

**Parents' Motivations and Experiences in a Family-Based
Management Program**

by

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public

Abstract

Background: Family-based interventions have shown to be effective in the treatment of childhood obesity. Numerous studies have shed light on the importance of involving parents in the treatment of childhood obesity, as parents are the primary agents responsible for promoting healthy lifestyles and behaviours in their children by encouraging healthy dietary habits and appropriate levels of physical activity.

Aim: The purpose of this qualitative study was to explore parents' motivations, barriers, changes, and experiences during their participation in a family-based outpatient weight management program. The research questions driving this study were about motivations of parents enrolled in weight management programs, their experiences, and changes and challenges that occurred through their attendance.

Methods: Semi-structured individual interviews with four mothers who attended a family-based outpatient program in Ontario. All interviews were tape-recorded and transcribed verbatim. Thematic analysis was used to analyze transcripts for common themes. Self-determination theory was used as a framework to understand parents' motivations and experiences.

Results: What motivated parents to be enrolled in the program is concern and the need to manage their child's weight; in addition, they continued because of their children. While attending the program, parents discussed the benefits of being in an autonomy- supportive environment, which was provided by the program team and families. Parents cited challenges that they faced when enforcing new healthy changes at home such as time scarcity, an

unsupportive spouse, and the child's behaviour. Parents identified several benefits of attending the program related to knowledge and skills gained.

Conclusions: When mothers' need for autonomy, competence, and relatedness was supported in the program, they experienced more engagement in treatment as well as reported positive changes in their behaviours. The results suggest that teaching parenting skills is essential to providing guiding principles in the everyday life of the child; hence, particular emphasis is to be placed on enhancing parents' skills as a way to support a healthy lifestyle for the whole family. Future research is needed to investigate the extent to which concern would motivate parents to enroll in their child's treatment.

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TABLE OF CONTENTS

AUTHOR'S DECLARATION.....	II
ABSTRACT	III
ACKNOWLEDGEMENTS.....	V
CHAPTER ONE: INTRODUCTION.....	1
BACKGROUND.....	1
RESEARCH GAPS AND RATIONALE FOR RESEARCH PROPOSAL	4
RESEARCH QUESTIONS	7
<i>Main Questions.....</i>	<i>7</i>
PRACTICAL AND CLINICAL IMPLICATIONS.....	7
CHAPTER TWO: LITERATURE REVIEW	9
SELF- DETERMINATION THEORY.....	9
CHILDHOOD OBESITY.....	14
PHYSICAL, PSYCHOLOGICAL, AND ECONOMIC CONSEQUENCES OF CHILDHOOD OBESITY	15
ETHOLOGY OF CHILDHOOD OBESITY: NATURE VS. NURTURE	19
<i>Genetic/Family History.....</i>	<i>19</i>
<i>Behavioural Factors.....</i>	<i>20</i>
<i>Environmental Factors.....</i>	<i>23</i>
THE ROLE OF PARENTS IN CHILDREN'S BEHAVIOURAL LIFESTYLES	26
POLICIES TO CONTROL CHILDHOOD OBESITY	29
MANAGEMENT OF CHILDHOOD OBESITY	31
SCHOOL-BASED INTERVENTIONS	31
PRIMARY CARE INTERVENTION	33
<i>Child's Age and Family-Based Obesity Intervention.....</i>	<i>36</i>
PARENTS' ENGAGEMENT IN PEDIATRIC WEIGHT MANAGEMENT	37
CHAPTER THREE: METHODOLOGY	48
RATIONALE OF QUALITATIVE METHOD.....	48
METHODS DATA COLLECTION- IN-DEPTH INTERVIEW	49
DESCRIPTION OF THE COMMUNITY CONTEXT.....	49
BACKGROUND INFORMATION ON THE PROGRAM	50
DATA COLLECTION.....	52
RECRUITMENT	52
<i>Interview Procedure.....</i>	<i>54</i>
DATA MANAGEMENT	55
ETHICAL CONSIDERATION	55
<i>Phase 1: Familiarizing with the Data.....</i>	<i>57</i>
<i>Phase 2: Generating Initial Codes.....</i>	<i>58</i>
<i>Phase 3: Identifying Themes.....</i>	<i>59</i>

<i>Phase 4: Reviewing Potential Themes</i>	59
<i>Phase 5: Defining and Naming Themes</i>	60
<i>Phase 6: Producing the Report</i>	60
TRUSTWORTHINESS.....	61
THE RESEARCHER’S ROLE	63
CHAPTER FOUR: RESULTS	65
5.1. MOTIVATION TO ENROLL.....	66
5.2. CHALLENGES IN IMPLEMENTING CHANGES.....	71
5.3. EXPERIENCE DURING THE PROGRAM	77
5.4. BENEFITS OF THE PROGRAM	82
CHAPTER FIVE: DISCUSSION AND IMPLICATIONS	91
PARENTAL MOTIVATION AND READINESS FOR CHANGE.....	91
THE EXPERIENCE OF SOCIAL INTERACTION AND SUPPORT	93
HEALTHY LIFESTYLE CHALLENGES.....	96
THE BENEFIT OF KNOWLEDGE AND SKILLS ON PARENTING SKILLS	98
IMPLICATIONS OF OUTCOME ON PRACTICE	104
IMPLICATIONS OF OUTCOME ON FUTURE RESEARCH	106
LIMITATIONS AND STRENGTHS OF THIS STUDY.....	107
REFERENCES	109
APPENDICES	171
APPENDIX A: RESEARCH FLYER.....	171
APPENDIX B: INTERVIEW GUIDLINE- SAMPLE QUESTIONS	172
APPENDIX C: INFORMATION LETTER FOR INTERVIEW.....	174
APPENDIX D: CONSENT FORM.....	176
APPENDIX E: ETHICAL CLEARANCE.....	177
APPENDIX F: ETHICAL CLEARANCE	178
APPENDIX G: ETHICAL CLEARANCE.....	180

CHAPTER ONE: INTRODUCTION

Background

The World Health Organization defines obesity as a pathophysiologic disease in which excess body fat is accumulated, and this condition can adversely affect a person's health and reduce her quality of life (2015). In the 21st century, the trend of childhood obesity has reached epidemic proportions, with increasing rates in both developed and developing countries. Indeed, addressing the issue of childhood obesity is a public health priority in several developed nations (Pyper, Harrington, & Manson 2016). According to the Organization for Economic Co-operation and Development (OECD), 1 in 6 children across OECD countries are either overweight or obesity (Devaux et al., 2017). In Canada, the prevalence of childhood obesity tripled from 2% to 9% between 1981 and 2013 (Janssen, 2013). The recent data shows that the rates of overweight and obesity have grown modestly in several OECD countries including Canada (OECD, 2014); and, the rate remains persistently high (UNICEF Office of Research, 2013).

It is anticipated that in the next two decades the prevalence of childhood obesity will translate into a higher level of adult obesity. Research suggests that by 2040, as many as 70% of overweight or obese children will become overweight or obese adults (Le Petit & Berthelot, 2012). Furthermore, childhood obesity can have significant long-term health ramifications and increase the risk of cardiovascular disease and diabetes (UNICEF Office of Research, 2013). Indeed, the Standing Committee on Health stated that it, "shares the fears of many experts who predict that today's children will be the first generation for some time to have poorer health outcomes and a shorter life expectancy than their parents" (Merrifield, 2007, p.1). Moreover, the

Healthy Kids Panel has expressed concern that the current prevalence of childhood obesity may result in children having a much lower quality of life than their parents, due to higher rates of chronic illnesses developed as a result of obesity (2013), which captures the importance of intervention to manage or prevent obesity during childhood. This concern is echoed by Olshansky et al (2005) that children today will have shorter life expectancy than their parents if the obesity epidemic continues.

Obesity is caused by a combination of factors including, but not limited to, genetic predisposition, excessive caloric intake, and insufficient physical activity (Vos & Welsh, 2010; Limbers, Turner, & Varni, 2008). Unhealthy eating habits, physical inactivity, and sedentary lifestyles are major modifiable risk factors for overweight and obesity; thus, behaviour modification interventions (i.e., prompting healthy eating patterns and increasing levels of physical activity) are considered an effective strategy when targeting obese children (Limbers et al., 2008). Developing healthy lifestyle behaviours, including physical activity and healthy eating patterns, is seen as the best approach to managing obesity and obesity-related diseases (Rush & Simmon, 2014). Thus, the Canadian Task Force on Preventive Health Care (2015) recommends that either primary care providers or weight management programs should address childhood obesity.

Some studies and public health programs have focused on exploring effective strategies for preventing or managing childhood obesity by addressing unhealthy eating patterns and physical inactivity in different environments (i.e., school, hospital, and at the family level). Based on empirical evidence, family-based programs are the most effective treatment for childhood obesity (Sung-Chan, Sung, Zhao, & Brownson, 2013; Wilfley et al., 2007). Targeting

parents along with their children in the management of childhood obesity has shown to be effective since parents play a prominent role in shaping children's habits related to eating and physical activity (Nyberg et al., 2015). In this regard, several studies have emphasized the importance of parental involvement in childhood obesity interventions for the success of pediatric weight management (Kreier et al., 2013; Collins et al., 2011; Young, Northern, Lister, Drummond, & O'Brien, 2007; Magarey et al., 2011; Heinberg et al., 2010). Indeed, the inclusion of parents in the treatment of their children has been shown to produce better results than other treatments that do not include a family component (Boutelle, Cafri, & Crow, 2012; McGovern et al., 2008). Thus, both parental behaviours and parental involvement in the treatment of childhood obesity are positively related to children's healthy weight-related behaviours (Avenell & Goode, 2008).

Family-based weight management programs are typically composed of nutrition, physical activity, and behavioural modification strategies and the inclusion of at least one of the parents (Douglas, 2016). Family-based programs are often delivered through hospital multidisciplinary teams (Skelton, DeMattia, & Flores, 2008). Behavioural family-based interventions aim to manage the problem of childhood obesity by educating parents to encourage the adoption of a healthy lifestyle for all family members, especially by targeting obesogenic factors, such as habits related to eating and physical activity (Woods, 2012). Family-based interventions targeting both parents and children have shown that reduction in parents' weight is a predictor of reduction in children's weight (Wrotniak, Epstein, Paluch, & Roemmich, 2004). Moreover, behaviour modification targeting parents has shown to promote sustained behavioural change in children (Epstein, Valoski, Wing, & McCurley, 1990; Golan & Crow, 2004). Interestingly, family-

based interventions for parents can affect weight-related behaviours in children because parents can effectively change the home environment and the child behaviours. Golan and Weizman (2001) found that improving parent knowledge around healthy eating and exercise also promotes positive changes in the child's Body Mass Index (BMI). Irby (2012) concurs that, "parents can be thought of as the behaviourists who guide their children's weight-related behaviours" as they make the decisions that affect the entire family (p.6). Parents have the ability to shape their children's weight-related behaviours (e.g., eating and physical activity), which ultimately impact their children's overall health and BMI (Golan, 2006). Family-based interventions include other behaviour modification approaches such as educating parents about stimulus control, how to start a behavioural reinforcement system, problem-solving, and positive parenting skills that emphasize praising children for behaviours that align with program recommendations (Douglas, 2016). Since several studies emphasized that the involvement of parents can be beneficial for improving their children's health behaviour (Burnet et al., 2008; Dalton & Kitzmann, 2008; Luttikhuis et al., 2009; Sacher et al., 2010), there is a need to explore experiences and motivations of parents enrolled in family-based treatment programs, especially to understand why these programs may be more or less successful.

Research Gaps and Rationale for Research Proposal

Research has shown that behavioural family-based treatment can lead to significant weight losses in obese children. Family-based pediatric programs are currently the standard treatment for pediatric obesity (Epstein, Paluch, Roemmich, & Beecher, 2007; Kitzmann & Beech, 2011; Bhawra, Cooke, Hanning, Wilk, & Gonneville, 2015; Willows, Hanley, & Delormier, 2012). Several studies have emphasized that parent involvement can be beneficial for

improving their children's health-related behaviours (Burnet et al., 2008; Dalton & Kitzmann, 2008; Sacher et al., 2010). It has also been shown that family-oriented programs can effectively promote children's healthy eating behaviours and physical activity (Dalton & Kitzmann, 2008; Burnet et al., 2008; Dreimane et al., 2007); at the same time, poor parental attendance is recognized as one of the major challenges to successful obesity treatment (Williams et al., 2010; Kitscha, Brunet, Farmer, & Mager, 2009; Cote et al., 2004). Some of the main contributors to parental dropout include time conflict, clinic location, unmet expectations, commuting challenges, and a lack of motivation (Dreimane et al., 2007; Alff et al., 2012; Perez et al., 2015; Grow et al., 2013; Brennan, Walkley, & Wilks, 2012; Skelton, Irby, Beech, & Rhodes, 2012; Braet, Jeannin, Mels, Moens, & Van Winckel, 2010; Hampl et al., 2013).

Understanding parents' reasons for participating in or withdrawing from childhood obesity management programs and exploring the motives and barriers to participation in an obesity-based intervention program (Lupi, Haddad, Gazmararian, & Rask, 2014; Moore & Bailey, 2013) would help public health professionals implement more effective programs of this nature (Wolcott, Huberty, McIlvain, Rosenkranz, & Stacy, 2011). The motivation of parents and children plays an important role in pediatric weight loss intervention effectiveness and lifestyle changes (Accurso, Norman, Crow, Rock, & Boutelle, 2014; Dietz & Robinson, 2005; De Niet, Timman, Jongejan, Passchier, & van den Akker, 2011; Braet et al., 2010; Gunnarsdottir, Njardvik, Olafsdottir, Craighead, & Bjarnason, 2011). Moreover, motivation to participate in their children's treatment is considered an important factor in parents' decision to continue with the treatment (Ewalt, Cohen, & Harmatz, 1972; Singh, Janes, & Schechtman, 1982; Miller, 1985). Motivation to change is also a key predictor of program success across various health

interventions (Chaffin et al., 2009; Thompson et al., 2011; Christie & Channon, 2014). Conversely, other research has shown lack of motivation can be a barrier to program participation and is related to less effective outcomes (Prochaska & Levesque, 2002; Nock & Photos, 2006; Dhingra, Brennan, & Walkley, 2011; Braet et al., 2010). Taylor and colleagues (2015) suggest that, “low levels of parental motivation to change overweight in young children highlight the urgent need to determine how best to improve motivation to initiate change” (p.1808). A family-based intervention study found confidence related to improved weight loss outcomes and successful completion of family-based programs (Gunnarsdottir et al., 2011). However, there is limited research examining the motives of parents who are seeking treatment for their children (Moore & Bailey, 2013).

“Investigating parental reasons for enrolling in programs for childhood obesity management could lead to modifying the programs’ promotion methods, so that recruitment strategies respond more effectively to parents’ needs” (Davidson & Vidgen, 2017, p.2). While several studies have focused on parents' reasons for declining pediatric weight management (Perez et al., 2015; Alff et al., 2012), few studies have investigated the factors that influence parents' decisions to enroll in such programs (Gillespie et al., 2015). In fact, there is a lack of in-depth information about what motivates parents to enroll in children’s weight management programs (Davidson & Vidgen, 2017). Hence, there is a need to explore the motivation and experiences of parents who have participated in an intervention program targeting their obese children (Gillespie et al., 2015; Ambler, Hagedorn, & Ball, 2010). Furthermore, uncovering parents’ views on the challenges to a healthy diet and proper physical activity may help healthcare professionals design better strategies for management of obesity. As Nock and Photos

(2006) stated, identifying the challenges faced by parents who attend such programs may help to explain how parent motivation could affect participation, “Both motivation and perceived barriers are malleable, and targeting these constructs can guide intervention researchers seeking to increase participation in child therapy” (p.356). Taken into consideration the role that parents play in childhood obesity intervention programs is the focus of this research.

Research Questions

The purpose of this research is to explore the motivations and experiences of parents participating in a family-based, outpatient program that aims to improve the lifestyle skills of family members to manage childhood obesity. Specifically, this research proposed to examine the motivations and experiences of parents involved in a family-based, outpatient program in Ontario, and accordingly will investigate the following questions:

Main Questions:

1. What are the motivations of parents of obese children enrolled in a family-based intervention program?
2. What barriers, if any, do parents experience in participating in such a program?
3. What changes, if any, were established as a result of the knowledge parents gained through their experience in the intervention?

Practical and Clinical Implications

Knowledge collected from parents who have participated in such a program may further assist health professionals in framing recommendations and programs targeting overweight or obese children (Cinelli & O'Dea, 2009). In addition, answers to these questions may inform

future strategies regarding the development of family-based interventions to increase the effectiveness and the retention of participants in such programs. It was expected that the findings of this study might fill some of the gaps in knowledge about the motivations and experiences of parents in family-based interventions, and provide some insight on the attempts of parents to make lifestyle changes for their overweight or obese children and their entire families. Moreover, it is anticipated that the results of the study will make a valuable contribution to the existing body of literature on childhood hospital based-interventions, specifically regarding the motivation to engage in a family-based, outpatient treatment program for the management of childhood obesity. It is hoped that this study will enhance understanding of the factors that contribute to the participation of parents in these programs, and help identify potential challenges and benefits associated with them.

CHAPTER TWO: LITERATURE REVIEW

The first part of this chapter provides background information about self-determination theory and its relationships to this study. In this chapter, a detailed overview of childhood obesity, as well as the consequences of childhood obesity on child's physical and psychological health, and the economic burden of childhood obesity will be provided. The later parts of this chapter include a review of the literature that explores factors contributing to obesity and overweight in children, and literature on management of childhood obesity in school and primary care settings. The final part of this chapter presents the role of parents in pediatric weight management.

Self- Determination Theory

Self-determination theory (SDT) is a motivational theory that has received a great deal of support in predicting health-related behaviour and in supporting health behaviour change (Ryan, Patrick, Deci, & Williams, 2008). In this study, self-determination theory is a theoretical framework that will be used to help illuminate parental motivations (Deci & Ryan, 2000). Within self-determination theory, motivation toward an activity or to behave in a certain way is classified into three different forms of motivation: amotivation, intrinsic motivation, and extrinsic motivation (Ryan & Deci, 2000). Amotivation refers to “the state of lacking the

intention to act” (Ryan & Deci, 2000, p.17). Intrinsic motivation means a person engages in an activity because he/she finds it interesting, enjoyable, or fun (Ryan & Deci, 2000). In contrast, extrinsic motivation means a person engages in an activity for pursuit of rewards, avoidance of noxious stimuli/punishment, or the desire for social approval (Ryan & Deci, 2000). Enhancing extrinsic motivation, such as providing rewards, does not necessarily guarantee long-term success, while enhancing intrinsic motivation will lead to long-term success and sustained behaviour change over time (Ng et al., 2012; Seifert, Chapman, Hart, & Perez, 2012). Promoting choices can enhance intrinsic motivation; if a person’s choices are promoted, he/she is more likely to maintain healthy behaviour changes over time (Seifert et al., 2012).

Ryan & Connell (1989) differentiated extrinsic motivation into four types of regulation: external, introjection, identified, and integrated regulation. The least effective form of regulation is external regulation in which a person behaves only to get an external reward, and to avoid a punishment. Introjection regulation is when a person might behave in a certain way to receive approval or avoid disapproval or feelings of guilt. These forms are the two forms of controlled motivation, which have not been associated with long-term adherence (Ryan et al., 2008). In contrast, identified regulation can be defined as a person who engages in certain behaviours because he/she values the importance of said behaviour.

Internalization can be defined as the process by which behaviours become relatively more autonomously regulated or valued over time. The most internalized form of extrinsic motivation is called integrated, which refers to “motives for behaviours that are important to the person, and they are engaged because they are also consistent with one’s other goals and values” (Patrick & Williams, 2012, p.3). Both identified and integrated regulation are forms of autonomous

motivation, which has been linked to enhanced maintenance and transfer of behaviour change (Ryan et al., 2008).

According to self-determination theory, self-motivation can be enhanced by the fulfillment of three innate psychological needs: competence, relatedness, and autonomy (Ryan & Deci, 2000). Satisfying or preventing these three needs would positively or negatively affect wellness, respectively. Satisfying these three basic needs is associated with an increased level of physical activity, decreased levels of unhealthy eating patterns, and improved psychological well-being (Edmunds, Ntoumanis, & Duda, 2007; Markland & Tobin, 2010; Schöler & Kuster, 2011; McDonough & Crocker, 2007)

- Competence refers to the need to believe in one's own ability and to being capable to do a task or an action. Behaviours that support competence include providing individuals with required knowledge and skills for change and feedback without forcing the person to do it. The experiences of achieving a desired goal or positive feedback help to fulfill the competence need (Hui & Tsang, 2012).
- Autonomy refers to the need to experience a sense of choice when carrying out an activity (Deci & Ryan, 2000). Behaviours that support autonomy include providing choices and opportunities for self-direction, while avoiding judging and minimizing control.
- Relatedness refers to the need to feel connected, loved, and understood. Behaviours that support relatedness include developing a warm relationship, respecting and understanding others' personal perspective, and minimizing any negative emotions. Satisfying relatedness needs in health settings was linked to helping patients be more open to learn or adopt knowledge (Ryan et al., 2008).

