand students' perspectives on food and find out how students with IDD are choosing the foods they eat. This EBP can help Home Economics teachers identify the internal and external factors that influence these choices in order to plan programs and activities that not only meet the needs of the students but also help them develop more confidence and autonomy in all food related activities, including meal planning, grocery shopping, cooking, and eating at restaurants, all of which will assist them in becoming more independent and able to fully participate in society. As illustrated by the study of Marks and Sisirak (2014a), the EFFC would have a positive impact on Home Economics teachers' efforts to support healthy eating habits of students with IDD (p. 44).

Future Research

Adapting Evidence-Based Practices. Advances in VBI technology such as Augmented Reality (AR) and Virtual Reality (VR) have shown positive impacts on teaching various skills but there is less evidence to support these practices due to issues of cost and the accessibility of the technology itself (Sun & Brock, 2022, p. 9); therefore, an area of future research could investigate adapting VR for games that help with acquiring food and nutrition knowledge. The literature makes it evident that interventions using technology to foster health promotion in children and adolescents have become very popular in the last twenty years, perhaps it would be valuable to explore how to adapt this advanced technology into daily educational environments (pp. 10-11). The process of adapting EBPs can be challenging; however, the Guidelines, Recommendations, Adaptations Including Disability (GRAIDs) exists in order to support this process (Rimmer, 2014, p. 1). Adapting existing EBPs to meet the needs and abilities of students

with IDD is one way to overcome the challenges of budget and time that were frequently reported by participants. The process of adapting EBP that currently exist can help overcome not only the challenges mentioned by Home Economics teachers, but also the barriers and challenges experienced by students with IDD (Rimmer, 2011, p. 181). These adapted EBPs could potentially be funded as pilot projects to test their efficacy and be reported on in future studies.

Potential Studies. The results from this study show a correlation with many studies in the field of health promotion for students with IDD; however, it is clear that a gap in knowledge exists in terms of exploring how the eating habits of this population develop as they learn and grow (Bandini et al., 2021; Hubbard et al., 2014a). It follows then that longitudinal studies to evaluate dietary changes over time and the impact of interventions on eating habits would be a recommended area of future research.

Although the results of this study indicated that food literacy was a key strategy for supporting health promotion, the literature review of Truman et al. (2017a) suggests that many studies have not been connecting the essential aspects of food literacy to health outcomes (p. 365). Participants in this study highlighted the importance of the connection between food and health which suggests the findings of Truman et al. represent a significant flaw in how food literacy is being taught and should be considered an area investigated by future studies.

Summary

Investigating the research question, What do Home Economics teachers know and need to know about supporting health promotion for students with IDD? has made it clear that Home Economics teachers have a critical role to play in addressing, fostering, and promoting health and healthy eating habits, it follows then that their perspectives guide systemic change to increase the education sectors' ability to support health promotion. Home Economics teachers are doing the

best they can with what they have; however, health promotion is challenging to implement effectively when not everyone is working towards the same goal or long-term vision.

Collaboration amongst all staff, families, community partners, and government agencies as well as more opportunities for professional development were indicated as beneficial strategies for improving the consistency and efficacy of health promotion efforts in schools. Participants reported they would like to improve how they are supporting health promotion for all students, especially those with IDD, but their responses suggest that there are many challenges that make this difficult. Issues around funding, time, and resources and supports will no doubt continue to be a barrier; therefore, focusing efforts on providing Home Economics teachers with more time to collaborate and professional development opportunities specific to addressing health and healthy eating for students with IDD through the use of EBPs will undoubtedly have a positive impact on Home Economics teachers' ability to effectively support this at-risk population, which in turn will result in positive health outcomes for these students. Through collective self-efficacy Home Economics teachers can work to create social change that will have a positive impact on the health of our youth and society as a whole.

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