According to self-determination theory, in healthcare settings, “When patients have their psychological needs for autonomy, competence, and relatedness supported in the process of their health care, they experience more volitional engagement in treatment and maintain outcomes better over time” (Ryan et al., 2008, p. 5). Support for these psychological needs from healthcare-providers is linked to enhanced internalized self-regulation, and more internalized forms of self-regulation have been linked to sustained behavior change (Teixeira,Silva, Mata, Palmeira, & Markland, 2012). People are motivated to engage in an activity that satisfy their three needs, as an example, participants continued their participation in a program because being in the program might satisfy their psychological needs. As an example, this program might increase parents’ motivation for several reasons. The program provided parents with the knowledge and skills they need for making healthier choices without forcing them to behave in a certain way (autonomy); it helped parents to feel confident in their ability to make positive changes (competence); and finally, it helped parents remain socially connected with the program team and other families who participated (relatedness). Self-determination theory has been used as an explanatory framework to understand parents’ experiences.

However, if these psychological needs are not satisfied (thwarted), a person might experience diminished well-being (Deci & Ryan, 2000). Environment plays an important role in this process of satisfaction or thwarting a person’s needs. As an example, a person’s autonomy might be thwarted if he/she were pushed or forced to behave in a certain way; a person’s competence may not be satisfied if the person were made to feel incapable of achieving something; and, a person’s relatedness might be thwarted if that person felt neglected by or not connected with others (Ng, Ntoumanis, Thøgersen- Ntoumani, Stott, & Hindle, 2013).

Therefore, need thwarting may contribute to undermining a person's motivation to maintain a healthy lifestyle. For example, it might drive people to adopt unhealthy eating patterns or to have an unsuccessful experience with managing weight.

Self-determination theory sheds a light on the important role of the social context or specific factors within social environments that can facilitate or undermine a person's needs (Deci & Ryan, 2012). An environment can encourage or reduce a person's engagement in certain behaviours. An autonomy-supportive environment provides a person with information and opportunities to make choices, supports him/her to be more confident in his/her ability to behave in a healthy way, and enables him/her to feel connected with the people in that environment (Williams, Teixeira, Carraça, & Resnicow, 2011). In the context of this study, a parent may perceive the program as an autonomy-supportive environment that enhances his/her confidence in his/her own abilities (competence satisfaction), encourages him/her to make autonomous decisions (autonomy satisfaction), and supports him/her while making these decisions (relatedness satisfaction). This might result in individuals enjoying their experience in the program (intrinsic motivation) (Ng et al., 2013). It is important to note that satisfying these three psychological needs appears to be associated with maintaining intrinsic motivation as well as internalizing extrinsic motivation (Ryan & Deci, 2016). Findings from studies in relation to childhood weight management found that an individual may maintain certain behaviours if an intervention supports his/her basic psychological needs for autonomy, competence, and relatedness (Gillison, Standage, & Skevington, 2006; Markland & Ingledew, 2007). As described previously, the autonomous motivation of a person is improved if he/she views his/her participation as satisfying his/her needs. Thus, self-determination theory provides a useful

theoretical framework for conceptualizing parents' motivational factors for involvement in the program. In this study, the theory offers a lens into how to understand the impact of satisfying psychological needs through understanding the experiences of parents attending the family-based program and will be used to analyze the motives and experiences of parents.

Childhood Obesity

Childhood obesity represents a significant concern since it can impact a child's health through their entire life and result in significant personal, social, and financial costs. According to the Ontario Action Plan for Health Care and Statistics Canada, most obese children become overweight adults, resulting in greater risk of developing a number of adverse health conditions (Ministry of Health and Long-Term Care, 2012). Identification of the economic impact of obesity and related health complications can play a critical role in mobilizing societal and governmental interests and resources for prevention and management of obesity (Colman & Hayward, 2010).

Obesity can be assessed through a number of factors; BMI is a commonly used criterion. BMI is used to estimate the ratio of weight to height ($BMI = \frac{\text{weight in kilograms}}{\text{Height in meters}^2}$), which is closely related to both percentage body fat and total body fat (Gray & Fujioka., 1991). While BMI can be problematic due to its inability to consider various issues (i.e., body fat percentage, waist circumference, etc.) it is used as one of the most reliable tools for assessing obesity at a population level (National Obesity Observatory, 2009). Individuals are considered obese when their body mass index (BMI) exceeds 30 kg/m², whereas BMI in the range of 25-30 kg/m² is defined as overweight. BMI is estimated by the ratio of weight to height and is closely related to both percentage body fat and total body fat (Gray & Fujioka, 1991). In children, a healthy weight

varies with age and sex. In children, obesity is defined as a BMI greater than the 95th percentile (Flegal, Ogden, Wei, Kuczmarski, & Johnson, 2001). In addition to BMI, waist circumference (WC) is used as an indicator of abdominal fat mass (Després, Lemieux, & Prud'Homme, 2001). Measuring waist circumference provides a better predictor of obesity-related health risks such as coronary heart disease than BMI alone (Janssen, Katzmarzyk, & Ross, 2004; Folsom, Stevens, Schreiner, & McGovern, 1998); however, there are no waist circumference cut-offs available for children younger than 12 (Patry-Parisien, Shields, & Bryan, 2012). BMI percentile therefore remains a recommended tool for clinical use due to logistical complications in taking measurements such as the time required to take waist circumference and height measurements (Thijs, 2007; Cole, Faith, Pietrobelli, & Heo, 2005). Importantly, “Although BMI and waist circumference are very useful for population surveillance and research conducted in groups of people, these measures are rough guides for predicting obesity related risk within a given individual” (Janssen, 2013, p.91). Many experts believe that childhood obesity can be prevented by healthy eating and exercise; yet, the health of the Canadian population is shaped by several determinants, including low income and physical environment (inactivity) (Reading & Wien, 2009).

Physical, Psychological, and Economic Consequences of Childhood Obesity

These rates should be recognized as a major public-health problem given that childhood obesity is associated with higher incidences of obesity-related diseases, such as several cardiovascular diseases (CVD), hypertension, type 2 diabetes (T2D), hyperlipidemia or fatty liver, pre-diabetes, and asthma, and might increase the risk of premature mortality (Lau et al., 2007; Dollman, Norton & Norton, 2005; Haslam & James, 2005; Delgado, Barranco, & Quirce,

2008). These devastating diseases affect a large proportion of the global population, including children (Ebbeling , Pawlak, & Ludwig, 2002). According to the WHO (2013), 90% of people who are diagnosed with type-2 diabetes are either overweight or obese. The early health implications of childhood obesity can also be seen in the respiratory system; asthma among overweight and obese children and adolescents, as an example (Ho et al., 2011; Ginde, Santillan, Clark, & Camargo, 2010; Okabe et al., 2011). Davidson et al (2014) found that childhood obesity among children was linked with a reduction of lung volume measurements, which might result in impaired lung function. Moreover, obese children are at increased risk of becoming obese adults, further creating a major public health threat (Freedman, Khan, Dietz, Srinivasan, & Berenson, 2001; Hurt,Kulisek, Buchanan, & McClave,2010). A Canadian longitudinal study aimed to track BMI and physical activity level from childhood to adulthood among participants aged 7 to 18 over a 22-year follow-up period found that, compared to normal weight children, overweight or obese children were six times more likely to become obese adults and approximately 83% of overweight children became overweight adults (Herman,Craig, Gauvin, & Katzmarzyk, 2009). One of the explanations could be that behavioural patterns established in childhood tend to track into adulthood (Craigie, Lake, Kelly, Adamson, & Mathers, 2011). As Alrashidi (2016) explained in his research, “It is clear that overweight and obesity in children are the main contributing factors for several serious diseases that could appear early or later in life. In contrast, maintaining a healthy weight may protect against chronic diseases”.

There are many negative and potentially devastating social and psychological effects of childhood obesity (Janssen et al., 2004; Sahoo et al., 2015). Several studies documented that being overweight is one of most common reasons children are bullied at school (Bucchianeri,

Eisenberg, & Neumark-Sztainer, 2013; Puhl & Luedicke, 2012; Van Geel, Vedder, & Tanilon, 2014). According to the Health Behaviour in School-aged Children (HBSC) study, approximately 13% to 18% of Canadian boys and 14% to 19% of Canadian girls in grades six to eight experienced weight-related teasing (Janssen, 2015). Canadian research has shown that depression, anxiety, and unhealthy eating behaviour are some of the negative implications of stigmatization for weight among school-aged children (Goldfield et al., 2010). Another study on the negative psychological impacts of weight-based teasing among obese children revealed that weight-based teasing increases vulnerability to low self-esteem, depression, and suicidal thoughts (Janssen et al., 2004; Eisenberg, Neumark-Sztainer, & Story, 2003). Compared to their non-overweight counterparts, obese children who experience weight-based teasing tend to prefer isolated, sedentary activities (Hayden-Wade et al., 2005). Weight-based teasing increased the risk of binge eating (Neumark-Sztainer et al., 2002) and deterred children from physical activity (Jensen & Steele, 2008; Faith, Leone, Ayers, Heo, & Pietrobelli, 2002; Puhl & Suh, 2015). Hence, the avoidance of physical activity as an attempt to prevent more weight-based teasing and victimization (Salvy, De La Haye, Bowker, & Hermans, 2012) may result in additional weight gain (Goldschmidt et al. 2008). Taken collectively, these serious consequences of overweight and obesity during childhood can be devastating to a child's life (Sahoo et al., 2015).

Overweight and obesity are key risk factors for obesity-related chronic disease, which is contributing to the overall burden of disease worldwide (Public Health Agency of Canada, 2015; Janssen, 2013) and contributing to rising annual healthcare costs in Canada ranging between \$1.27 to 11.08 billion (Tran,Nair, Kuhle, Ohinmaa, & Veugelers, 2013). The rising costs of

obesity related health issues would place a significant burden on society. Canada has a public health care system, which means that as obesity-related disease rates rise, more public resources will be diverted to deal with these issues. Therefore, it may be an effective allocation of public funds to try to encourage healthy behaviour change in children to reduce the prevalence of obesity and lessen the expected future health cost to the medical system. Compared to normal weight children, obesity leads to increased use of hospital services for several obesity-related conditions when compared to normal weight children (Kirk, Ohinmaa, Colman, & Veugelers, 2012). It has been estimated that physical inactivity imposes an annual cost of \$10.8 billion in Canada, including lost productivity and direct health care costs (Krueger, Krueger, J, & Koot, 2015). Furthermore, excess body weight is believed to impose an annual cost of \$23.3 billion, (Krueger et al. 2015). Starting in 2012 there has been a 1% relative reduction in the number of obese Canadians, which is expected to reduce this annual economic burden by approximately \$3.2 billion by the year 2031 (Krueger, Turner, Krueger, & Ready, 2014). A Canadian study aimed to assess health service use and costs among overweight and obese children reported that in comparison to their normal weight counterparts, the healthcare costs, physician visits, and specialist referrals were higher among overweight and obese children. In addition, the study pointed out that, in 2006, the physician costs were respectively \$298, and \$356 among overweight and obese children compared to \$275 among normal-weight children (Kuhle et al., 2011). A Canadian retrospective study examining cases of obese children treated for perforated appendicitis found that overweight children have longer operative time and longer hospital stay, along with higher rates of wound infection and slower general recovery, compared to normal weight children (Davies & Yanchar, 2007). Considering that childhood obesity persists to adulthood, this would place a significant burden on the Canadian healthcare system. Given the

significant health and economic consequences associated with overweight and obesity, addressing behavioural factors of children is needed (Luttikhuis et al., 2009; August et al., 2008). Therefore, experts recommend that issues related to childhood dietary and exercise habits should be addressed as early as possible to reduce the prevalence of childhood obesity, which in turn will translate into lower adult obesity rates in the future (Herman et al., 2009; Singh, Mulder, Twisk, Van Mechelen, & Chinapaw, 2008).

Ethology of Childhood Obesity: Nature vs. Nurture

In general, risk factors for obesity are assessed in two categories: non-modifiable risk factors and modifiable risk factors. Non-modifiable risk factors are related to genetics and family history whereas modifiable risk factors include behavioural and environmental factors.

Genetic/Family History

Genetic/family history plays a significant role in the childhood obesity. According to the American Academy of Child and Adolescent Psychiatry (2008), a child with one obese parent has a 50% chance of becoming overweight; however, the chance of being an overweight/obese child increases to 80% if both parents are obese. This may be reflected by the lifestyle of the family or the genetic component (Adam & Murphy, 2000; Fox et al., 2014). Accordingly, the combination of genetic factors and behaviour factors (e.g., physical inactivity, unhealthy food habits) would lead to childhood obesity (Strauss & Knight, 1999). However, it is important to highlight the fact that the genetic factor alone does not play a major role in children obesity (Barnes-Svarney & Svarney, 2014). Previous research has indicated that while genes make substantial contributions to obesity, the primary cause of the obesity is likely an unhealthy lifestyle (Loos, 2010; Barlow, Trowbridge, Klish, & Dietz, 2002). Some experts have argued that

both environmental factors and genetic factors have roughly similar impacts on childhood obesity (Haworth, Plomin, Carnell, & Wardle, 2008). However, if an individual is genetically susceptible to obesity there is an increased risk of them becoming morbidly obese if they are placed in an unhealthy environment (Lee, 2009). So, it is the interaction of environmental and genetic factors that leads some individuals to overeating and lower physical activity levels, making it difficult for those people to maintain a healthy weight (Cecil et al., 2012; Foraita et al., 2014). However, even if an individual has a genetic predisposition to weight gain, ongoing adherence to healthy lifestyle habits can lead to enhanced health outcomes and better weight control (Foraita et al., 2014). Studies have shown that higher physical activity levels can offset individuals' genetic predisposition to weight gain (Li et al., 2010; Rampersaud et al., 2008). Thus, even though genetics play an important factor in weight regulation, individuals should focus on the controllable environmental and behavioural factors to attain a healthy weight. Francis Collins, director of the National Institutes of Health in the US, echoes these thoughts "However, the best opportunity to reduce risk in genetically susceptible people for the foreseeable future will not be to re-engineer their genes, but to modify their environment" (Schwartz & Collins, 2007, p.695). These comments cement the underlying reality of the interaction of genetics and environmental factors. To clarify, since genes cannot be changed, the proven health prescription for weight related issues is for the individuals to embrace a healthy lifestyle with high activity levels and healthy eating.

Behavioural Factors

The increases in childhood obesity rates have been linked to environmental factors such as free access to a high-fat diet and inadequate amounts of physical activity (Hill, Dorton, Sykes,

& DiGirolamo, 1989). Unhealthy lifestyles and changes in society (e.g., unhealthy eating, physical inactivity, and sedentary behaviours) are the factors responsible for the rapid rise in childhood obesity prevalence (O'Brien et al., 2007). The Canadian Community Health Survey findings show that approximately 22% of calories consumed by Canadian children and adolescents 4 to 18 years old do not fall under healthy categories set by Canada's Food Guide (Garriguet, 2004; Dietitians of Canada, 2010). According to Garriguet (2006), 7 out of 10 Canadian children 4 to 8 years do not consume the recommended servings of fruits and vegetables a day. Furthermore, more than one-third of the same age grouped children do not consume the minimum recommended servings of milk products, and one quarter children do not have the recommended daily amount of grain products.

Beverages sweetened with sugars (like sucrose or fructose) can be a significant source of excess calories and can increase the risk that an individual becomes overweight or obese (Beck, Tschann, Butte, Penilla, & Greenspan, 2014; Malik, Pan, Willett, & Hu, 2013; Jensen et al., 2013; Te Morenga, Mallard, & Mann, 2013). Zheng et al.(2014) conducted a longitudinal study of the cardiovascular health of children in Denmark. This study started when the children were nine years old. There was a follow-up at the 6 and 12 year points; thus, data was gathered when the children were ages 9, 15, and 21 (Zheng et al., 2014). This study showed that children who drank more than one serving of sugar sweetened beverages (SSB) showed higher BMI and waist circumference than their peers (Zheng et al., 2014). Several studies have demonstrated that reduced SSB consumption can lead to better weight control outcomes (Tate et al., 2012; Hu, 2013; Malik et al., 2013). Other studies refute this position (Vartanian, Schwartz, & Brownell, 2007; Kaiser,Shikany, Keating, & Allison, 2013). These studies seem to suggest that while SSBs

can have an impact on body weight, childhood obesity tends to be a multifactorial issue (Kaiser et al., 2013). Therefore, there is meaningful evidence suggesting that SSB consumption by children can contribute to higher obesity rates and that reducing SSB consumption can lead to better health outcomes.

Many children spend a large amount of time in front of television, a computer screen, or both. Moreover, it is recommended that children and adolescents accumulate 60 minutes of moderate- to vigorous-intensity physical activity daily, as recommended by physical activity guidelines (Gurnani, Birken, & Hamilton, 2015). However, research has shown that most Canadian children aged 5 to 11 and 12 to 17 years (93% and 96%, respectively), do not comply with these guidelines (Bagchi, 2010). According to Statistics Canada, children aged 12 to 17 years –old were significantly less physically active and spent more time being sedentary than those aged 5-11 years (Statistic Canada, 2015). There is an observable deterioration of the level of physical activity as children age (Public Health Ontario, 2016; Basterfield et al., 2011). Despite the fact that young children participated in more activity than children aged 12-17 years old, only 5% of children aged 5 to 17 are meeting the recommendations (Active Healthy Kids Canada, 2014). Previous studies provided evidence of significant negative effects of physical inactivity on weight gain among children (Al-Hazzaa, Abahussain, Al-Sobayel, Qahwaji, & Musaiger, 2012; Memish et al., 2014). In systematic reviews of studies that investigated the effects of physical activity in overweight and obese adolescents aged 12–17 years, physical activity was positively linked to beneficial changes in fat percentage with a reduction of other obesity-related diseases (Vasconcellos et al., 2014). However, despite the positive impact of physical activity, children face numerous challenges to engage in exercise and physical activities.

These challenges include lack of internal motivation, lack of external support from family and friends, lack of time, limited access to sporting services, concerns about safety, and cost of physical activity (Canadian Fitness and Lifestyle Research Institute, 2014; Public Health Ontario, 2016; the Sport Information Resource Centre, 2016). Hence, Ness-Abramof & Apovian (2006) argued that there is need for public health initiatives that promote healthier lifestyles in children, as at present, it is estimated that approximately 30% of the world's population acquires insufficient physical activity.

Environmental Factors

In addition to behavioural factors, environmental factors have been shown as contributing to childhood obesity. There are negative impacts relating to socioeconomic status and a lack of education about eating habits, physical activity patterns, sedentary activities, neighborhood safety, healthy food resources, food prices, and access to recreation and exercise facilities (McAdams, 2010). Consequently, this negative effect could lead to obesity in children and adolescents (McAdams, 2010). It has been noted that poorly educated parents who live in poverty are more likely to eat unhealthy food and be physically inactive thereby developing obesity (Devaux, Sassi, Church, Cecchini, & Borgonovi, 2011; Matthiessen, Stockmarr, Fagt, Knudsen, & Biloft- Jensen 2014). Education and income interact with each other to shape an individual's health and well-being (Feinstein, Sabates, Anderson, Sorhaindo, & Hammond, 2006). Hence, an improvement in education and income level contributes to better health behaviours and outcomes of both individuals and community (Butler-Jones, 2008). "Income inequality threatens health. Income drives many food and physical activity decisions. Families with limited incomes may not be able to afford to buy certain foods or to have their children

participate in some physical activities “(Healthy Kids Panel, 2013, p.42). The above quote captures how people’s health is not only shaped by their behaviours but also by their income status. In other words, the ability to have a safe neighborhood, adequate housing, nutritious and affordable food, and safe areas for exercise are affected by parental income. Individuals living in low-income neighborhoods have fewer opportunities to engage in physical fitness and exercise, which means socioeconomically disadvantaged residents are less likely to be physically active (Pampel, Krueger, & Denney, 2010). Physical exercise levels are impacted by socioeconomic inequality; children who have limited access to parks, exercise facilities, and safe play spaces in their neighborhoods are more likely to become overweight or obese (Singh Siahpush, & Kogan, 2010). In terms of the impact of socioeconomic inequality on food choices, individuals in lower income neighborhoods have decreased access to nutritional foods, which leads to cheap unhealthy food choices. Food insecurity and nutritional deprivation is another key result of socioeconomic inequality. Individuals living in neighborhoods with access to a wide range of healthy food options are less likely to experience obesity (Morland & Evenson, 2009). Thus, socioeconomic inequality can lead to impoverished people having less access to wholesome, nutritional food, which in turn leads to worse health outcomes such as obesity at young age. Parents living on a tight budget are facing difficulty paying rent/housing, transportation, food, and bills, subsequently lowering those families’ food budgets (Sudbury & District Health Unit, 2016). Those parents would have limited ability to afford healthy food because of the high cost (e.g., fresh fruits, vegetables, meat, milk, and yogurt), which results in buying cheaper food with lower nutritional value (Toronto Public Health, 2011). Multiple studies indicate that people with high socioeconomic status are more likely to consume a healthy diet, including fruits and vegetables, than individuals with lower socioeconomic status (Mackenbach et al., 2015, Darmon

& Drewnowski, 2008, Ricciuto & Tarasuk, 2007, Leibtag & Kaufman, 2003; Darmon, Ferguson, & Briand, 2003). Hence, people with low socioeconomic status eat less healthy or energy-dense food (Aggarwal, Monsivais, Cook, & Drewnowski, 2011; Darmon & Drewnowski, 2015). The cost of unhealthy food is lower than nutritious food, which might force families to make difficult choices regarding the affordability and health of food (Durham Region Health Department, 2016; Medical Officer of Health, 2015; Milway, Chan, Stapleton, & Cook, 2010). This would contribute to higher dietary fat consumption than would occur with healthy food, which increases the risk of obesity (Milway et al., 2010; Rogers et al., 2015; Barnes, 2012).

There is a strong relationship between education and health (Feinstein, Sabates, Anderson, Sorhaindo, & Hammond, 2006). According to the 2006 census, higher education gives people more opportunity to have better, higher-paying jobs (Statistics Canada, 2009). Level of education is associated with level of income and employment; having a low level of educational attainment creates limited employment opportunities and can result in low paying jobs (Berger & Parkin, 2009; Statistics Canada, 2016). In 2009, as an example, 82% of Canadian adults (aged 25 to 64 years) with college/university degree educations were employed, while only 55% of Canadian adults (aged 25 to 64 years) with less than high school education were employed (Statistic Canada, 2015). Compared to young people with a higher level of education (post-secondary graduation), young people with lower levels of education are at higher risk of being overweight/obese (Butler-Jones, 2011). One of the explanations is that individuals with less education are more likely to be of lower socioeconomic status and also more likely to be obese (Groot & Van den Brink, 2006) while people with adequate education are more likely to have better and healthier lifestyles (Feinstein et al., 2006; Groot & van den Brink, 2006).

Education provides parent with knowledge about the importance of nutritious food and feeding practices (Saxton, Hill, Chadwickm, & Wardle, 2009) and a wide range of skills essential for problem solving and decision-making, which helps in managing childhood obesity (Merrifield, 2007).

The Role of Parents in Children's Behavioural Lifestyles

Children whose parents are overweight may be at an increased risk of becoming obese, which has been related to family behaviours, i.e., eating habits and physical activity (Gurnani et al., 2015). Eating healthy and being active can prevent or reduce obesity; however, family environments shape parents' ability to make healthy choices for their children in terms of physical activity and food choice behaviours (Bhawra et al., 2015). Parents are directly involved in influencing their children's nutrition (Steptoe, Pollard, & Wardle,1995). Taking into account that children learn through repeated experience, Lindsay and colleagues (2006) shed a light on the importance of parents encouraging their children to improve their dietary food intake. In this regard, modeling is one of the strategies that a family can use to promote their child's healthy lifestyle thereby mitigating the risk of childhood obesity, since children mirror their parent's behaviour (Lindsay et al., 2006). As an example, parental modeling mainly by observation can directly affect children's behaviors (Wardle, Carnell, & Cooke, 2005). Moreover, children's physical activity can be promoted or inhibited by parent's behaviour and the family environment; parental encouragement and support are positively associated with children's physical activity levels (Bauer, Neumark-Sztainer, Fulkerson, Hannan, & Story, 2011; Bauer,Nelson, Boutelle, & Neumark-Sztainer, 2008; Wright,Wilson, Griffin, & Evans, 2008; Yao & Rhodes, 2015; Oliver Schofield, & Schluter, 2010; Pugliese & Tinsley, 2007).

Parents can create a supportive environment as a way to improve their children's health-related behaviours by acting as positive role models for healthy lifestyles (e.g., preparing healthy family meals, parents and children having dinner together, providing ample opportunity for daily physical activity) (Roblin, 2007; Sanchez Reicks et al., 2015) since research has shown that supportive parents provide the best foundation for healthier development of children (Danford, Schultz, & Marvicsin, 2015). As an example, eating together as family provides an opportunity for parents to encourage, communicate effectively, and share useful information about food and eating behaviours with their children (Musick & Meier, 2012; Videon & Manning, 2003; Rawlins, Baker, Maynard, & Harding, 2013; Gillman et al., 2000). Promoting regular intake of fruits and vegetables and lower intake of soft drinks and sweets is considered good parenting practice (Vereecken, Legiest, De Bourdeaudhuij, & Maes, 2009). However, the availability of fruits and vegetables plays a critical role in increasing fruit and vegetable consumption (Kratt, Reynolds, & Shewchuk, 2000).

A recent Canadian study examined the contribution of parental support behaviours in children meeting the health recommendations. It found that parental support behaviours can be seen as powerful predictors of children meeting their health guidelines (Pyper et al., 2016). Pyper et al (2016) found that particular parent behaviours such as taking children to visit locations where they can be physically active, and sharing meals together but away from the television can be seen as positive predictors of children meeting the Canadian recommendations of physical activity and fruit and vegetable consumption (2016). The authors suggest focusing on improving parents' behaviours could play a role in mitigating obesity risks and reducing the prevalence of childhood obesity (Pyper et al., 2016). It appears that targeting parental behaviours could improve parents' abilities and knowledge, and contribute to improving

children's physical activity and dietary habits. This shed a light on the importance of family involvement, which might help in creating supportive environments at home for children to make healthier choices.

On the other hand, research has found that negative parental modeling can also influence children's activity. As an example, a recent study found higher parental television viewing was linked to increase the risk of high levels of television watching among their children (Jago, Fox, Page, Brockman, & Thompson, 2010; Davison & Birch, 2002). Another study found that in families where children are allowed to eat unhealthy food, the children consumed larger quantities of sweets and soft drinks (Vereecken et al., 2009). Moreover, parents, as models for the intake of SSBs, have shown to be major determinants for higher consumption of soft drinks in children (Bauer et al., 2011). These studies clearly suggest that negative parental models can significantly affect children's lifestyle behaviours, which might result in unhealthy eating habits later in the children's lives. The increasing trend of minimal physical activity/exercise combined with the introduction of inexpensive junk/energy-dense food creates a complex environment for making choices between healthy and unhealthy behaviours (Adamson & Benelam, 2013; Jackson, Tester, & Henderson, 2008). This in turn can negatively influence parents' ability to handle or manage their child's health and behaviour (Ghosh, 2012). Higher levels of parental pressure have been associated with an increase in children's consumption of energy-dense food and beverages (Campbell, Crawford, & Ball, 2006; Ventura & Birch, 2008). Parental restrictive feeding practices tend to create a negative environment that leads to overeating as well as poorer self-regulation of energy intake in preschool age children (Faith Scanlon, Birch, Francis, & Sherry, 2004). Pressuring children to eat healthy food often dissuades

them from eating certain type of foods such as vegetables and fruits (Wardle et al., 2005). Similarly, higher levels of parental control and pressure to eat healthy food have been shown to be associated with lower fruit and vegetable intake (Galloway, Fiorito, Lee, & Birch, 2005) and higher intake of dietary fat among young girls (lee & Brich, 2002). However, moderate restrictions on child food intake have shown to have better results. For instance, children with moderately restrictive parents were able to consume fewer calories than children whose parents were severely restrictive (Gibson et al., 2012). However, some studies found parental pressure on the child to eat properly was positively related to lower children's weight status (Matheson ,Robinson, Varady, & Killen, 2006) and other studies found parental restrictions on children's food was associated with lower children's BMI (Farrow & Blissett, 2008; Campbell, Hesketh, & Krahstoever Davison, 2010). Further studies found no association between parental restrictions and child BMI (Spruijt-Metz,Li, Cohen, Birch, & Goran 2006). Taken together from the current literature available, it can be concluded that it is important to include family in the management of childhood obesity, given that families play integral roles in shaping children's food preferences and physical activity.

Policies to Control Childhood Obesity

At present, the Province of Ontario has a number of nutritional and health programs at schools. In this regard, the Province of Ontario implemented a School Food and Beverage Policy for public schools (Ontario Healthy Kids Panel, 2013). This policy includes a prohibition on the sale of calorically dense foods with low nutritional value in any primary or secondary school. The School Food and Beverage Policy has a number of objectives (Ontario Healthy Kids Panel, 2013). Firstly, it is intended to try to increase fruit and vegetable consumption by students.

Secondly, it is intended to help children maintain a healthy weight by enhancing children's knowledge about healthy food choices. Thirdly, the School Food and Beverage Policy is meant to help harmonize the current patchwork of policies and regulations at schools. However, this policy only applies to foods bought on school premises. It does not apply to food brought from home or purchased off-site. In addition, the policy does not apply to "special event days" in the school year (i.e., bake sales, hot dog day, pizza sales, etc.) since many schools rely on the revenue from special event day sales to finance certain extracurricular program activities (Ontario Healthy Kids Panel, 2013).

In addition to good nutrition, students also need appropriate levels of physical activity to maintain fitness. A Daily Physical Activity (DPA) policy (DPA) requires that all students up to grade 8 engage in at least 20 minutes of physical activity per day (Ministry of Education Ontario, 2005). However, the DPA has been in place for over six years and it has not had a meaningful impact on children's overall activity levels. A study of 16 Toronto schools showed that fewer than half of participating students (in grades 5 and 6) were provided with DPA every day and few children engaged in any form of sustained vigorous physical activity for over 20 minutes (Stone, Faulkner, Zeglen-Hunt, & Bonne, 2012). The researchers noted that those children who did perform DPA every day were more active than their peers and were less likely to be overweight (Stone et al., 2012). School obesity prevention interventions may contribute to unwanted consequences such as stigma (Dobbins, De Corby, Robeson, Husson, & Tirilis, 2009); stigmatization of children has an adverse impact on their psychological well-being (Puhl & Latner, 2007). Other research has demonstrated that policies have inconsistent effects on different schools since schools tend to have inconsistent adherence to policies (Registered

Nurses' Association of Ontario, 2014). Health and fitness policies are inconsistently implemented, enforced, and monitored by schools (Sanchez-Vaznaugh, Sanchez, Rosas, Baek, & Egerter, 2012) because of the lack of funding and limited /untrained staff (Belansky et al., 2010). Addressing these factors would better allow for healthy food and fitness policies to be implemented across the province of Ontario.

Management of Childhood Obesity

Behaviour interventions focused on modifying eating habits, physical activity, and sedentary activity level is thought to be a cornerstone of weight management programs (Spear et al., 2007). For an effective secondary prevention program to manage childhood obesity, program facilitators should have regular access to all these children. Both schools and primary care facilities should meet this criterion (Summerbell et al., 2004).

School-Based Interventions

Schools are a critical environment for children with obesity since schools are profoundly influential on children's health knowledge and skills development (Reading & Carr, 2011). Studies have shown that school meals provide a valuable opportunity for nutrition education and school restrictions on students' access to unhealthy food and beverages has the potential to lower the consumption of unhealthy food and improve students' nutritional intake (Kubik ,Lytle, Hannan,Perry, & Story,2003; Woodward-Lopez et al., 2010). There are mixed results for the effectiveness of school-based interventions in managing obesity; 17 out of 25 intervention studies were successful at reducing the participants' BMI (Doak,Visscher, Renders, & Seidell, 2006). There are a number of concerns regarding school-based intervention. One of the potential negative effects of school-based obesity intervention is stigmatization (Katz et al., 2005). Parents

and school officials were concerned regarding the impact assessing children's weight may have on stigmatization attached to obesity (Katz et al., 2005).

Stigmatizing overweight or obese children can be minimized if interventions target all students in schools (Dobbins et al., 2009); however, stigmatization cannot always be avoided. For example, when obese children are engaged with their normal-weight peers, they are more likely to be stigmatized because of their weight and potentially subjected to teasing (Dobbins et al., 2009). Another issue regarding the physical activities at schools is changing clothes during some activities like swimming, which can be a stressful experience for obese or overweight children (Dobbins et al., 2009).

Research emphasizes the role that school nurses can play in children's families and public health and medical agencies for preventive measures against these health risks such as overweight (Peery, Engelke, & Swanson, 2012; Berquist, 2015). School nurses can play a crucial role in the identification of childhood obesity thereby managing the risk of obesity-related diseases. Hence, accurate weight, height, and BMI assessment by the school nurse has shown to be a preventative initial step in identifying students at risk for developing obesity-related diseases such as T2D (Engelke, Guttu, Warren, & Swanson, 2008; Engelke, Swanson, Guttu, Warren, & Lovern, 2011; Faro, Ingersoll, Fiore, & Ippolito, 2005). BMI screening in schools can result in stigmatization if not conducted appropriately (Ikeda, Crawford, & Woodward-Lopez, 2006); yet, this issue can be avoided or minimized by training school professionals to deal with weight bias and use behaviour change techniques (Yager & O'Dea, 2009). While several studies have shown the effectiveness of school-based programs on managing obesity among school-aged children (Summerbell et al., 2004), there were some concerns raised about the

potential risk of stigmatization, availability of recourses, and parental participation (Wake & McCallum, 2004). Moreover, there are several challenges facing school-based intervention used to manage obesity because, “school-based intervention programs require much effort on budgeting and planning, as the cost of educating the teachers about the program, and providing facilities and infrastructure to conduct physical activities is enormous and prohibitive” (Hutchinson, 2010, p.336). Taken as a whole, because of the potential stigmatization some researchers considered school an unsuitable setting for managing childhood obesity (Edmunds, Waters, & Elliott, 2001; Wake & McCallum, 2004), while primary care facilities have been considered by some researchers an appropriate setting from which to manage childhood obesity (Taveras, Gortmaker, Mitchell, & Gillman, 2008; Wake & McCallum, 2004).

Primary Care Intervention

In addition to dietary guidance and exercise strategies, family psychiatric therapy was also found a critical long-term weight strategy in susceptible children (Flodmark, Ohlsson, Ryden, & Sveger, 1993). Flodmark and his colleagues suggested that if the treatment starts at 10 to 11 years of age, family therapy could be considered an effective approach in preventing severe obesity among adolescents. The importance of parental attendance was also supported by another study; interventions that included parents in children’s treatment have shown to be more successful for long-term, successful weight loss maintenance (Dreimane et al., 2007). Parents play a central role in preventing childhood obesity; however, there is a need for novel, but evidence-based, interventions that may enhance parent’s motivation to support and maintain children’s healthy lifestyles. Earlier studies have shown that combined child-parent weight management programs are more effective than a child group, or a group with inconsistent family

involvement (Epstein, Wing, Steranchak, Dickson, & Michelson, 1990). In line with these observations, a five-month family-based behavioural weight loss program aimed to examine how parenting skills and parent weight change can be considered predictors of child weight. It is important to note that parents who were overweight were targeted for weight loss while normal weight parents were asked to maintain their weight and during the treatment program. Parenting skills, specifically, positive reinforcement, modelling, and motivation, were targeted in each group meeting. The result of this study revealed that the family-based behavioural weight loss program was quite effective in reducing children's weight—a one-unit-reduction in parental BMI was associated with a reduction of ≥ 0.25 of the child's BMI unit (Boutelle et al., 2012). More recently, an online screening, brief intervention, and referral to treatment (SBIRT) e-Health tool was established, which helped enhance parents' ability to support children's healthy lifestyle behaviours (Avis et al., 2015). In addition, it is recommended that parents get involved in their child's behaviour programs designed to reduce risks associated with obesity, particularly diabetes and cardiovascular diseases (Van Buren & Tibbs, 2014). One hospital-based, family-oriented weight management program by Dreimane et al (2007), Kids N Fitness (KNF), was established to treat children at risk for overweight (BMI >85th percentile for age) and obesity (BMI >95th percentile for age). The main purpose of this program was to enhance lifestyle and family involvement in improving children's health by providing nutritional education, family therapy, and exercise activities (Dreimane et al., 2007). This study revealed that the intervention had positive health outcomes, such as reductions in BMI and waist, suggesting that family-based interventions focusing on exercise, healthy eating strategies, and lifestyle behaviour modification have been effective in improving children's health (Dreimane et al., 2007). However, this study had a major limitation due to the low subject retention rate, similar to what has been observed

previously (Dreimane et al., 2007; Tershakovec & Kuppler, 2003; Bautista-Castano, Molina-Cabrillana, Montoya-Alonso, & Serra-Majem, 2004).

In Ontario, there is a limited number of comprehensive multidisciplinary weight management programs for children (Healthy Kids Panel, 2013). In family-based pediatric programs, families and their children will have access to a dietician, a fitness practitioner, a social worker, a nurse practitioner, a mental health care provider, a consulting paediatrician, and some of these programs performs bariatric surgery for children with severe obesity. In Ontario, there are several family-based paediatric programs such as Personal Health Improvement Team, SickKids Team Obesity Management Program (STOMP), Nutrition and Healthy Lifestyle Promotion, and Paediatric Nutrition Guidelines, (Flander, 2015). An evaluation of STOMP has shown that while positive changes in terms of cardio metabolic, psychological, and health behaviours have been observed among enrolled adolescents, these participants did not have a significant change in their BMI (Luca et al., 2015). STOMP is a family-based paediatric program involving an interdisciplinary clinical team consisting of a dietitian, a psychologist, a nurse, an exercise therapist, and physicians (Luca et al., 2015). However, qualitative data indicated that families faced barriers that limited their ability to participate in the program, such as a lack of monetary incentives for low socioeconomic status families, commuting challenges, and time conflicts (Dreimane et al., 2007; Arai et al., 2015).

Both school and clinical settings were considered important resources for the study of childhood obesity; yet, there is even less research on family-based intervention (Moore & Bailey, 2013). What is important to note here is that there is limited information on the perspectives related to families' reasons to initiate a pediatric weight management program (Ball et al., 2012).

The focus of this study is to explore the motivation of parents attending with their overweight children a specific, family-based, community intervention in Ontario, Canada.

Child's Age and Family-Based Obesity Intervention

Lifestyle interventions have shown to be more effective in younger ages and less effective among adolescents (Danielsson, Kowalski, Ekblom, & Marcus, 2012; Knop et al., 2015, Epstein et al., 2007), highlighting the importance of intervention at early ages. A systematic review by Luttikhuis et al (2009) indicated that parent/family involvement has shown to be more effective among children younger than 12 years of age compared to adolescents. This is consistent with recent systematic reviews on the effectiveness of school-based interventions versus family-based interventions in the treatment of childhood obesity. These reviews highlight that family-based interventions have shown to be effective among children younger than 12 years of age while school-based interventions have shown more effective among adolescents aged 12 to 17 (Kothandan, 2014). Moreover, a three-year longitudinal observational study on the effectiveness of behavioural treatment of severely obese children and adolescents (aged 6 to 16 years of age) found that obese children are more likely to experience a clinically significant decrease in BMI compared with adolescents (Danielsson et al., 2012). In fact, considerable evidence exists among children aged 6-12 years; research has been more focused on the effectiveness of parents involved in the intervention in this age group than in the adolescent group (Kitzman-Ulrich et al., 2009; World Health Organization, 2016). Hence, further studies need to be done in the adolescent population, as this is, “an under-researched population group in whom obesity and associated behaviour patterns are increasingly already established” (McLean ,Griffin, Toney, & Hardeman, 2003, p.1001). Nevertheless, parental influence does not decline

as the child progresses through adolescence and parenting style remains strongly related to many of these adolescent behaviours (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Slicker, Picklesimer, Guzak, & Fuller, 2005). A recent study highlighted the benefits of parental involvement in weight management intervention with adolescents, since parental involvement helps develop an environment that fosters healthy lifestyle behavioural changes among children and adolescents (Chamay Weber, Camparini, Lanza, & Narring, 2016). Consequently, given parents' central role, including families in the treatment of childhood obesity could be beneficial for both age groups.

Parents' Engagement in Pediatric Weight Management

As Lindsay, Sussner, Kim, & Gortmaker (2006) emphasized,

“Parents play a critical role at home preventing childhood obesity, with their role changing at different stages of their child’s development. By better understanding their own role in influencing their child’s dietary practices, physical activity, sedentary behaviours, and ultimately weight status, parents can learn how to create a healthful nutrition environment in their home, provide opportunities for physical activity, discourage sedentary behaviours such as TV viewing, and serve as role models themselves. Obesity-related intervention programs can use parental involvement as one key to success in developing an environment that fosters healthy eating and physical activity among children and adolescents” (p. 179).

Such a perspective is especially appropriate given family’s crucial role in creating a supportive environment in which to promote healthy eating habits and a physically active

lifestyle. (Gruber & Haldeman, 2009). Importantly, research has continued to show the importance of having a family component as a solution to manage childhood obesity (Golan & Weitzman, 2001; Gruber & Haldeman, 2009; Panagiotopoulos et al., 2011). By involving the family, changes might be promoted in the child and the other family members. Parents act as decision-makers, including decisions regarding food and physical activity, which help create a supportive environment for improving and sustaining healthy habits (Gruber & Haldeman, 2009). Research indicates that the most effective interventions occur when the entire family unit is involved rather than just the patient as an individual (Golan & Weizman, 2001 Epstein et al., 2007). This highlights the significant influence of family-based intervention compared with individual intervention (Prioste et al., 2015). Social support from family members tends to encourage closer adherence to a healthy diet (Wilson & Ampey-Thornhill, 2001). Research has shown that weight-related behaviour intervention programs involving parents are more effective in reducing the BMI of child and adolescent participants (Niemeier, Hektner, & Enger, 2012; Young et al., 2007; Ewald, Kirby, Rees, & Robertson, 2014). However, factors that lead to child weight loss are still unclear (Ruebel, Heelan, Barte, & Foster, 2011; Faith et al., 2012). One of the plausible explanations of why parents' involvement in obesity interventions resulted in the reduction of the child's BMI is that these treatments effectively improve eating and physical activity habits of the whole family, which could facilitate successful weight loss in children (Epstein et al., 1980). Parental involvement is paramount in fostering healthy behaviours; disregarding the significant role of parents' attendance in weight-related health interventions could minimize the effectiveness of these interventions in making behavioural lifestyle changes among children (Soubhi, Potvin, & Paradis, 2004).

Niemeier et al (2012) conducted a review of 42 dietary interventions in 36 peer-reviewed papers to assess the impact of the parental role on influencing more effective weight-related health interventions for young people. The intervention activities included education about nutrition, physical activity, and healthy behaviours as well as behavioural therapy (Niemeier et al., 2012). This study found that mandatory parent participation in interventions resulted in a more effective reduction in subject BMI compared to less effective approaches with optional parental involvement. Interventions, which were longer in duration, tended to have greater success (Niemeier et al., 2012).

Health professionals can assist the family unit in obtaining the skills required to ensure children have the healthy dietary and exercise habits required to maintain a healthy weight. Barlow (2007) recommends family-based interventions as the first line of treatment for overweight and obese youth. Childhood obesity management programs are most effective when a multidisciplinary approach is taken to obtain the input of a range of health professionals including dietitians, physical education teachers, and child psychologists (Borner et al., 2016). These professionals can apply a range of strategies to assist in the family-based interventions. Such skills can include behavioural modification, behavioural therapy, parenting skills, and problem-solving skills to address the social/psychological consequences the subject may face due to their obesity (Faith et al., 2012). Successful childhood weight management requires parental involvement, which results in the whole family adopting healthy dietary and exercise habits. Parents can apply behaviour management principles to encourage behavioural change in children (Power, Bindler, Goetz, & Daratha, 2010). This may require parents to make changes to the home environment, which would encourage the whole family to adopt a healthier lifestyle

(Power et al., 2010). These interventions can include teaching parents how to encourage their children to consume healthier foods, prepare affordable healthy foods, and develop strategies to limit consumption of unhealthy foods (Power et al., 2010). These strategies aimed at the parents should focus on awareness of healthy behaviours and foods through repetition; family unit collective responsibility for healthy living rather than just giving prescriptive guidelines; and, promoting the idea that healthy eating is affordable, available, and attainable (Power et al., 2010).

Studies have shown that family-based interventions combined with behavioural change techniques are effective at managing childhood obesity (Luttikhuis et al., 2009.) Espinoza ,Guadalupe, & Arredondo (2010) corroborate this in concluding, “interventions with a nutrition and physical activity component that include education, behaviour modification, and parent skills training are an effective strategy for the prevention and treatment of childhood obesity” (p. 306). Management of childhood obesity should only be performed by trained health professionals who are skilled in the appropriate use of behavioural change techniques and who know how to interact with families in a non-judgemental manner (Stewart, 2011). Behaviour change techniques that professionals may apply include assessing change readiness, subject self-monitoring, effective goal setting, developing rewards systems to provide positive feedback loops, problem solving, and preventing subject relapse.

The above-cited studies indicate that changing the health behaviours of obese children within an entire family is more beneficial and effective than focusing on altering the child’s health behaviours alone (Epstein et al., 1990). A recent study found that parent-only interventions for childhood obesity may be as beneficial and cost effective as parent-child

obesity intervention, which sheds light on the effectiveness of involving parents in childhood obesity intervention (Ewald et al., 2014). In agreement with other studies, Golan & Crow (2004) argue that parents' engagement in pediatric weight management intervention is essential for modifying the home environment to promote and support healthy lifestyle changes (Janicke et al., 2007). Parents can influence their children's eating habits and physical activity levels by controlling the availability and accessibility of certain types of foods, and by being a role model (Golan & Crow, 2004). Research on the effects of parental involvement in childhood obesity intervention has shown that children whose parents were less involved in the intervention were less likely to lose any significant weight or to report clinically significant weight loss (Heinberg et al., 2010). Heinberg and his colleagues (2010) highlighted the beneficial impact of parental involvement on the child's success in an obesity program. Knowledge obtained from such a program can be beneficial because, to instill and encourage healthful habits in the home, parents need to be knowledgeable about nutrition and healthy eating patterns (Golan & Weizman, 2001). Parents with nutrition knowledge tend to make healthier food choices for their children (Sobol-Goldberg, Rabinowitz, & Gross, 2013) and parents' nutritional knowledge has also been linked to lower rates of obesity in children (Variyam, 2001). Several studies suggest that involving parents in any childhood intervention is ideal and can greatly increase their effectiveness since parents shape children's experiences with dietary and exercise habits (Snoek et al., 2010; Branscum & Sharma, 2011; Golan & Crow, 2004),

Parents are more likely to perceive intervention as a way to resolve incipient difficulties associated with their child's obesity (Schalkwijk et al., 2015). Parents often seek obesity interventions related to their children's psychosocial outcomes such as the child's overall well-

being and quality of life (Stewart, Chapple, Hughes, Poustie, & Reilly, 2008). There are several factors connected to parents that can interact with a child's treatment for underlying psychosocial issues including the presence of psychological problems in the parent, parental motivation, parental weight loss goals, and other factors which impact the success of an intervention aimed at a child's weight loss (Gunnarsdottir et al., 2011). Despite the benefits of involving family in children's care (Kalarchian et al., 2009; Morrison et al., 2014) factors affecting participation remain poorly defined (Morrison et al., 2014). Motivation for families who engage in childhood weight management intervention is considered as a significant predictor of child's weight outcomes (Accurso, Norman, Crow, Rock, & Boutelle, 2014). Both parental and child motivation must occur in tandem for successful family-based health intervention (Dietz & Robinson, 2005). However, there is limited research insight into parental motivations that drive parents to seek assistance for their children (Moore & Bailey, 2013). Older children and adolescents are especially impacted by their parents' level of motivation towards behavioural interventions (Douglas, 2016). Motivation in adults has been linked to a number of positive weight-related lifestyle changes such as improvements in exercise behaviour and eating regulation (Mata et al., 2009), and short-term weight-loss outcomes (Teixeira et al., 2004); thus, increasing parents' motivating factors may be beneficial in increasing their probability of completing the intervention and promoting weight loss (Wilfley, Kass, & Kolko, 2011).

A recent study examined teenagers' and their parents' perceptions of participation in treatment, which emphasized that motivation is a key factor for successful lifestyle behaviour changes (Sparud-Lundin & Andersson, 2015). Parents with high levels of motivation to participate and willingness to change weight-related behaviours, as an example, are more likely

to engage in pediatric obesity management programs (Braet et al., 2010; Gunnarsdotti et al., 2011) as parental motivation at the baseline predicted the completion of the programs (Braet et al., 2010). Children with motivated parents are more likely to have successful childhood weight management interventions (Barlow & Ohlemeyer, 2006; Accurso et al., 2014; Twiddy et al., 2012; Jinks et al., 2013). Low family motivation results in higher attrition rates among intervention subjects; however, this research did not indicate whether parental demotivation or child demotivation was more influential on attrition rates (Hampl et al., 2013). In light of the importance of motivation, parental readiness to make weight-related behavioural changes in terms of eating habits and physical activity levels for their families has a positive effect on childhood obesity treatment outcomes (Jakubowski et al., 2012). As Nock & Photos (2006) highlight, “In child treatments it is parent motivation for treatment that may be most important in predicting which families will attend treatment and adhere to prescribed treatment procedures” (p.346).

Motivation tends to fluctuate over time. Changes in motivation over time tend to be a stronger predictor of treatment outcomes than a subject’s baseline motivation (Nock & Kazdin, 2005). Parental motivations over the course of a family-based intervention tend to be linked to long-term changes. Increases in parental motivation over the course of the intervention are associated with child’s healthier diet (e.g., decreased consumption of SSBs and sweets, increased consumption of artificially sweetened beverages, and BMI) (Van Allen et al., 2014). However, studies focusing on reasons behind parent motivation to make weight-reducing lifestyle changes for their overweight children are limited (Taylor, Williams, Dawson, Haszard, & Brown, 2015) despite the fact that motivation has been considered a prerequisite for encouraging changes in the behaviour of individuals (Miller & Rollnick, 2008). Parents with lower motivational levels are

more likely to perceive additional barriers to healthy living than more motivated parents (Nock & Photos, 2006). In the UK, parents attending Watch-It, (a community child weight management program) found that parents more permissive in their parenting style had less effective outcomes (Twiddy et al., 2012). Permissive parenting styles included parents who did not resist their children's demands for unhealthy foods and parents who excused children from physical activity (Twiddy et al., 2012, p.1315).

Effective family-based interventions include educational sessions for parents as well as guidance to assist parents in creating healthier home environments (Braet et al., 2010). Parental motivation is reflected in the parent's level of attendance at educational sessions and whether they complete intervention tasks. Baseline parental motivation is higher for parents who also worked on weight loss treatment themselves compared with those who were supporting childhood weight loss treatment in isolation (Braet et al., 2010). Low parental motivation is a significant predictor of intervention dropout, even when other factors are controlled. Parental perspective and motivation alone may be insufficient in a successful weight management programs since, in addition to perspective and motivation, weight management programs rely on parents' knowledge about healthy lifestyle behaviours such as food, nutrition, and physical activity (Moore, Wilkie, & Desrochers, 2016). Individuals need to have the intention to accomplish a goal and the intention to engage in the behaviour necessary to achieve the goal (Perez et al., 2016).

Straub (2003) defined social support as, "the companionship from others that conveys emotional concern, material assistance, or honest feedback about a situation" (p.190). A number of studies indicated that the support parents perceived from health professionals in family-based

obesity management programs has been of vital importance to the completion of the intervention (Stewart et al., 2008; Dixey et al., 2006). As Dr. Laura Stewart and her colleagues (2009) stated, “Successful treatment of obesity demands a sustained commitment and effort from the whole family and the health professional must endeavor to maintain a positive attitude and help motivate the child and family towards weight control” (p.5). A qualitative study conducted by Turner (2012) revealed that parents were looking to learn from someone who had both the professional and personal experience to understand the challenges they faced. Parent perceptions of and experiences during attendance at obesity management programs with their children have not been completely clarified (Skelton, Buehler, Irby, & Grzywacz, 2012).

Black and Hurley (2007) focused on the development of eating styles for children and recommended, “Education and support provided by health professionals (i.e., public health nurses, family physicians, and paediatricians) and nutrition programs need to be strengthened to ensure that caregivers have the facilities needed to address issues of eating behaviours during childhood” (p.6). Parents in family-based weight management programs can learn about underlying medical causes of childhood obesity and how to encourage healthy lifestyles among the whole family (Perez et al., 2015). Thus, Burrows et al noted that over the course of treatment, parents who participated with their children in a treatment program made several positive changes regarding their feeding practices (Burrows, Warren, & Collins, 2010). Another study reported the positive outcomes, such as an increased percentage of weight loss, of programs that include a parental component (Golan, Weizman, Apter, & Fainaru, 1998). The study attributed this finding to parents since parents were taking more responsibility in providing healthy environments for their children (Golan et al., 1998). Thus, family-based management programs

aimed at improving parenting skills could be beneficial in influencing children's behaviours, especially relating to food and physical activity habits (Golan & Crow, 2004). Teaching parents about healthy food and how to prepare healthy and affordable meals as alternatives to fast food, and teaching parents specific strategies to reduce the consumption of unhealthy foods could be achieved in family-based management programs (Power et al., 2010). Parents are more motivated to participate in programs that help them learn about healthy behaviours and positive health beliefs than they are to participate in a program aimed at changing dietary behaviour (Hart et al., 2003). As an example, in a qualitative study conducted by Grow et al. parents reported parents were interested in the "informative part of the program" and liked that the program "encompassed everything, the nutrition, the motivation and the exercise" (Grow et al., 2013). Moreover, parents considered the opportunity to learn new skills and enhance their knowledge of lifestyle-related behaviours a motivator (Grow et al., 2013; Newson et al., 2013).

Also of note, there is a need for research to understand parents' reasons for engaging in pediatric weight management programs (Perez et al., 2015) because identifying motivation and facilitators of engagement in pediatric weight management programs may help to understand participation (Perez et al., 2016). Several studies focused on identifying parents' reasons for terminating paediatric weight management programs (Perez et al., 2016) while reasons behind families' enrollment in pediatric weight management are less well documented (Gillespie et al., 2015, Perez et al., 2016). Identifying parents' obstacles in pediatric weight management (e.g., time constraints, lack of motivation, and a past history of weight loss failure) might lead to successful weight management (Abolhassani et al., 2012; Wilfley et al., 2011), and enhance families' motivation throughout the program (Wilfley et al., 2011). Golan (2014) noted,

“a greater focus on the specific challenges faced by parents of obese children (i.e., building parents’ skills and confidence in managing children’s overeating, television viewing, and complaints about being overweight or participating in physical activity) may lead to more successful management approaches” (p.41). To fill some of the gaps in the literature through an in-depth exploratory investigation, the current research is intended to understand the motivations of parents enrolled in childhood obesity prevention programs, the reasons they stay, and the barriers they encounter.

CHAPTER THREE: METHODOLOGY

This section outlines the rationale for using qualitative methods in this study, which aims to explore parents' motivations, barriers, changes, and experiences during their participation in a family-based outpatient weight management program. A description of the method employed in this study will be presented. This chapter also provides information on the procedures used to collect and analyze the data and includes a discussion of the ethical considerations, trustworthiness, and the author's role as researcher.

Rationale of Qualitative Method

A qualitative research approach was best suited to address the research questions in this study since the researcher is seeking to understand parents' perceptions. There has been increasing interest in the use of qualitative research methods in the health research field (Dongre, Deshmukh, Kalaiselvan, & Upadhyaya, 2010). Using qualitative methods in health studies helps researchers understand the specific phenomenon of individuals with regard to their values, motivations, and reasons behind related health behaviours (Berkwits & Inui, 1998). This cannot be achieved using quantitative approaches (Green & Britten, 1998).

In this regard, the use of a qualitative research methodology allowed the researcher to obtain useful insights into perceptions and motivations of parents in family-based lifestyle intervention. Moreover, qualitative methods allowed an in-depth understanding of a phenomenon, as opposed to seeking a generalizable association between a determinant of health and a health outcome. Using qualitative methods helped the researcher obtain an in-depth understanding of human behaviours, such as parental motivations and experiences

regarding involvement in an intervention program (Wolcott Huberty, McIlvain, Rosenkranz, & Stacy, 2011). Therefore, the researcher utilized individual interviews with parents to understand their perspectives and experiences of being involved in a family-based, outpatient obesity treatment program in Ontario.

Methods Data collection- In-depth Interview

In-depth interviews were conducted with four parents (one per family) enrolled in an outpatient family-based program for overweight children in Ontario, Canada. An in-depth interview is considered “one of the most common and powerful ways to understand our fellow humans” (Fontana & Prokos, 2007, p. 9), and enables the researcher to obtain a detailed depiction of participants’ motivations and to uncover what is “in and on the someone else’s mind” (Patton, 1980, p. 196). Participant observation methods, as an example, would not answer the research question about parents’ motivation because motivation is a psychological construct, which cannot be directly observed (Touré- Tillery & Fishbach, 2014). In this study, semi-structured, open-ended questions were used to allow parents (interviewees) to respond freely and openly talk about their experiences and motivations for participating in a family-based outpatient program (Kedar, 2007) and to allow the researcher to follow up on meaningful and important points.

Description of the Community Context

The family-based outpatient program was located in a mid-size city in Ontario. The population of the city is approximately 160,000. In terms of ethnic origin, it is considered a multicultural city; the ethnic origins are as follows: French, Canadian, English, Irish, Italian, and Aboriginal. It is a bilingual city with an extensive francophone population in Ontario. There are

other common non-official languages such as Italian, Finnish, and German. The top industries in the city are retail trade, healthcare, and social assistance services. The main job sectors in are advanced education, research, tourism, health services, and arts & culture. There is a decline in the employment rate and the rate of unemployment, especially for youth, is high. The city has one of the highest percentages of obese people aged 18 and over at 33.8% while 29% of adolescents (aged 12 to 17 years) are either overweight or obese; yet, including the percentage of overweight people will make the problem of high rate of obesity in more apparent (Lavigne, 2016). However, to my knowledge, there are no national data estimates the percentage of obesity among children younger than 12 years old.

Background Information on the Program

The family-based, outpatient treatment program is funded by the Ministry of Health and Long-Term Care Ontario. The program is designed for children and adolescents between the ages of 2 and 18 years with a BMI over the 85th percentile, and classified as overweight or obese. One parent/guardian is required to attend the program and all parents/guardians and siblings are encouraged to attend the program. The program focuses on educating families to incorporate healthy lifestyle changes, rather than being preoccupied with weight and dieting. Instead of focusing on weight loss, the program focuses on weight neutral outcomes. The program is free of charge and 12-weeks in length, and the sessions are held at a public community location (public school). Participants are placed into different groups based on the child's age. At each session, families partake in a healthy lifestyle discovery session, support groups, and self-esteem building exercises, as well as play-based physical activity, which encourage participants to share information, gain experiences, and learn about healthy behaviours. The program provides a

multidisciplinary team of healthcare professionals that includes a dietitian, exercise specialist, social worker, nurse practitioner, and consulting paediatrician. Participants are provided with intensive educational programming, which includes health education, nutrition education, social support, medical support, and prescribed physical activity.

The program's team supports families in making healthy lifestyle choices through interactive nutrition education, fun physical activity, emotional support, health education, and monitoring in a positive group environment. Healthy lifestyle topics include ways to incorporate healthy eating behaviours into the family's daily routines (e.g., meal planning, shopping, eating healthy on the run, and cooking). Field trips to the grocery store and cooking lessons are examples of hands-on approaches to apply knowledge and develop skills that are used in the program. In addition, families learn about potential diseases and other medical concerns that can be prevented by making healthy lifestyle choices. Social workers undertake a range of activities aimed at boosting the self-esteem of children and their families, building body acceptance and expelling weight-related feelings of guilt and shame. Parents learn techniques and strategies for equipping their children with approaches to managing their emotions with positive coping skills. In addition, physical activity tailored according to participants' interests and enjoyment is incorporated into educational programs at every session to boost participants' fitness levels. These activities may include indoor gym activities, outdoor fitness activities, and special trips focused on novel activities (e.g., swimming, hiking, or snowshoeing, etc.). This diversity of activities allows participants an opportunity to engage in new activities with their peers, which helps participants decide what kinds of activities they enjoy enough to incorporate into their daily lives.

At the end of the 12-week program, participants may continue to receive support and return for an additional six-month period. They can also opt for a one-year follow-up to ensure continued success. The follow-up visit involves medical check-ups and discussions about the challenges and successes related to implementing healthy behaviour changes (e.g., nutrition, physical activity, self-esteem/body image, sleep, and sedentary and screen time). During the follow-up visit, families work on lifestyle goal-setting to motivate the child and family in order to set two goals for the following three- to six-month period. Moreover, learning or resource needs for the family are identified and met through individual counselling, a team member, or a community resource.

Data Collection

Ethics clearance of this research was obtained from both University of Waterloo Office of Research Ethics (ORE) and the hospital ethics committee for the outpatient clinic.

Recruitment

The potential sample group was intended to include parents of children between the ages of 6 and 12 years who participated in a family-based, outpatient obesity treatment program in Ontario. The recruiting process took place between October and November 2016. After receiving ethics clearance from the University of Waterloo, the researcher contacted the hospital ethics board (by email) to obtain ethics clearance to recruit participants from the clinic (see recruitment flyer – Appendix A). Due to the researcher's unfamiliarity with the process of the ethics approval from the clinic, there was a considerable delay in getting the ethical clearance.

After receiving ethics approval, the clinic team was contacted to request their support to contact families previously enrolled in the outpatient program and to post the recruitment flyer in the clinic for participants currently enrolled in the program. The researcher received three responses to the recruitment flyer; the participants were then contacted to ensure they met the sample criteria: 1) a parent who enrolled in a family-based outpatient program, 2) a parent of a child aged 6-12 years. However, as a result of the limited number of parents with children between the ages of 6-12 who responded to the recruitment flyer, the sample criteria was modified to include parents of children aged 6-16 years old. Then, another participant contacted the researcher by email. The initial goal of the study was to interview 8-10 parents; however, only four parents contacted the researcher to be a part of this study.

The researcher sent a copy of the information and consent forms to participants to ensure they were given a chance to understand the aim of the study as well as their rights. Once the parents consented to participate in the study, the researcher contacted them to arrange the interview meeting. One of the interviews took place in a public location (café) and the other three interviews were conducted via Skype based on participants' convenience.

Prior to commencing the interview, the researcher collected demographic information from all participants. Participants self-identified as female, Canadian, and all were married except one. All participants reported being employed and all participants had completed post-secondary degrees (three graduated from college and one from university). Face-to-face interviews were conducted with the purpose of capturing the motives and experiences of a parent of an obese, school-aged child (6-16 years old) enrolled in the clinic program.

Interview Procedure

The interviews were conducted in a location most convenient for the participants. Prior to the interview, the researcher explained the aim of the study and provided an opportunity for participants to ask questions, review the letter of information, and sign the informed consent. Both information and consent forms were completed and returned to the researcher before commencing the interview. After gaining informed consent, the researcher started the interview with a few general questions intended to create a more relaxed atmosphere (i.e., ask about their day). The individual interview included questions on topics related to: (a) motivations and experiences of parents of obese children enrolled in an outpatient family-based intervention program; (b) barriers that parents/families experience to maintain enrolment; and, (c) lifestyle changes, if any, that developed as a result of knowledge gained through attending. Throughout the interview, the researcher used probing techniques and follow-up questions, when appropriate, to encourage participants to elaborate on their answers (Denzin & Lincoln, 2000). In some cases, the researcher repeated the participant's words to clarify terms and language they used to enrich the description of specific questions without leading the interviewee (DiCicco-Bloom & Crabtree, 2006). During the interview, participants recounted and shared meaningful information about their experiences in the program and the challenges they faced while attending. At the completion of the interview, a letter of appreciation and \$30.00 CAD were provided to each participant as appreciation for their time. The interviews were digitally audio-recorded with the permission of participants and transcribed verbatim for subsequent analysis.

Follow-up discussions between the researcher's supervisor, the Office of Research Ethics at University of Waterloo, and the clinic Research Ethics Board members resulted in the

researcher gaining approval to utilize the four interviews the researcher collected prior to revocation of the approval. As a result, the clinic Research Ethics Board requested that any identification of the clinic or the clinic site remain anonymous in this thesis.

Data Management

The researcher conducted, recorded, and took hand-written notes during the interviews. All interviews were digitally audio-recorded, transcribed verbatim, and stored in a password-protected Microsoft Word files under the custody of researcher (Gill, Stewart, Treasure, & Chadwick, 2008). The completed transcripts were carefully compared to the audio recordings. The data and identity of all participants were kept confidential, as described in the ethical consideration section.

Ethical Consideration

To ensure all ethical requirements were met, before conducting the study approvals were obtained from the Office of Research Ethics at the University of Waterloo and from the clinic program. Once ethical approval was received, the recruitment process began. The most important people in qualitative research are the participants (Buchanan & Coulson, 2005); therefore, all participants were treated in accordance with the ethical guidelines of the Interagency Advisory Panel on Research Ethics (PRE) (Canadian Institutes of Health Research, 2014).

- **Informed Consent:** An information and consent form was sent to parents who identified interest in participating in the study. The informed consent form outlined the purpose of the study and described the type of questions asked and the voluntary nature of participation. After the participants agreed to participate, the researcher scheduled an interview with each participant based on their availability. Prior to commencing the

interviews, informed consent was obtained that included consent to digitally record the interviews. By signing both forms, the voluntary nature of participation was reinforced and it was emphasized that participants were free to withdraw from the study without consequence at any time, and to skip any questions they did not wish to answer. After acceptance, the researcher verbally explained the purpose of the study. With participant approval, the researcher commenced audio-recording the interviews to ensure accurate transcription. All the interviews were conducted in public settings (i.e., library).

- **Confidentiality:** To protect the participants' identity, reduce the chance of harming parents, and ensure confidentiality, any identifying personal information was removed in the interview transcripts. The recordings of the interviews were downloaded, saved to encrypted files, and deleted from the voice recorders. Written transcripts were kept in a secured and locked cabinet in the researcher's home office and written transcripts were also placed in an encrypted file. The researcher explained to participants that their names would not appear in the written thesis or in the report resulting from this study; however, with their permission, anonymous quotations would be used. Assigning a pseudonym to each participant ensured confidentiality throughout the data analysis.
- **Emotional Distress:** The researcher did not encounter any situations where participants experienced distress. However, in that circumstance, the researcher was prepared to ask the participant to take a break or to continue to another topic. It turned out that all participants were enthusiastic about sharing their experiences in the program.

Data Analysis

Thematic analysis is a method used for “identifying, analyzing, and reporting patterns (themes) within the data” (Braun & Clarke, 2006, p.79). According to Braun and Clarke (2006), thematic analysis is a flexible tool used to produce a rich description of participants’ experience, and it is also suitable for small samples (Joffe & Yardley, 2004). Moreover, for a novice qualitative researcher, thematic analysis tends to be easy to learn and do. Hence, the researcher adopted the thematic analysis approach to analyze the data since it was her first experience. Using Braun and Clark’s (2006) thematic analysis approach, the researcher followed six steps: (1) becoming familiar with the data, (2) generating initial codes, (3) identifying themes, (4) reviewing themes, (5) defining and naming themes, (6) and producing the report. These steps will be discussed below.

Phase 1: Familiarizing with the Data

The audio-recorded interviews were transcribed. At this stage, the researcher read and re-read the textual data, while also listening to the audio-recordings to get a close connection to the data. To become even more familiar with the data and develop a sense of the content, the researcher read each transcript and listened to each audio-recorder multiple times. Re-reading the transcripts helped the researcher pick up on the nuances within the data in relation to the research questions (Braun & Clarke, 2012). Simultaneously, while reading and listening to the interviews, the researcher wrote down initial ideas in the margins of each page—notes that were used in later steps. Taking notes at this stage helped the researcher read the data “actively, analytically, and critically, and start[ing] to think about what the data mean” (Braun & Clarke, 2012, p.205).

Phase 2: Generating Initial Codes

The researcher, at this stage, started to systematically analyze the data through a process of coding. The coding process is defined as “the assignment of simple words or short phrases to capture the meaning of a larger portion of (the original) textual data” (Yin, 2015, p.334). The researcher colour-coded the transcripts, line-by-line, after reading the transcript and becoming familiar with it. The line-by-line coding approach forced the researcher to verify codes that emerged from the data, minimizing the possibility of missing any important codes (Glaser, 1978). In other words, using this approach helped the researcher cover all the concepts and ideas in the transcripts. While doing line-by-line coding, the researcher used different colours as a tool to mark different topics and themes as well as to keep track of the ideas. The researcher used the Comments tool in Microsoft Word to label codes in the line-by-line process. Relevant ideas, events, actions, behaviours, activities, values, beliefs, emotions, and salient concepts voiced by participants were highlighted and labelled using short phrases written in the margins of the transcript file. This process was repeated for each transcript to uncover further codes. Memos were also written to assist the analysis of the data. According to Corbin and Strauss (2008), memos help the researcher identify concepts, categories, actions, conditions, or consequences and relationships between them. After each interview, the researcher wrote a memo, which included a brief reflection on the interview and early identification of ideas and questions that emerged during the interview. This approach helped the researcher to investigate certain questions during the analysis. Memos were written from the beginning of the analysis process to the final steps of identifying themes.

Phase 3: Identifying Themes

This phase began once all data had been initially colour-coded and the researcher had a list of the different codes, from across the data (Braun & Clarke, 2006). This stage involved collating similar codes into possible themes or sub-themes that represented the coded data. Braun and Clarke (2006) argue that a theme, “captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set” (p. 82). At this stage, the researcher reviewed the coded data to identify similarity and overlap between codes. Then, the researcher incorporated all initial codes that were found related to the research question(s) into a possible theme and assessed the viability of codes that were not robust enough in responding to the research question. After identifying themes, the researcher drew thematic maps that helped to visualize and identify relationships between themes and to consider if the data supported these relationships in telling an overall story about the data. The aim of analyzing the data is to tell a specific story that answers the research question(s), not just present all the information from the data.

Phase 4: Reviewing Potential Themes

The task at this stage involved two levels of reviewing and refining the gathered themes. At the first level, the researcher reviewed the coded data and identified whether the sub-themes fit the themes and formed a coherent pattern. At the second level, themes were reviewed and refined in relation to the entire data set to identify if they answered the research questions. These initial themes needed to be refined to reduce overlap and redundancy of themes. All transcripts were re-read to check if themes represented the entire data set and to determine if any emergent codes were missing. During this process of reviewing and refining, the researcher recoded, made

alterations to new findings, or discarded some redundant themes. At the end of this phase the researcher achieved “a fairly good idea of what [your] the different themes are, how they fit together, and the overall story they tell about the data” (Braun & Clarke, 2006, p.92).

Phase 5: Defining and Naming Themes

At this stage, the essence of each theme was identified and each theme was named. Braun and Clarke (2012) suggest that theme names need to be informative, concise, and easy to understand. Accordingly, theme names were created to appropriately reflect the data. The naming of each theme was chosen with consideration made to names that would provide the reader with an immediate sense of what the theme was about while staying close to participants’ language and concepts. At this final stage, a more accurate definition and refinement of the themes were carried out and the transcripts were re-read to ensure that the themes meaningfully captured the data in relation to the research question.

Phase 6: Producing the Report

Following the final phase of the thematic analysis, the researcher generated a clear, coherent, and convincing story about the data, based on the analysis. At this stage, the researcher identified selected themes and descriptions of the content of each theme, including participants’ quotations, which validated and supported each theme. Four themes emerged from the data in relations to the research questions: 1) motivation to enrol; 2) experience during the program; 3) challenges in implementing changes; and, 4) benefits of the program, which will be discussed in detail in the results section.

Trustworthiness

There are four traditional criteria by which both qualitative and quantitative research are judged: truth value, applicability, consistency, and neutrality (Guba & Lincoln, 1982). Specific to qualitative research, these are referred to as credibility, transferability, dependability, and conformability (Guba & Lincoln, 1982), which are principles that researchers pursue to ensure the trustworthiness and quality in qualitative research projects (Morse, Barrett, Mayan, Olsan, & Spiers, 2002). Credibility has been described as the ability of the results to properly represent the realities of the respondents (Guba & Lincoln, 1982). Transferability involves the ability to show that the data was collected from a sample that is representative of the population (Guba & Lincoln, 1982). Dependability refers to the replicability of the study; for example, if the same study was to be repeated could the same results be achieved (Guba & Lincoln, 1982). Conformability refers to whether the results can be confirmed by another researcher using the raw data. The researcher provides a number of methods that were taken to ensure the trustworthiness of this study. Strategies for supporting trustworthiness will be used throughout the research project, not only in the outcomes of the research (Morse et al., 2002). The trustworthiness of a research study is an important concern in qualitative research (Creswell, 1998); therefore, it is essential to consider the data collection and analysis that will be used in the study to ensure the trustworthiness of qualitative research. Unlike quantitative research where the validity of the study depends on instrument constructions, in qualitative research, the “researcher is the instrument” (Patton, 2002, p. 14), which means the rigor of qualitative research depends on the researcher’s ability and effort in ensuring trustworthiness of the research.

Peer Debriefing: Peer debriefing was used in this study to ensure credibility (Creswell & Miller, 2000; Guba & Lincoln, 1982). Peer debriefing involved someone familiar with the research or the topic reviewing coding and systematic analysis stages. The researcher requested feedback from a member of the dissertation committee who was willing to provide guidance on the process of analysis and research findings. Feedback from the researcher's supervisor was garnered and incorporated into the analysis process. This process allowed a second individual to question and challenge the researcher's results in a constructive way (Creswell & Miller, 2000; Guba & Lincoln, 1982; Lincoln & Guba, 1986; Stiles, 1993). The dissertation committee also had input on the coding and thematic considerations.

Reflexivity: Reflexivity was used to ensure the conformability and credibility of the study (Guba & Lincoln, 1982; Creswell & Miller, 2000). Reflexivity involved the researcher disclosing her assumptions, beliefs, and biases that may affect the inquiry, allowing readers to understand my position (Creswell & Miller, 2000; Guba & Lincoln, 1982; Stiles, 1993). Throughout the study, the researcher disclosed in a field journal any biases or assumptions that may have affected the research process. To minimize any potential biases, the researcher had regular meetings with her supervisor to discuss and examine the research process (Shenton, 2004). By using this approach, the reader could ensure that the results were based on the data and not the researcher's feelings and assumptions.

Thick Descriptions: This strategy is intended to help other researchers determine transferability and dependability (Guba & Lincoln, 1982; Shenton, 2004). The researcher has attempted to provide a rich description of methodology, including research methods, the characteristics of the participants, the data collection, and analysis process, in the methodology chapter. In this study,

thick descriptions of the data collection and data analysis were outlined in the methodology chapter to help the reader understand how the findings emerged (Shenton, 2004). Thick descriptions benefit the reader by helping them feel as though they have experienced the situation in question, to assess its resonance and transferability to other contexts (Guba & Lincoln, 1982; Lincoln & Guba, 1986).

The Researcher's Role

To ensure the transparency of this study, the researcher disclosed assumptions, beliefs, and biases in relation to this research, allowing readers to understand her position (Creswell & Miller, 2000). Based on the insights gained in the researcher's education to date, she would like to describe how some experiences in her life shaped her interest and enhanced her perception and knowledge of the research question, and how that helped her during her work with the participants.

I have completed my Bachelor of Science Degree in Saudi Arabia, majoring in Food and Nutrition. Throughout my undergraduate degree, I took several courses that dealt with the health of people, especially children. In these recent years, I have been actively involved in a range of conferences focused on health promotion, nutrition, and obesity issues. Throughout my studies, I have come to appreciate that effective nutrition can contribute to superior health and wellness outcomes and can lead to reduced incidences of diseases and enhanced quality of life. While attending conferences about health in Saudi Arabia, I learned that social determinants of health (especially income and education) play a major role in people's health and shape health-related behaviours, which stemmed my interest in developing a deeper understanding of the different factors that play a role in childhood obesity. During my Masters program at Waterloo University,

I took a qualitative research course with Dr. Elena Neiterman, which ultimately was a way to enhance my ability to understand qualitative methods. During the course, I was eager to understand why parents of obese children are behaving in certain ways, and excited to think that information would help public health policy makers design specific recommendations to fit those families. Understanding the core aim of the qualitative research approach led me to develop a deep and profound interest in qualitative studies. I am a novice researcher; however, through the knowledge gained from the qualitative research course in my Master's program, previous dissertations, and scholarly journal articles, I became more knowledgeable and self-confident as a qualitative researcher during this process.

I have become aware that my age, gender, cultural understanding of weight, education, and personal background, may impact participants' willingness to share their experiences or research process or findings. I am a young, Saudi, female researcher with a background in Health Sciences; that means I am not married and do not share the same life experiences. I do not have the same cultural traditions and values as Canadian parents, As much as I tried to recognize and learn what it was like to be a parent in terms of life experiences and barriers of everyday life, I would never completely understand parents' life decisions. I inevitably came into this research with preconceived perspectives on health, the impact of community-based obesity prevention programs, and challenges that parents may face. I understood there might be a power imbalance as I have a higher level of education and am more immersed in the overall project. Therefore, I raised my awareness of this potential bias, remained non-judgmental toward participants' experience, and maintained my role as objective throughout the research processes (i.e., during collecting, analyzing, and interpreting the data). I did not impose on the participants' personal

views and assumptions or judge their ideas or the reasons behind their health-related behaviours and decisions. To avoid biased questions, I checked the interview guide with my supervisor for biased questions and rephrased or removed them. I discussed the research findings/interpretations with the research committee to ensure the participants' voices are represented in the findings. Personal reflection was used as a way to assess my personal impact during the research process. While conducting the study, I used my field journal to reflect daily on my own impressions, experiences, opinions, and biases as a researcher interviewing parents of obese children about their motivation to enroll in a healthy weight childhood obesity management program. Throughout the course of this research, I strived to make every effort to ensure the objectivity; however, it is important to acknowledge that my presuppositions may influence the interview questions and their interpretations.

CHAPTER FOUR: RESULTS

This chapter presents the research project's findings generated from data collected from a total sample of four mothers. The interviews explored families' motivations to enroll in a family-based pediatric weight management program. In this chapter, the researcher discusses in detail the four key themes: 1) motivation to enroll; 2) challenges to implement changes; 3) experience during the program; and, 4) benefits of the program. Participants' actual quotations are used to provide a fuller picture of the presented findings.

Participants' Characteristics and Demographics

Participant	Role in Family	Marital Status	Child's gender/age	Mother's Education	Employment Status	Status in Program
1	Mother	married	Girl/12 years old	College	Employed	Completed
2	Mother	married	Girl/15 years old	University	Employed	Currently enrolled
3	Mother	married	Boy/10 years old	College	Employed	Currently enrolled
4	Mother	divorced	Girl/11 years old	College	Employed	Completed

5.1. Motivation to Enroll

The data showed that parents enrolled in the program were driven mostly by intrinsic motivating factors; they were seeking a health intervention for their children largely to boost their own feelings of competency and capacity in their roles as parents. Yet, most participants enrolled in the program expressed genuine concerns regarding their children's health and well-being and felt fear about their child experiencing or being at risk of developing weight-related diseases. For example, one participant discussed the concerns she had about her child's weight after learning from a nurse practitioner that her child was obese.

“My son has had some difficulties, like his nurse practitioner had indicated that he was on the obesity scale. He was not too bad but he's kind of cautionary range.” (P3)

Another mother expressed concerns about her daughter's weight and the potential risks for developing serious chronic diseases, especially given her ex-husband's family history of obesity-related diseases.

"My daughter is overweight and her dad's side of the family, there is illness like diabetes and serious diseases that she would be prone to get." (P4)

A third participant voiced different concerns related to stigma and the psychosocial health of her child, and talked about how stressed and worried she felt about her child's safety and the need to protect her self-esteem:

"Kids are mean and I didn't want my daughter to have to think of bullying. I did not want her to have to go through life being self-conscious; I want her to grow happy. That's what motivated me." (P1)

Moreover, one of the parents expressed concerns and feelings of uncertainty about her ability. For example, she talked about her inability to manage her child's weight, which highlighted her own need to be able to manage her child's weight. The following quote captured her thoughts accordingly.

"I was very concerned with her not because she was overweight but because I didn't know how to help her." (P1)

Most parents in this study were concerned about their child's weight. One of the mothers identified that she lacked the required knowledge or skills to be able to make a change in the lifestyle patterns in their home environments. Hence, the data showed that participants enrolled in the program because they valued the importance of taking action in their child's health as a

way to feel more confident and competent in their ability as a parent. In addition, the findings showed that parents enrolled their children in the program, not only for the child's health and wellness, but for the opportunity to learn key strategies or tools to apply at home to better relate to or understand how to motivate their children. These data also highlight parents' intrinsic desire to obtain the knowledge and skills to effectively help their children become more autonomous when dealing with their health issues.

Two participants talked about the benefits of a family approach and especially how important it was for mothers to be involved with their children in the program. For instance, when asked about what mothers considered important when choosing the program, one participant, a mother of a 12-year-old girl, talked about how the program helped the whole family, not just the enrolled child, in making healthier lifestyle choices. This broader benefit enabled the mother to feel more capable of providing a healthier environment for her entire family at home.

"I heard great things about it. I heard that it wasn't just for the children, it wasn't just about exercise, and it was the whole package. So, it was about learning how to eat properly, eating the right food, learning about different calories, learning about fat, learning about reading labels. It was a whole family thing. It wasn't just for her, and it was making changes for your whole family. That was a big thing for us. It was for her originally but all of the benefits that it offers you." (P1)

Similarly, when asked about factors affecting their decisions in choosing a family-based program, another mother believed that learning together as a whole family was a good idea in

terms of supporting healthy lifestyle changes for all family members and not isolating individual children:

“The biggest thing for me was the idea of the whole family. It was not just centering him out in any way. It was all of us. We're all on board; we're all learning the same things and the kids are learning it in a different way than we're learning.” (P3)

The family-based program provided learning experiences and opportunities to engage in situations to increase knowledge, develop skills, and ultimately impact change for the whole family. In addition, the family style approach provided an interactive learning environment where kids gained autonomous, experiential knowledge (i.e., learning about food choices) and skills in a hands-on learning environment. Two participants viewed the family-based approach as an opportunity to create a support system at home where every family member was involved. The results showed that most parents' motivations for enrolling in the program were twofold. First, it was largely internally driven by concern and uncertainty in the pursuit of feeling more capable of making changes, and second feeling supported to make these changes, and experiencing care for their children when managing the children's behaviour.

These two parents also recognized that the family-based program could provide externally motivating factors to increase their children's own self-determination needs. For instance, the program supported children by providing them with tangible knowledge and skills, which could then be used as strategies to be applied and reinforced at home. Notably, three mothers wanted to maintain their attendance in the program for their children, but the data also showed that what motivates the child to continue, motivated his/her parents. This cyclical pattern of positive

reinforcement is crucial in motivational psychology. Positive reinforcement is viewed as “any pleasant or desirable consequences that follows a response and increases the possibility that the response will be repeated” (Wood, Wood, Boyd, Bracey-Lorenzo, & Lambright, 2005, p. 344). In this study, participants felt more passionate about continuing in the program when their child was happy and engaged in the program.

“The benefit she was getting; I’ve seen her starting to use the tricks at home... She was coming up with different options to try... She was doing that on her own. It was not me saying to her. So, seeing the benefits she was getting out of the program is what kept us going.” (P1)

In this example, the mom explained her daughter’s self-reliance to find different options, “doing that on her own” meant her daughter had the opportunity to experience independence, feel capable of making changes on her own, which supported her child’s learning. Another mother highlighted how the program improved her child’s self-esteem and, in particular, changed the way he communicates with others:

“Mostly just seeing how much my son embraces it and how excited he was. Watching him the other day how much he enjoyed being with kids. He’s kind of an odd guy who doesn’t have a lot of friends, so that was a big part of it.” (P3)

Children in group-settings have opportunities for social support and encouragement from other children. This data showed connecting with other children helped them feel like they belonged, increased their enjoyment in the program, and enhanced their satisfaction and how much better they related to others. Being in group-based activities with other children of similar weights reduced the feelings of isolation and enabled children to feel more confident and secure

(Dixey, Rudolf, & Murtagh, 2006; Lucas et al., 2014). Parents in this study reported positive outcomes for their children, including improvements in their children's knowledge and skills (e.g., feeling capable of making changes and open to try new things) and more positive social relationships with their peers in the program (e.g., feeling accepted by other children).

Lack of a child's intrinsic motivation has been cited as one of the main reasons parents dropped out of family-based intervention (Perez et al., 2015). In this study, parental enrollment in the program was largely driven by the parents' internal motivation to be capable parents. Enhancing parents' skills allowed them to pursue and achieve more autonomy and competence in dealing with their children's habits. Yet, three participants indicated that children generally enjoyed being in the program and they ultimately continued in the program to support their children's ability to make their own choices, increase competence (try and excel at different tasks), and improve relatedness (be accepted and loved by other children). Ultimately, three parents valued how the program improved their child's behaviours, which motivated parents to continue their participation in the program.

5.2. Challenges in Implementing Changes

Eating and physical activity habits are embedded in everyday practice; hence, when making behavioural changes, participants in this study needed time and support from partners to implement these changes. Three participants in this study were interested in creating healthier environments for their children; however, to varying degrees they noted their own concerns about inconsistently implementing or engaging in healthy patterns. For example, some of the participants experienced difficulty consistently staying on track developing new patterns and attributed this challenge to unsupportive partners, lack of time, and difficult child behaviour.

Three participants noted that busy schedules limited their ability to support healthier lifestyle changes and explained the challenges these lapses had on building new patterns. For instance, one mother of a 12 year old talked about rushing to complete many daily activities, and the competing demands of busy schedules that constrained the time she needed to shop and prepare healthy meals. The following statements illustrate the struggle to implement healthy food practices into their daily lives.

“I was busy. Sometimes it was easier to throw a ready-meal dinner in the oven. That was easier and faster so that’s what we did. We do great one week with meal-plan and everything worked out fantastic. Then the kids have to go on the weekends or I did not get grocery shopping. We used what we have.” (P1)

Another participant described the negative consequences of limited time on their ability to provide healthy food choices.

“The hardest part about making changes ... it's the busy lifestyle, like having to go to hockey for a certain time. I think having a full schedule does not help. You have to have less to have time to make non-processed meals and it is hard. Sometimes you don't have time because there are other things that have to be done.” (P4)

A mother of teen daughter reported that her busy schedules limited their ability to engage in physical activity with their child and would limit their ability in making healthier choices

“We all have a gym membership. Do we attend regularly all day? No. So unfortunately, as you know when life and work and things like that, the things that drop off are the self-care and health.” (P2)

Lack of time posed a significant challenge to carrying out healthy behaviors such as preparing healthy meals. All these sentiments exemplify the stress that the three parents felt about not being able to provide their children with healthy meals, which undermined their ability at times to adhere to a consistent nutrition plan. Although three parents recognized the importance of making healthy choices and expressed a desire to provide healthy foods, they voiced concerns about not being able to provide these choices on a consistent basis which left them feeling defeated in creating a healthier environment for their families. Social environments can limit a person's ability to satisfy his/her psychological needs (Deci & Ryan, 2000). These three mothers felt that they were not accomplishing the goal of maintaining healthy behaviours and expressed challenges of limited time, which contributed to a diminished sense of competence among mothers. For example, participants identified occasions when they provided less nutritious meals – “meal-ready dinners” in order to manage the demands of their busy schedules. If one's environment is not supportive, parents can be drawn toward engaging in behaviours such as providing a fast and less nutritious meal. In other words, an individual who feels he/she is capable of performing a specific behaviour or changing their behaviour is more likely to make those changes or behaviours (Arkes, 1978; Aitken, Pelletier, & Baxter, 2016). Three of the four parents in this study felt they could not always maintain healthy choices due to the pressures of time, making it more challenging to carry out the tasks and preparation to make lifestyle changes; however, practical and emotional support from partners also mitigated this effect.

Support from partners was important to participants (mothers) in this study, with two reporting that practical and emotional support would help them make better choices, especially in terms of acquiring food. For example, one mom of a 12 year old felt lonely without support

from her partner. She felt the lack of support from her partner created an obstacle in making changes to create new, healthy lifestyle practices at home, which ultimately affected her motivation and her child's behavior.

"I would make for the kids what me and my daughter were eating and then he would be like "I am not doing that". He will do his own thing and they "I want that, I want". So that was hard; getting him on board was the hardest part. Because you have to have everybody 100 percent; otherwise, it's not going to work." (P1)

"My daughter was working out with me. I was trying but I did not have any encouragement so I can only work out when he is not home. Otherwise he is like "Why you doing that? You are going to hurt yourself."(P1)

Another participant discussed the challenges she faced dealing with an unsupportive partner. While her husband was not self-motivated to make lifestyle changes, this participant did note he would make changes for the kids:

"My husband was probably the most difficult challenge. He is the biggest resister by far and it is more to do with the food aspect because he worked shift work. He's kind of a big snacker and he likes when he comes home he just wants to kind of junk food type because it is 4:35 in the morning and he just wants to eat something quick. He is the biggest resister but when we talked about it, I think when he would see how the kids could accept it more then he would accept it and then he started forcing it." (P3)

Psychological needs thwarting is defined as - a person's needs for autonomy, competence, and/or relatedness is undermined by someone or by their environment (Cotterill, Weston, & Breslin, 2016). Along with limited time, two mothers cited unsupportive husband as another challenge. Two mothers were left feeling they lacked resources and were incapable of maintaining healthy pattern because of lack of support from their partners. The two mothers stated that their effort to create healthy patterns at home was sometimes diminished by their partners. In particular, one mother talked about her husband's discouraging response to eating healthier meals "*I am not doing that*". Another two mothers also explained unsupportive actions, bringing unhealthy food and snacks into the home, and how much it diminished their efforts to make change. These unsupportive behaviours as one mother later explained hindered and lifestyle changes she was making for herself or her child, "*I did not have any encouragement, I can only work out when he is not home*". In this study, the data revealed that supports at home played an essential role in enabling the entire family to make better choices. In particular, two mothers in this study voiced their desire for more support and a united positive parental model for the children and expressed a need for a supportive environment to assist them with making healthy choices. One mother reported, "Because you have to have everybody 100 percent; otherwise, it's not going to work". In this case, not being supported by her partner created an unsupportive, lonely home environment with no one to relate to in making changes (relatedness-thwarting).

Child behaviour was also cited by three mothers as a significant obstacle to implementing healthier lifestyle changes, particularly when mothers tried to introduce new eating patterns at home or attempted to change children's food choice options. For example, one participant felt

frustrated by her 'selective-eater' daughter and went on to critique some of the program information and the team for not encouraging children to try new types of food.

“There is a lot of food that she won't eat. We are trying to incorporate it in different ways because when we did the program like she was told, “if you don't like it don't eat it”. But sometimes it's like it's a habit like you develop your taste your buds like eventually, it will be ok.” (P4)

Another participant similarly expressed frustration in her attempts to help her child use and apply the new knowledge at home and in places outside of home:

“It was challenging her to get on board and to see what was happening that was wrong. Getting her to utilize all the tricks everywhere and not just at home with mommy is another challenge. She started doing the tricks at home with a glass of water; have a glass of water and instead of having food. Having an ice-cold glass of water.” (P1)

Another mother talked about changing child's habits related to unhealthy food practice such as eating snack.

“Honestly they are pretty good kids. I think it would just be out of habit. They just will not stop to think before they do stuff. They come home and they want a snack.” (P3)

Most of the participants faced challenges when they initiated enforcing changes at home and teaching their children healthy eating habits. The data showed that children who had

difficulty adapting left some parents feeling inadequate about their ability to provide a healthy home environment.

5.3. Experience During the Program

Three participants described communications with the program team in positive terms. Some of the participants discussed the program team using positive ways, such as “supportive” and “open”. For example, two participants described how helpful and professional the team members were when speaking and listening to both children and their families. They also appreciated being able to ask questions and talk freely without fear of being judged:

“The team who are delivering the program are absolutely lovely. They are, as I said before, you can tell that they are very committed to helping these kids and helping families that shine through with every session.” (P2)

“Like, the team themselves are just so positive and nice and they answer all the kind of crazy questions we ask.” (P3)

Creating an open line of communication was considered an important first step to understanding the issues related to each family member—how they felt and child (family) centered issues—to establish the platform for effective experiences to commence. A mother of a teenaged daughter talked about the benefits of learning in a relaxed environment, and especially appreciated the array of professional staff members, which helped both her and her daughter to learn.

“I’m very pleased with her participation in the program, because having people besides mom and dad advocate and share that information in a very relaxed non-judgmental setting, I think it’s really helpful.” (P2)

Another mother of a 12-year-old girl explained how helpful it was to communicate openly and freely with team members. For example, she shared how much she learned by being able to openly discuss concerns, feelings, lifestyle behaviours, and practices (i.e., feeding style, dealing with the child):

“The discussion ranged from everything from everyday teenage stuff, as they are dealing with their emotions, dealing with stress, dealing with little things that should not bother them but they do not know how to deal with this. They’ve taught me a lot.” (P1)

Two mothers talked about establishing trust with the program team. By remaining non-judgmental in this type of setting, participants felt brave to open up to discuss different topics related to adopting healthier choices, which allowed them to gain the knowledge they needed and discuss more difficult challenges. Therefore, despite the sensitivity of the child’s weight topic, parents shared their personal stories of challenges and successes and were more open about talking about unhealthy behaviors such as preparing less healthy meals.

The above data highlighted several factors that contributed to developing a sense of trust between parents and the program team. The program team developed a sense of trust with parents by establishing a rapport, offering advice without forcing any changes, listening to parents without judging, and enhancing parents’ skills. Three participants felt respected and

understood by the program team, which helped to maintain the positive parents-professionals relationships. A recent study indicated that the feeling of a meaningful belongingness with others (relatedness) might have been promoted by positive interactions with staff and other families (Veloso et al., 2015). When professionals help to satisfy their patients' basic psychological needs, this results in improving patients' motivation (Williams, Deci, & Ryan, 1998). Concurrent with this literature, another mom discussed the positive interactions she experienced with the qualified and supportive program team members. She further explained that team members communicated patiently with parents and focused on helping both parents and their children with opportunities to learn how to develop a healthier lifestyle:

“I think the professionals that work in the program ... I think you can see that they are really committed to the program, this love passion that comes across. I really respect the fact that they stay completely engaged with the kids and stay completely with the parents. They look and actively seek opportunities for the kids to try different activities and that's something we would necessarily do as a family. I think those are the things that kept us engaged in the program.” (P2)

These feelings of being truly understood and respected was a significant motivating factor for one mother, “I think those are things that are kept engaged in the program”. Being in a non-judgmental setting where she felt accepted, respected, and understood motivated her to continue her participation in the program.

In addition to the positive experience with the program team, it was consistent across most interviews that participants enjoyed the group meetings with other families because the sessions provided them with emotional and practical support. For instance, one mother of a teenaged

daughter felt free to ask questions, as well as openly discuss her concerns and frustration with other families. She explained all the benefits gained by learning new strategies or solutions from other families, in dealing with the frustrations she experienced with her daughter.

“It is kind of fun to bounce things off of other parents. We know that we are not alone and we know you know the struggles in our house are similar struggles in other people's houses. Having conversations and respecting one another's privacy, respecting one another's opinions and it is interesting because every one of our kids is different. It is interesting to learn strategies that other parents use or even just you know it's just an opportunity for parents to share frustration to share some of the challenges they have and in a support setting which is very nice.”

(P2)

Another participant reinforced how helpful the meetings with other families were, and how invaluable a resource the sessions were for her throughout the program. She explained how satisfied she felt about the ability to ask questions freely, the opportunities to share concerns and frustrations, and the ability to identify different solutions with other families who had similar situations. She explained how other families provided her with strategies to manage some of the frustrations of making new changes at home.

“Like the openness, that the other families are coming with help, motivated us as well. We have actually become really close to the process so we are just commenting in the last class one of the moms like said ‘I'm really impressed with you guys and how open everyone is’ and we're like ‘you're open so we're open’ and there is kind of a tender moment between the three families and in some ways

I think that's one of the things that I've liked the most is just cheering the other challenges that people have and how they deal with that. Then if there is the frustration I had really been like 'oh we went through that, we did this' and it's like I am going to do it and see if it works like such a thing kind of motivating that the group and the team hosting it has been very supportive. I really like that type of support; openness and you do not feel like anyone is judging you for saying anything. That has been really helpful because you can ask questions ... like being able to ask questions to people who knew and do it every day but not knowing judge for asking that is.” (P3)

Another mother of a 12-year-old daughter shared similar thoughts about the benefits of exchanging experiences with other families:

“The connections that I made with other parents struggling with the same thing I was struggling with. Different tricks and stuff that everybody's learned. It was like community giving advice and it was awesome.” (P1)

This safe, comfortable, and non-judgmental environment played an important role in creating a safe space of mutual support where families shared knowledge, fears, and exchanged personal stories (i.e., three participants had the opportunity to share their experiences, opinions, and challenges with other families). Openness “reflects the extent to which a person enjoys new experiences, has broad interests, and is imaginative” (Prinz, Stams, Deković, Reijntjes, & Belsky, 2009, p.353). Openness to talk with program team members and other families was considered essential for participants in this study, which resulted in them developing trust and sharing personal stories and experiences without fear of being judged. As one participant noted,

“you do not feel like anyone is judging you for saying anything.” These three participants in this study talked about freely disclosing their personal views and opinions in the group meetings and not feeling judged by other families. These findings showed that the support system offered by other families helped participants to feel accepted and understood by others. Sharing knowledge, advice, and experience with the program team and other families provided parents with the opportunity to gain competence and feel able to make and adopt better choices for their families. Moreover, the program team was seen as understanding of parents’ perspectives, providing relevant and meaningful information, and respecting different choices while avoiding judgment (supported parents’ autonomy needs). In the context of this study, being in a positive, supportive environment helped parents feel confident about their ability, have control over their choices, and feel more connected with professionals and other families.

5.4. Benefits of the Program

All participants shared how their family life had improved since attending the program and, in particular, noted tangible benefits related to their family’s health, lifestyle behaviours, and family dynamics. The education component of the program provided parents with opportunities to develop better parenting skills (i.e., how to help children develop ownership of their eating choices) and to gain knowledge and develop skills that influenced their ability to manage the barriers in their environments (i.e., when mothers adopted strategies that helped them deal with stress, it helped them find time to cook or do the shopping in a less stressful environment). Many mothers believed that the knowledge and skills gained from the program about health, nutrition, and physical activity helped them enhance their children’s choices and the whole family’s choices. This experience helped improve parents’ confidence in their ability

to implement healthy changes and deal with barriers, which highlighted the vital influence this program had on enhancing parental confidence, and gaining knowledge and skills. For example, one of the mothers talked about how the knowledge and skills she gained from the program helped her whole family in terms of making healthy choices:

“So just from the little changes in my life, just from the changes that we made it is definitely positive all the way around ... Just from the changes that we've made in our family, it is affecting every part of our family dynamic. The grumpiness is gone; the agitation is gone. Neither one of us gets as frustrated as fast or angry as fast. Stress is easier to manage. When all of those things work together, it is that part that becomes easier when you're doing the shopping and the cooking, and you know let us go for a walk.” (P1)

One of the participants talked about the importance of learning about nutrition, especially when enforcing new changes in their family's eating patterns. One parent of a 12-year-old appreciated the opportunities to learn about food, nutrition, food portions, and meal planning, from trained specialists and emphasized the importance of learning the benefits of eating healthy, For example, learning how to make a healthy meal, how to read food labels and Canada's Food Guide, and how to translate this knowledge into daily practice.:

“The knowledge that we gained, oh my goodness. Just the understanding of how the Food Guide works, that was a big deal. How important this stuff you are eating, and understanding how much you should be eating and what in a day, and how much you should be getting of fruit and vegetables because that was a big

deal. It is important but you do not realize it. Having the right information coming from the right people, that was a big eye opener.” (P1)

“The meal planning is a big thing that's completely changed your life. Because before it was "Ok you walk in the door...Oh, look there's a frozen pizza” We don't do this anymore, we don't buy it. If it is not there, you can't eat it.” (P1)

Another mom shared her thoughts about the education component of the program. She explained that being able to find answers to her questions was directly related to living a healthier life and talked about the overall benefits of living healthy.

“The education part of this program is so good because we get all the positive messages. We know eating healthy that we all need to eat healthy, so we think because of all the messages it is just about eating healthy but it is not. There is always something like why do you feel you need that in the moment. Why do you feel like you have to eat when you get home even if you are not hungry?” (P3)

Those mothers were provided with knowledge about healthy lifestyle as well as skills on how to apply some of the knowledge in their own lives. For example, two participants talked about learning how to plan a healthy meal to manage the child’s weight. Understanding Canada’s Food Guide helped one of the mothers provide the amount/type of food that children need. Two participants appreciated the program’s hands-on activities, such as learning how to plan and cook healthy meals, understand portion size, and read food labels. Those mothers enjoyed the learning part in the program because it was practical and catered to their interests and needs. The data showed that the knowledge gained from the program resulted in empowering parents to maintain

a positive role in creating a healthy and supportive environment for the children. As highlighted in other studies, “when people engage in tasks for autonomous reasons—because they enjoy it, find it interesting, or view it as important and valuable—they engage more meaningfully, regulate their behaviour, achieve better results, and manifest high well-being” (Katz, Madjar, & Harari, 2015, p.3). In this study, two parents were confident about their ability to make healthy changes at home. Parents’ confidence was boosted, and they felt more competent in their knowledge of how to create a healthy environment. For example, one participant talked about the benefits of being able to read food labels and learning how to plan a healthy meal, which resulted in adopting healthier behaviors, “*The meal planning is a big thing that's completely changed your life*”.

Two mothers talked about the value of learning about dividing responsibility and ownership for living a healthier life. Two of the mothers explained that giving children ownership over their choices (e.g., allowing children to serve food for themselves) resulted in helping them make better decisions for themselves and how using this strategy positively affected their child’s choices. For example, one participant described how she used to serve the child food, as she believed that it is a mother’s responsibility; however, in the program she learned that children should take responsibility for their choices such as serving and deciding on appropriate food. This participant explained how difficult it had been to shift the responsibility, but noticed the positive effect it had on her child’s behaviors related to food choices.

Like one of the things we learned in the first class was not to serve the kids, have the kids serve themselves. Because it's just kind of like serving everyone but this way they get to choose what they want to eat and things that was that one kind of

the big thing, It was harder for me because it was just such a bad habit of just serving the kids (P3)

“I think one of the biggest things that have changed is that they're taking more ownership over the decisions they're making. They're already starting to see the benefits and they're already starting to make those better choices for themselves not because I told them to” (P3)

Another mother of a 12-year-old daughter she explained her reluctance to push her daughter to make changes, but rather felt allowing her daughter to have ownership was a more sustainable approach that left her reflecting upon the consequences and the benefits of her choices. The mother noted that her daughter started to think about her choices, and “*making those right choices:*”

“If you want to have candy, have candy. You are old enough to understand what you're doing to yourself. I will show you the benefits and the cons of not doing it; that's all we can do. For her, she gets discouraged easier but she's back on track. She's harder on herself for getting off track because she can see it. The pants, the sweater, you can see it in her face.” (P1)

“We eat fruit and vegetables and we avoid the starch. We avoid the processed food because the stuff that you are putting in your body. Just by doing that I have dropped 40 pounds since July, my husband has dropped 60, and my oldest daughter dropped 25, gone. You know that's not something that I push on her; I

let her decide. Seeing her at 13 now, making those right choices. I thank the program for it because they taught you.” (P1)

In this study, two different approaches were explained about supporting their children in ‘taking responsibility’ – first, to educate their children about the benefits of choosing healthy lifestyle and then to provide the child with opportunity to make their own choices (i.e., providing the child with healthy meals and allowing the child to decide how much to eat). This later strategy encouraged the child to make better choices and think about the consequences of her actions, as explained by one mother, “Now he’s starting to question”. This style is similar to the concept of division of responsibility in feeding whereby a parent provides structure and food and the child decides how much to eat (Satter, 2004). One participant discussed how much the structure and freedom to decide helped her child be an active agent in her own life, which resulted in developing children’s own feelings of ownership over their lifestyle choices as their mother stated *“They're already starting to see the benefits and they're already starting to make those better choices for themselves not because I told them to.”*

Providing children with a positive, supportive environment (e.g., by providing advice and respecting and supporting the child’s choices) helped two participants enhance their relationships with their children and teach them how to be responsible about their own choices. One mother of a 12 year old discussed how the program helped her communicate more effectively with all her children. She enjoyed interacting with, talking to, and teaching children about making better choices without forcing the child to adopt any behaviours.

“The talking though, talking to her really helped, really opened her up a lot. It is not necessarily about the program but it taught me how to talk to her, and that is a

big deal; if you have a teenage daughter you will understand. It builds a big bridge and it helps. For her to know that I am on her side and I am not doing this to shame her, I am not doing this for anything but to give her better future. Little things like that that I have put in my daily life.” (P1)

Similarly, another participant valued the time she spent with her son discussing new knowledge learned in the program. She learned how to provide structures to help the child, and then supported the child in making their own choices, which resulted in them being more critical:

“We just talk about it and we talk about it as a family and things I would say actually being like, ‘oh yeah, I remember what they told you about you. Oh yeah’ and then he just kind of put in his life. We talked about past things that they did or that he has learned or that I have learned and we have kind of push forward from there... We continue to talk about that as a family but I think one of the biggest things that has changed is that they're taking more ownership over their house and the decisions they're making and I don't have to be the mom in that anymore.” (P3)

Two mothers' also expressed greater connection with their children, which they attributed to the shared experiences and more time spent with them in the program. According to Slaughter and Bryant (2004) when parents give the child ownership over their choices without controlling them, parents support their children in feeling more connected to the parent. For example, as one of the mothers said learning in the program how to effectively talk to her daughter resulted in having a positive relationship with her daughter” *It builds a big bridge and it helps”*. She explained further that talking with her daughter helped her feel understood, respected, and loved

as she stated, " *For her to know that I am on her side and I am not doing this to shame her, I am not doing this for anything but to give her better future*". Hence, this helped build a greater connection between parent and child since the child felt accepted, understood, and supported. In particular, two mothers expressed this improvement in terms of being able to cope much better with their child's behaviour. Another two participants talked about the benefits of being able to discuss more challenging aspects of the process with their children, such as the consequences of poor choices and encouraging decision-making without pushing the child to make a certain action. Participants also talked about allowing their children choice, giving clear structure and supervision (autonomy needs); providing the child with an opportunity to develop ownership over his/her choices and encouraging children to be healthy (competence needs); and, respecting, understanding, and caring for their children (relatedness needs).

In addition, two parents learned to avoid focusing on a child's weight, and instead replacing unhealthy diet and encouraging healthy lifestyle behaviors such as encouraging the child to eat a balanced diet and to exercise. The two mothers focused on enhancing body acceptance by focusing on making healthy lifestyle changes, rather than on weight loss. The program approach adopted the "Healthy at Every Size" approach, which, "encourages the adoption of good health habits with the goal of health and general well-being, without focusing on weight reduction," (Zibrik, 2009, p.36). Yet, two participants in this study accepted that healthy children come in a range of sizes. For example, one of the two mother explained that the focus on the child's overall health meant less attention to appearance; she believed that an overweight child could be healthy as well:

“I don't want her to think that weight isn't. Weight is an issue if you are unhealthy and you can be skinny and not healthy just like you can be overweight. It doesn't matter what your size is as long as you are healthy.” (P1)

The other mother explained that she did not consider being overweight as a health problem if the child is making better or healthy choices. She believed that healthy children can have different sizes as follow;

“It's ok to be overweight as long as you're healthy. That's what I think and that's what we teach you, which is ok because everybody's different.” (P4)

Two mothers believed that carrying extra pounds was not a health issue, if attempts were made to live healthier lives. These participants stated that weight is not a predictor of health; hence, they supported body acceptance along with their health-focus and supported their daughters to develop a positive body image. Both mothers encouraged their children to be healthy and comfortable with their bodies and worked hard to provide an environment of acceptance rather than judgmental or shaming environment in hopes of their children developing higher self-esteem. Several studies indicated that overweight/obese children are more likely to experience low self-esteem and societal stigma (Latner & Stunkard, 2003; Schwartz & Puhl, 2003). Adopting the “Healthy at Every Size” approach resulted in significant improvements in eating patterns as well as improved self-esteem. Considering the importance of child body image, a recent study noted that it is useful to provide parents with guidance, knowledge, and skills on how to talk about body image with their child (Hart et al. 2015). Paying more attention to developing children’s positive lifestyle behavior, rather than physical appearance, can help preserve children’s healthy body image.

Chapter Five: Discussion and Implications

To the author's knowledge, this program is one of a limited number of family-based outpatient programs in Canada and, specifically, in Ontario. In fact, in Canada, there are only 23 childhood obesity management programs; these programs are registered with the Canadian Obesity Network Registry and are mostly based in urban centers (Kuhle, Doucette, Piccinini-Vallis, & Kirk, 2015). This qualitative study aimed to explore parents' motivation and experience of a family-based outpatient program in Ontario. The program was well received by parents and families, based on their positive comments following and during the program. This chapter elucidates the findings of this study in the context of the relevant literature, outlines the implications for practice and future research, and outlines the strengths and limitations of the present study.

Parental Motivation and Readiness for Change

Parental motivation is the most important factor in predicting whether families will seek out and adhere to treatment procedures (Nock & Ferriter, 2005), and successfully engage in childhood weight management interventions (Twiddy, Wilson, Bryant, & Rudolf, 2012; Jinks, English, & Coufopoulos, 2013). Health concerns and the need to better manage their child's weights were the primary reasons behind parents' motivations to enrol in the program. Most participating parents expressed concerns about their child's health, which is supported by previous findings (Perez et al., 2016). The strongest motivator for sustaining enrolment in the program was the concern parents had about their child's health. Similarly, Perez et al (2016) found that parental concern about their child's weight and health was the primary reason for

parents' enrollment in a pediatric weight management program. Other research argues that parental recognition of their child's weight issue is considered the first step in making behaviour changes (Spear et al., 2007; Taylor et al., 2015). In particular, Taylor et al (2015) explored factors associated with parental motivation to change body weight in overweight children and found greater motivation with parents who recognized and were concerned about their children's weight, as opposed to parents who did not recognize their child's weight as a concern. Others concur that parents who recognized their children as overweight were more often concerned about the consequences of childhood obesity, indicating their intentions to positively make additional behavioural changes (Sylvetsky-Meni, Gillepsie, Hardy, & Welsh, 2015; Park et al., 2014). In line with these findings, this study found that the majority of participants reported concern about their children's weight that subsequently motivated them to employ strategies to modify their entire family's lifestyle behaviours. This finding parallels Davidson and Vidgen's (2017) study noting that parents who were concerned about their child's weight issues controlled it by engaging in a childhood obesity management program. Moreover, the authors noted, "The level of concern which led to parental engagement appeared to be when parents felt hopeless in what else to do about the child's weight issue" (p.8). Similarly, this study's findings showed that parents who had a concern about their child's weight and felt unable to manage were motivated to take an action to control the issue by enrolling in the program.

Similarly, other studies found that concerns about children's weight played an important role in parents' decision to enroll into a pediatric weight management program (Eckstein et al., 2006; Pescud, Pettigrew, McGuigan, & Newton, 2010; Grow et al., 2013) and in parents' ability to direct changes in children's behaviours (e.g., improve child diet and increase physical activity)

(Moore,Harris, & Bradlyn, 2012; Taylor et al., 2015). In a more recent study, Davidson and Vidgen (2017) showed parents feeling hopeless about their child's weight led to greater parental engagement. Similarly, in this study when participants cited child health concerns as motivating factors, they discussed their readiness for making changes to their child's dietary and exercise behaviours. As observed in other studies, parents' tend to place a high value on improving their children's well-being and self-esteem (Stewart,Chapple, Hughes, Poustie, & Reilly,2008; Twiddy et al. 2012) and this mounting evidence demonstrates that the level of parental concern is a key determinant of the readiness parents have to affect changes to support their children.

The Experience of Social Interaction and Support

Feelings of being understood, accepted, and supported motivated parents in this study to continue their attendance in the program. The interaction with professionals and other participating families enhanced parents' confidence in their abilities to achieve their goals (competence satisfaction), encouraging a child to make her/his own decisions without forcing them to obey specific guidance (autonomy satisfaction), and respected parents and supported them in their decisions (relatedness satisfaction). These needs were met through positive relationships with the team and other families in the program. In particular, parents in this study described meetings with the program team and group meetings with other families as opportunities to share and discuss similar problems in a non-judgmental setting. They discussed the positive experiences these interactions had on their overall experience in the program. This finding is particularly important since previous studies found that parent's dropped out of a family-based intervention program because they felt judged or blamed about their child's weight by healthcare professionals (Twiddy et al., 2012; Edmunds, 2005; Lucas et al., 2014). Kelleher et

al (2017) investigated factors influencing parental attendance at community-based lifestyle programs and found, “the way in which health practitioners address the topic of weight with families is of critical importance as it forms the foundation of interventions to address the issue of childhood overweight and obesity” (p.192). Nowicka and Flodmar (2011) also argue that it would be easier for parents to initiate treatment and provide help to the children if they did not feel judged or blamed by the program team. This was the case in this study; participants explained the importance of discussing their child’s health in a non-judging environment because they had the opportunity to ask questions freely, which resulted in helping them learn and apply new strategies when enforcing new changes at home.

This study’s participants cited the program team as the main facilitators for helping them through their experiences in the program and highlighted the benefits of a safe space to openly discuss issues related to their child’s weight. In line with this finding, Hall, Roter, Blanch, & Frankel (2009) found that health professionals who are perceived as being warm and understanding are likely to develop higher degrees of rapport with patients, and Leach’s (2005) findings were in agreement, noting that understanding health professionals helps facilitate communication and increase the ease with which families share information. Similar to these study findings, recent research highlighted the importance of family-health professional relations in pediatric weight management and indicated that positive health professional attitude had a profound impact on the relationships created between families and health professionals (Farnesi Ball, & Newton, 2012). For example, participants in this study talked about how the team provided them with opportunities to engage in different physical activities by giving mothers a variety of resources to promote physical activity and active living within the family, and supplied

them with nutritional guidance (such as meal planning and information about food and nutrition). This is similar to the role of a health coach in helping families overcome social and financial barriers to facilitate pediatric weight management by providing (a) customized support and encouragement; (b) nutritional guidance (including meal planning, assistance obtaining healthy food, and education and counselling); and, (c) linkage to resources (including social services and physical activity support (Rice Jumamil, Jabour, & Cheng, 2016).

Interaction with other families resulted in similar experiences to generate a socially supportive, non-judgmental context. This study's participants noted group sessions were opportunities to share their own successes and struggles openly in a learning environment that provided valuable support and helped generate new knowledge and develop new skills. All participants agreed to the usefulness of group meetings with other families in the program and considered them an invaluable resource of practical and emotional support. As an example, meetings with other families helped all participants learn new strategies, find proven solutions that other families tried when dealing with a similar situation (e.g., child's behaviours), and share frustrations and successes about enforcing new changes at home. This result supports findings by Newson Povey, Casson, & Grogan (2013) that found parents felt satisfied talking with other parents who were trying to make better changes for their children. Similarly, Lucas et al (2014) and others found that parents valued the social acceptance of a group, which often resulted in reduced feelings of isolation (Teevale, Taufa, & Percival, 2015). In particular, Lucas et al.'s (2014) findings showed that the acceptability, affordability, implementation, and impact of a treatment program for overweight and obese children was due in part to parents' enjoyment of the social experiences and reduced feelings of isolation. Research by Teevale et al (2015)

explored factors influencing participation and attrition in a family-led weight-management program and found parents view group meetings with other families as opportunities to share concerns, frustrations, and experiences, acting as a social support with the exchange of personal struggles and triumphs.

Healthy Lifestyle Challenges

Providing unhealthy meals was perceived to be mainly due to lack of partner support and lack of time. In this study, all mothers recognized the importance of promoting a healthy lifestyle for their children, but they faced several day-to-day challenges in being able to consistently do so for their children. Interestingly, mothers did not cite any challenges related to the aspects of the program, yet all discussed several challenges and struggles when enforcing new eating patterns and instituting regular exercise behaviours at home, which often led to negatively affects the families' progress. Time scarcity was cited as the chief barrier to consistently providing healthier food choices and was the prime factor in compromising parents' ability to adequately support children. In support of this notion, a similar result was reported in qualitative research aimed at understanding how employed mothers constructed time for food provisioning for their families revealing the many demands in day-to-day life (Jabs et al., 2007). Other research studies found lack of time as a common barrier to successful progress in attending and completing programs (Moore & Bailey, 2013; Grow et al., 2013). Similar to this researcher's findings, previous studies reported that employed parents, especially mothers, often experience a general lack of time that influences the food choices they make for their families (Jabs et al., 2007; Pocock, Trivedi, Wills, Bunn, & Magnusson, 2010; Slater, Sevenhuysen, Edginton, & O'neil, 2012; Staiano et al., 2017). Parents in this study struggled between wanting to provide healthier choices and having

limited time to prepare healthy meals for their children. This may be a particularly important finding because despite gaining new knowledge and skills about healthy food, participants still struggled to provide their children with healthy options due to lack of time. In other research, focus group interviews with employed families focused on understanding challenges regarding family meals and reported that parents had a strong desire to prepare healthy food for their children; however, they reported having limited time to do so (Fulkerson et al., 2011). The authors recommended, “an area of concentration for future family-based nutrition interventions should be to help parents explore how they might devote some evenings to meal preparation and social engagement with family while planning other times for quick meals that allow time to complete household tasks” (Fulkerson et al., 2011 p.193). In this study, it appeared that lack of husband support in terms of helping mothers in preparing food resulted in making less healthy food choices. Mothers were not being supported by their partners and did not feel capable of achieving their desired goal, which was maintaining a healthy lifestyle for the children and the whole families. Hindering the satisfaction of the needs of competence and relatedness might affect a person’s motivations to do specific behaviours. As an example, parents in this study claimed that they did not provide healthy meals consistently because of lack of time and unsupportive husbands.

In this study, spousal support was cited as both a facilitator and a barrier. Two participants voiced the challenges of enforcing new healthy habits at home without the support of a partner and discussed feelings of loneliness when enforcing healthier practices on their own at home. Results of a systematic review revealed that having an unsupportive partner undermined the efforts of the involved parent and was also seen as a major barrier to assisting the child to

making lifestyle changes (Pocock et al., 2010). Our results were in agreement with prior qualitative studies exploring families' perceptions of pediatric weight-management interventions (Lyles et al., 2012; Bentley et al., 2012; Moore & Bailey, 2013; Nemet et al., 2005; Holt et al., 2015; Edmunds, Rennie, King, & Mayhew, 2014) whereby parents' efforts were hampered by lack of support from a partner (Cote et al., 2004; Moore & Bailey, 2013). In the current study, the mothers' comments focused on the importance of having the whole family engaged in the pediatric weight management program, which supports previous research (Holt et al., 2015; Staiano et al., 2017; Edmunds et al., 2014).

The Benefit of Knowledge and Skills on Parenting Skills

Recent research recommended, "The programs should include specific sessions that provide parents with strategies (support of parents' need for competence), that allows them to express their feelings and share their own difficulties (support of parents' need for autonomy) and feel part of a group that encounters similar difficulties (support of parents' need for relatedness)" (Katz et al., 2015). Providing participants with knowledge and skills about food, exercise, and parenting skills might improve parents' capacity to make the required changes as participants felt confident about their ability to make healthier options. In my study, participants were asked about the benefits of enrolling in the program and all identified several lifestyle improvements due to the knowledge gained from the program. A qualitative study investigated parents' reasons for engaging or not engaging in childhood obesity programs revealed that parents who finished the program valued advice from specialists in the program that was tailored to the needs of each family and translated to adapt into practices at home (Banks, Cramer, Sharp, Shield, & Turner, 2014). In this study, the need for professional help was identified as a strong

motivator for enrolment and explained why all mothers talked about the benefits of gaining knowledge from the program.. This finding is supported by Hart Herriot, Bishop, & Truby (2003) that revealed parents tended to express a desire and interest to learn more about nutrition and to seek out new methods and techniques to help change unhealthy behaviours into healthy behaviours. In this study, mothers explained they possessed basic nutritional information and understood obesity-related health problems; generally, however, they did not have adequate knowledge and skills about making healthy food choices or were unaware of the healthy food portion sizes. Variyam's (2001) study findings concurred that parents knew basic nutritional information, but also parents' had gaps in specific food related information (i.e., information about healthy portion sizes and the nutritional aspects of foods).

All participants identified several positive changes at home with families since attending the program, which supports the aim of family-based interventions that suggest change by one family member can significantly impact the rest of the family (Broderick, 1993; Bishop, Irby, & Skelton,2015). In my study, most mothers discussed a sense of feeling empowered through gaining knowledge and skills, and felt this new level of competence contributed to an improvement and greater confidence in their parenting skills, which encouraged them to make healthier choices for themselves and their children. Similarly, parents in a qualitative study by Grow et al (2013) found a range of important information about nutrition and exercise provided both parents and children opportunities to enhance their knowledge on lifestyle behaviours and develop new skills. Kwitowski Bean, & Mazzeo (2016) found that targeting the eating behaviour and activity levels of the entire family and teaching parents behavioural skills helped the child and family negotiate these changes more easily. Looking at the benefits mothers cited as a result

of the education component of the program shed light on the need for improving parents' knowledge and behaviours overall.

However, providing people with knowledge is not enough. A number of studies highlighted that giving people information about certain behaviours is insufficient as a driver to make change (Hernandez,Thompson, Cheng, & Serwint, 2012; Prina & Royer, 2014; Kelly& Barker, 2016; Sealy & Farmer, 2011; Daniels & Hassink, 2015). In addition, Sealy & Farmer (2011) pointed out that childhood obesity interventions concentrating solely on knowledge related to the factors and consequences of childhood obesity may have limited impact on participants' behaviours. Another study indicated that tackling the issue of obesity requires lifelong attention to eating and activity habits. The issue in making healthy lifestyle changes is not a lack of knowledge, but rather a difficulty in making and maintaining these initial changes over time (Önnerfält et al., 2012). A person who has self-confidence in her/his ability to cope with or succeed in specific situations is more likely to initiate and maintain healthy lifestyle behaviours; therefore, the development of specific skills would result in empowering individuals to become self-reliant from the skills that they have learned, to cope with challenges, and finally to make better healthy choices (Government of Canada, 2013). In primary care, providing information is not enough, but ensuring that people have the knowledge, opportunity, and the required skills to integrate skills into daily life is crucial (Maio et al., 2007). A recent study explained several factors associated with the challenges of changing health-related behaviour revealed that telling people what is good for their health will not result in making changes in people's behaviour (Kelly & Barker, 2016; Maio et al., 2007). One of the author's explanations is that changes in eating or physical activity habits are practices installed in social life. Clearly, these practices are not one-off events that can be averted by information since practices such as

eating, smoking, and physical activity habits are imbued in individuals' regular daily existences, schedules, and habits and cannot be changed simply by information (Kelly & Barker, 2016). Hernandez and colleagues (2012) suggests that it would be beneficial if childhood obesity programs focused on supporting parents by showing them how to apply particular advice, provide tailored guidance, and identify recommendations in their everyday practice, which would result in enabling parents to implement these changes in their daily lives. Compared with interventions that utilized only education or education alongside behavioural control, interventions targeted parenting skills and health education (e.g., nutrition and physical activity) provided more statistically significant results with larger effect sizes (Berge & Everts, 2011). In fact, this result implied the importance of teaching parents skills as a way to treat childhood obesity (Berge & Everts, 2011). According to Moore, Wilkie, & Desrochers (2016) parents need to have skills and be confident in their ability to manage childhood obesity in order for them to translate intentions into actual behaviour change. Daniels & Hassink (2015) stated that even when families already have sufficient knowledge about healthy behaviours, they might not have the skills that enable them to adopt or apply these skills effectively; therefore, they might require assistance from pediatricians. Pediatricians would provide parents with encouragement, develop motivation, and identify appropriate community resources to successfully implement health-related behaviour changes in a family's life (Daniels & Hassink, 2015). Therefore, when planning interventions, it is important to understand the role professionals in intervention programs play in empowering parents and teaching them effective, specific skills related to behaviour change (Hongu, Kataura, & Block, 2011). However, there are other factors that affect parents' decisions regarding health-related behaviours. Gordon stated, "While knowledge and education are important parts of effective message and program design, other factors that affect

health decisions should also be considered, people's perceptions of risks, perceptions of their ability to adopt recommended behaviours, physical and social environmental factors, and the perceived costs and benefits are four factors that inform personal health decisions" (2002,p.7). Therefore, to translate intention into action, mothers needed both strategies and confidence in their ability to improve their family's lifestyle. In this study, mothers noted several improvements in their abilities, subsequent changes to feeding strategies, positive changes in physical activities (e.g., being more active, involved in different kind of activities), and positive changes in eating habits (e.g., eating more vegetables and fruits, less processed food, and sensible portion sizes,) from the knowledge and skills gained in the program. For example, cooking classes enabled parents to learn how to prepare healthy meals for the whole family, which resulted in them applying these new techniques at home. Being able to read food labels improved parent's choices and resulted in making healthier choices, which would help enrich their appreciation for healthy lifestyles. Similarly, Bishop et al (2015) found that parents felt their involvement in a family-based program was the impetus for significant positive change within their families, such as efforts to become healthier and an improved sense of unity (Bishop et al., 2015). Others research shows that education increases parents' competence to manage children's behaviour, improves parents' confidence in helping children change their habits, and enhances parents' own motivation to continue participation in the intervention (West,Sanders, Cleghorn, & Davies, 2010; Moore et al., 2012). Similar to the finding from this study, parents felt empowered with new knowledge and skills learned, and in line with a recent qualitative study, this study revealed, "The confidence, knowledge, and skills given to participants, together with support from their group, may have provided them with the empowerment and motivation necessary to achieve this" (Edmunds et al., 2014, p.168).

An interesting finding from this study revealed that knowledge gained from the program helped mothers learn how to divide the feeding responsibility between parents and children. Mothers noted that before enrolling in the program they served their children and made decisions on their behalf. However, since attending the program, mothers learned the benefits of giving children ownership over their own choices. For example, in this study mothers learned that their role is providing a healthy environment for the children and teaching and encouraging them to make healthy choices, while children's role is to decide for themselves, which helped shape a new division of responsibility. Satter (2004) defined division of responsibility as parents making healthy foods available, but allowing children to decide how much to eat (2004). For example, in this study, some of the mothers noticed that their child started to think about the consequences of their own choices and make better lifestyle choices for themselves, which resulted in the child developing a greater sense of autonomy and increased competence. Mothers provided the child with a positive, supportive environment, which resulted in the child considering the effect of his own actions (a sense of autonomy) and feeling understood and accepted by his parents (sense of relatedness). These results are consistent with tenets of self-determination theory, which encourage parents to provide the child with a positive, supportive environment as a way to satisfy the child's psychological needs. In addition, the results of this study highlights, as other studies have also done, the benefits of using the division of responsibility in feeding. In fact, several studies linked this strategy to many positive changes such as children consuming fewer unhealthy snacks and eating more fruits and vegetables (Kremers, Brug, Vries, & Engels, 2003; Neumark-Sztainer, Wall, Story, & Perry, 2003; Patrick, Nicklas, Hughes, & Morales, 2005). Another study found that when children serve themselves and select their portion sizes, their understanding of internal hunger and fullness cues are enhanced (Benjamin Neelon

&Briley, 2011). Other research findings indicate that this parenting style is supported by evidence showing that praising children about their positive health choices has led to weight change (Andrews, Silk, & Eneli, 2010).

To conclude, knowledge has a direct impact on people's intentions, skills, and actions (Mitchell, 2011). The World Health Organization (2009), and American Psychological Association Task Force on Evidence-Based Practice with Children and Adolescents (2008) both report that there is a need for program initiatives aimed at enhancing parental knowledge since parents serve as primary agents to guide their children's health choices (Okagaki & Bingham, 2005). Thus, to foster better health outcomes one needs to provide parents the resources required to support them making better nutritional and exercise choices for their children. This further supports the claim that Jones et al (2014) stated that the essential element of any intervention program is to include parenting classes that provide more concise and consistent messaging about nutrition, meal planning, and active play.

Implications of Outcome on Practice

The results of this study reinforce the findings of previous studies. Specifically, the findings provide further support for the role of parents as key drivers of change/support for weight management for children. In addition to efforts to optimize the effectiveness of family-based programs, the following are general implications for practice based on the findings of this study:

- By understanding parents' motivations in family-based childhood obesity programs, one can design a more effective program, which increases parental engagement and leads to higher program retention rates (Kelleher et al., 2017). These results along with the research

presented thus far suggest that parental involvement in childhood obesity management is essential, as parents are the primary agents responsible for promoting healthy lifestyles in their children. Therefore, it would be fruitful to consider parents' motivations as well as perceptions of barriers/facilitators when designing pediatric weight management programs.

- There is a dire need for improving parents' skills. Results related to the need for skills to know how to make healthful meals and meal planning emphasized how healthcare professionals can contribute to the health and well-being of families. Pediatric weight management programs that provide parents with health education, instruction, behaviour change strategies, and skills training on how to improve eating and exercise habits of the whole family might be an avenue for establishing healthy lifestyle habits at home. Providing parents with learning experiences may be valuable to promoting healthier lifestyle behaviours at home.
- Programs could provide recommendations for all family members including both parents, and children as a whole when discussing behaviour. Encouraging the whole family to enroll in the program would help families make healthier changes. Including the whole family may be needed because each member of the family would have the knowledge to make and to support healthier lifestyle changes for themselves and the rest of the family.
- As is evidenced in the literature and supported with findings from this study, family-centered programs for weight management support positive changes for the whole family. It would be beneficial if these kinds of programs were readily available for families, especially those at risk (e.g., Aboriginal or low-income family)(Willows, 2005; Barnes, 2012).
- Similar to other previous findings, limited time available for making healthy food may be one of the barriers to adoption of healthier diets. Professionals who provide family-based

programs could utilize the identified barriers to increase the parents' potential in affecting their children's habits. It is valuable to incorporate strategies related to time management, which could partly help parents to encourage healthy changes into their children's diet and exercise habits. These time management strategies may include things like teaching parents how to quickly prepare healthy meals to allow for healthy eating despite a busy schedule.

Implications of Outcome on Future Research

There are a number of gaps in our knowledge around some area; therefore, further research in this area is warranted. Based on the findings of this study, there are several recommendations for future research of parental influences on family-based intervention.

- Previous studies indicated that parent-only interventions could provide similar results to family-based intervention (targeting both parents and children) in terms of improving the home environment and health behaviours (Golan, 2006; Golan, Kaufman, & Shahar, 2006). Parent-only interventions may be more cost effective and may improve intervention retention (West et al., 2010; Boutelle, Cafri, & Crow, 2011; Golan et al., 2006). With the aforementioned point in mind, it would be beneficial to compare the experience and barriers of parents attending either parent-only interventions or family-based intervention and understand the differences and the effectiveness of both kinds of interventions.
- Parents discussed the benefits of the division of responsibility in feeding. Hence, taking into account the benefits of the division of responsibility in this study and prior studies, there is a need for future research to investigate the effect of providing a positive and supportive climate to the children from parents' perspective in family-based programs.

- The social support from professionals could encourage families' healthy dietary adherence. Future studies could pay more attention to the role of the program team/participant relationship in meeting participants' psychological needs.
- Further qualitative evaluation of parents' motivations and experiences in paediatric weight management programs is needed. Moreover, it may be helpful if future research investigates the experiences of overweight children attending family-based interventions and compares their experiences with those of their parents. This may help to highlight how children view family-based programs compared with their parents and, ultimately, could inform on how these interventions would evolve to better meet participants' expectations.

Limitations and Strengths of This Study

The present research has a range of limitations and strengths. First, while the aim of this study was to capture the motivations of multiple family members, only mothers were recruited. Given that fathers' perceptions were not represented, the potentially valuable perception from other family members was missing. Another aim of this study was to learn the motivations of families from different ethnicities; however, there was no cultural diversity among the participants since most participants were Canadian. Third, this study focused on the motivations of parents attending one family-based weight management program. Therefore, this study only captured parents' motivations and experiences about a specific childhood management program, and it did not capture ideas from parents who dropped out or declined to enroll in this kind of family-based weight management program. Because the study provided an in-depth look at parents' motivation and experiences in just one program, transferability may be limited. It could be valuable to compare parents' perceptions in different programs. Finally, while rigorous

attempts were made to keep analysis as objective as possible, a qualitative design may support the reflection of the researcher's bias; however, it was envisaged that this research would add a valuable contribution to the literature. Nevertheless, similar findings from recent studies support the findings of this study. Moreover, recall bias could be an additional concern, since participants were asked to answer questions about motivations when they enrolled in the program.

Despite these limitations, considering the limited research in this area, this study may serve as a means to learn more about parental experience enrolling in family-based weight management programs. These results add to the understanding of parents' motivations and experiences in weight management programs. Strengths of this study include collecting qualitative data from parents who participated in a family-based program, which provide important perspectives for improving parents' involvement with their children in weight management programs.

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APPENDIX B: INTERVIEW GUIDELINE- SAMPLE QUESTIONS

This study has been reviewed by clinic Ethics and the University of Waterloo Research Ethics Office, and received ethics clearance from both. The researcher will begin the interview explaining the purpose of the study and reviewing the ethical issues pertaining to their participation. The purpose of this interview is to explore with parents their motivation for enrolling in a family based obesity intervention program and to understand their experiences, as well as identify any barriers to maintaining positive health behaviour. The interviewee will be asked to fill and sign the consent form and information letter before the interview. Once consent is received, parent(s) will be recruited to discuss the following:

Parental Motivations: (Probes will be used as needed)

- As a parent, what motivated you to take a part in your child's treatment?
- Can you tell what factors did you consider in choosing a family based intervention program instead of only-child intervention/program?
- Can you please tell me what is your impression about participating in the family based-obesity intervention program?
- Could you explain what specific reasons enable you to stay motivated?
- As a parent, since being involved in the program, in what ways (if at all) do you influence the diet and physical activity habits of your child?

Experiences and Changes (Probes will be used as needed)

- How about meeting with program team and other families in the program?
- Attending the program, can you explain to me how did you apply the information from the clinic program in regards to changing your family's health behaviours?
- Could you please tell me what family lifestyle behaviours have changed from the knowledge gained from your experience in the program? And what knowledge has biggest impact?
- As a family, after enrolling in this program, did you make any changes to your family's food choices/ physical activity routine?
- Can you tell me if you made any changes in your health-related behaviours, how do you motivate your family to have a healthier lifestyle?
- Was it helpful for you to have the whole family involved?

Barriers (Probes will be used as needed)

- As a parent, what factors may be impeding the process of improving your child's health behaviours?
- Can you please tell me what challenges have you encountered when trying to help your child's weight management? What concerns you the most?
- If you made any changes in your health-related behaviours, what barriers do you face in regards to establishing and maintaining healthy behaviours?

Others

- If you want to send a message to parents of child with weight issue?
- So is there any thing you want to add?

Thanking the interviewee for taking a part in the study

APPENDIX C: INFORMATION LETTER FOR INTERVIEW

University of Waterloo

Date:

Dear (Participant's name):

Research Project Title: Parental Experiences of Motivation to Enroll in Healthy Weight
Childhood Obesity Management Program

Researcher: You are asked to participate in a research study conducted by Shuruq Alghamdi (MSc Candidate) from the School of Public Health and Health Systems at the University of Waterloo. This study and the meeting involved will be carried out by Shuruq Alghamdi in partial completion of a Master of Science degree. Phone number. 647-949-4400.E-mail: S7algham@uwaterloo.ca

This study has been reviewed by the Clinic and the University of Waterloo Research Ethics Office, and received ethics clearance from Both the University of Waterloo Research Ethics Office and the Clinic. This letter is an invitation to participate in a study I am conducting for my master's thesis at the University of Waterloo. I would like to provide you with more information about this project and what your involvement would entail if you decide to take part. If you would like to know more detail about any information mentioned here, or information not included here, please feel free to ask. Please take your time to read this carefully and to understand any accompanying information.

Purpose: The purpose of this interview is to explore with parents their motivation for enrolling in a family based obesity intervention program and to understand the strategies they use in learning, interpreting, and applying new health information to guide their children's obesity-related behaviours, as well as identify any barriers to maintaining positive health behaviour. The questions will be largely open-ended.

Procedures: If you volunteer to participate in this study, we will ask you to do the following things. This is an interview study; you will be interviewed personally and asked to participate in one interview that will last approximately 45 minutes to an hour. The interview will be recorded using an audio recorder. You will be asked open-ended questions about your child's health and how that affects your child and the family life. You will also be asked about your experiences in the parenting of your child who is living with obesity and suggestions to improve your child's health and challenges that you face to manage your child's health. You will be asked in the beginning of the interview several questions regarding your background information. There is no right or wrong answer. I am interested to know what you think. Participants will have the option of having their interview recorded.

Potential risks and discomforts: The risks for participation in this study are minimal. Some parents may get upset or embarrassed discussing their child's health situation during the meetings. If this happens to you, please feel free to skip the questions that you do not wish to answer or you have the opportunity

withdraw from the interview completely.

Potential benefits: This research will not benefit you directly. Conducting this research, I hope to learn more about this topic.

Appreciation for participation: You will not receive any money for taking part in the study, but a small gift will be given to you as an incentive for participating. After the end of the interview, you will receive a token of appreciation of \$20 for participating in this study.

Confidentiality: To ensure confidentiality, no identifying personal information needed for this study will be available to anyone except the researcher who is identified at the beginning of this form. Moreover, any personal identifying information will be altered in the interview transcripts to ensure confidentiality. Written records will be kept in a secured and locked cabinet. The recordings of the interviews will be downloaded, saved to encrypted files and deleted from the voice recorders. Written transcripts will also be placed in an encrypted file. At no time will the identities of participants be available to anyone. Any reports written about this project will not mention your name or provide any description of you that would identify you. Interview data will be kept for 10 years after the publication of this research and then it will be destroyed.

Feedback: If you have any questions regarding this study, or would like additional information to assist you in reaching a decision about participation, please contact me by e-mail or phone. E-mail: (S7algham@uwaterloo.ca). Phone number: 647-949-4400

Participation and withdrawal: The final decision about participation is yours. If you are willing to take a part in this study, you may withdraw at any time without consequences of any kind. You can also refuse to answer any questions you do not wish to answer and still remain in the study.

Rights of research participations: I would like to assure you that this study has been reviewed and received ethics clearance through a University of Waterloo Research Ethics Office. If you have any comments or concerns resulting from your participation in this study, please contact: Dr. Maureen Nummelin, the Director, Office of Research Ethics, at 1-519-888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca.

I look forward to speaking with you and thank you in advance for your assistance in this study.

Yours sincerely,

APPENDIX D: CONSENT FORM

I have read the information presented in the information letter about a study being conducted by Shuruq Alghamdi in partial completion of a Master of Science degree at University of Waterloo. I have had the opportunity to ask any questions related to this study, to receive satisfactory answers to my questions, and any additional details I wanted.

I am aware that I have the option of allowing my interview to be audio recorded to ensure an accurate recording of my responses. I am also aware that excerpts from the interview may be included in the study paper, with the understanding that the quotations will be anonymous. I was informed that I might withdraw my consent at any time by advising the researcher.

This study has been reviewed by the Clinic and the University of Waterloo Research Ethics Office, and received ethics clearance from the University of Waterloo Research Ethics Office and the Clinic.

I was informed that if I have any comments or concerns resulting from my participation in this study, I might contact this Office at 519-888-4567 ext. 36005.

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

YES NO

I agree to have my interview audio recorded.

YES NO

I agree to the use of anonymous quotations in written documents and presentations for this study.

YES NO

I agree to the use of anonymous quotations in future research projects/publications developed by the researcher

YES NO

I give permission to the researcher “Shuruq Alghamdi” to retain the transcript from my interview for up to 10 years and to use it for research purposes as long as it has no identifiable information that ties it to me

YES NO

Participant Name: _____ (Please print)

Participant Signature: _____

Witness Name: _____ (Please print)

Witness Signature: _____

Date: _____

APPENDIX E: ETHICAL CLEARANCE

UNIVERSITY OF WATERLOO

<https://oreprod.private.uwaterloo.ca/ethics/form101/ad/reports/certific...>

UNIVERSITY OF WATERLOO

OFFICE OF RESEARCH ETHICS

Notification of Ethics Clearance of Application to Conduct Research with Human Participants

Faculty Supervisor: Nancy Fenton **Department:** Health Studies & Gerontology
Student Investigator: Shuruq Alghamdi **Department:** Health Studies & Gerontology
Collaborator: Phil Bigelow **Department:** School of Public Health and Health Systems

ORE File #: 21666

Project Title: Parental Experiences of Motivation to Enroll in Healthy Weight Childhood Obesity Management Program_copy

Human Research Ethics Committee (HREC) Clinical Research Ethics Committee (CREC) is pleased to inform you the above named study has been reviewed and given ethics clearance.

Approval to start this research is effective on the ethics clearance date which is: 9/15/16 (m/d/y)

University of Waterloo Research Ethics Committees are composed in accordance with, and carry out their functions and operate in a manner consistent with, the institution's guidelines for research with human participants, the Tri-Council Policy Statement for the Ethical Conduct for Research Involving Humans (TCPS, 2nd edition), International Conference on Harmonization: Good Clinical Practice (ICH-GCP), the Ontario Personal Health Information Protection Act (PHIPA), the applicable laws and regulations of the province of Ontario. Both Committees are registered with the U.S. Department of Health and Human Services under the Federal Wide Assurance, FWA00021410, and IRB registration number IRB00002419 (HREC) and IRB00007409 (CREC).

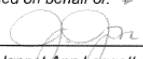
The above named study is to be conducted in accordance with the submitted application (Form 101/101A) and the most recent approved versions of all supporting materials.

Ethics clearance for this study is valid until: 9/15/17 (m/d/y). Multi-year research must be renewed at least once every 12 months unless a more frequent review has otherwise been specified by the Research Ethics Committee (Form 105). Studies will only be renewed if the renewal report is received and approved before the expiry date. Failure to submit renewal reports by the expiry date will result in the investigators being notified ethics clearance has been suspended and Research Finance being notified the ethics clearance is no longer valid.

Level of review:

Delegated review
 Full committee review meeting date: _____ (m/d/y)

Signed on behalf of: HREC Chair CREC Chair

- 
 Jannet Ann Leggett, JD, Chief Ethics Officer, jannet.a.leggett@uwaterloo.ca, ext. 36005
 Julie Joza, MPH, Senior Manager, jajoza@uwaterloo.ca, ext. 38535
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This is an official document. Retain for your files.

APPENDIX F: ETHICAL CLEARANCE

To: Dr. Nancy Fenton (Student: Shuruq Jaber Alghamdi)

Study Title: **Parental Experiences of Motivation to Enroll in Healthy Weight Childhood Obesity Management Programs**

Sponsor/Funding Agency: Not Funded

REB Review Type: Delegated

Date of Meeting/Review: October 20 2016

Expiry Date: October 20 2017

Notification of REB FINAL Approval

Documents Approved:

1. REB Application (received July 6, 2016)
2. Research Flyer
3. Information Letter for Interview
4. Consent Form
5. Phone Script
6. Interview Guide
7. Letter of Appreciation
8. Proposal (March 2016)
9. Demographic Questionnaire
10. Record of Research Form

Documents Acknowledged:

1. TCPS 2 certificate
2. University of Waterloo Approval Letter

Project Number: 16-059

This Project Number has been assigned to your project. Please use this number on all future correspondence.

The Research Ethics Board _____ has reviewed the above research protocol and considers it to be ethically acceptable.

As Principal Investigator, you are responsible for the ethical conduct of this study as outlined under the *Tri-Council Policy Statement: Ethical Conduct of Research Involving Humans (2nd Edition)*.

Please take note of the following list of ethics requirements you must fulfill over the course of your study:

- You are responsible for renewing the approval for this study prior to the expiry date by submitting an [redacted] Form or if the study is complete, a Final Report form.
Please add **September 08 2017** to your calendar as a reminder to complete and submit the appropriate form six weeks prior to the expiry date. There is no grace period.
PLEASE NOTE: Research participants cannot be enrolled into a study if ethics approval has lapsed.
- You are responsible for reporting any changes to your study (e.g. consent, protocol, study procedures, etc.) by submitting an Amendment Request form prior to implementing the change.
- You are responsible for notifying the REB of all internal serious adverse events, significant deviations, and participant complaints by submitting an Unanticipated Problem form as soon as you become aware of the event.
- In the event of a privacy breach, you are responsible for reporting the breach to the HSN Privacy Officer.

The forms and guidelines can be found on the [redacted] or by emailing the Research Ethics Office at [redacted] should you not have access to same.

The Board wishes you good luck with your study.

Sincerely,

Chair,

Research Ethics Board

APPENDIX G: ETHICAL CLEARANCE

February 28, 2017

RE: Research Project 16-059 – Parental Experiences of Motivation to Enroll in Healthy Weight Childhood Obesity Management Programs

Dear Dr. Nancy Fenton,

_____ Research Ethics Board _____ has determined that the Master's candidate can use the four cases collected prior to the revocation of the REB certificate.

Respectfully,

By signing below, I hereby confirm that no part of the Master's thesis will be submitted for publication and all hard or electronic copies of the thesis will not be kept as part of the Master's and PhD thesis documents archives.

Supervisor: Dr. Nancy Fenton

Student: Shuruq Jaber Alghamdi