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Exploring men's social support in the Hockey Fans in Training weight loss and healthy lifestyle program

Ryan S. Scott, *The University of Western Ontario*

Supervisor: Shannon L. Sibbald, *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Health and Rehabilitation Sciences

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Abstract

Hockey Fans in Training (Hockey FIT) is a gender-sensitized weight loss and healthy lifestyle program for overweight and obese male hockey fans, consisting of a 12-week active phase followed by a 40-week maintenance phase. Following program completion, interviews and focus groups were conducted to explore the social support given and received by the men involved in Hockey FIT. A social cognitive model was used to illustrate how social support arising from group cohesiveness, friendly competition, family, and peers impacted self-esteem (characterized by self-efficacy, gaining a sense of belonging, and gaining a sense of accomplishment), which in turn produced positive health outcomes (heightened awareness, physical improvements, and healthy eating habits). This program is a successful, gender-sensitized, hockey-based weight loss and healthy lifestyle program, the first of its kind in Canada. It provides insight into the multiple sources of social support available to men in sports-based intervention programs.

Keywords

Gender-sensitized, hockey, weight loss, healthy lifestyle program, overweight, obese, social support, self-esteem, self-efficacy, health outcomes

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Chapter 1

1 INTRODUCTION

Chapter 1 introduces relevant topics such as men's health, obesity, sports-based intervention programs, and social support. These topics are related to the research question of this study, which is, "what is the impact of social support on men in the Hockey Fans in Training program?" The main objectives are to explore the social support that men in the program gave and received, and to explore how social support impacts the men's health outcomes. Chapter 2 is a literature review that provides context to these topics. A summary of relevant literature is provided to demonstrate how this research fits within a larger field of study. The methods are presented in Chapter 3. The study design and procedure are outlined in detail, and the methodology is described and explained. Chapter 4 provides the study's findings in the Results chapter. Results are organized into themes and presented to explore the social support given and received by men, and the positive impact it had on health outcomes. Results are discussed in Chapter 5. Here the results are compared to relevant literature in an attempt to justify and explain the findings. The quality of the study is rationalized in this chapter, and the study's limitations and future directions of research are discussed.

In recent years, obesity has become a major issue around the world (World Health Organization, 2015). In 2014 in Canada, 62% of men and 46% of women self-reported that they were overweight or obese (Statistics Canada, 2015). Obesity levels in Canadian men have risen from 16% in 2003 to 22% in 2014 (Statistics Canada, 2015). Obesity has been shown to increase risk for type 2 diabetes, cardiovascular disease, high blood pressure, osteoarthritis, some cancers, and gallbladder disease (Tjepkema, 2006). According to the Canadian Men's Health Foundation (2015), the cost of poor men's physical health due to four factors – excess weight, physical inactivity, smoking, and over-consumption of alcohol – is \$36.9 billion per year. Up to 70% of these costs could be prevented if we improve men's health based on these four aforementioned factors (Canadian Men's Health Foundation, 2015).

Despite the fact that obesity levels in men have risen in recent years, men have been less likely than women to enter into weight management programs (Bye, Avery, & Lavin, 2005). This could be due to a variety of factors. Men may be less aware of their overweight status and attribute increased body size to muscularity and masculinity (Sabinsky, Toft, Raben, & Holm, 2007). Men may also have misconceptions about dietary behaviours required to lose weight, and may perceive dieting and weight loss programs as “feminine” (Gough, 2007).

Researchers have attempted to find effective ways to engage overweight and obese men in weight management intervention programs (e.g., Hunt et al., 2014). Men prefer programs that incorporate physical activity as well as diet, and often express a desire to be in the company of other men who are in a similar situation (Sabinsky et al., 2007). One area that has shown success is engaging men in weight loss programs is through sports. Sports can play a large role in male culture, and researchers have embedded that into weight management programs. There is a strong sense of social and psychological connection, not only to the team, but also to other fans in sports (Hirt & Clarkson, 2010). One such example is a study called Football Fans in Training (FFIT), which was delivered in the United Kingdom (Hunt et al., 2014). FFIT was a gender-sensitized, healthy living and weight loss program for overweight and obese men delivered by Scottish Premier League football clubs. Hunt and colleagues (2014) conducted a two-armed, pragmatic randomized controlled trial in overweight and obese males aged 35 to 65 years, across 13 Scottish professional football clubs. Participants were allocated to either the intervention group, which started the program right away, or a waitlist comparator group, which started the program after 12 months. The intervention group participated in weekly sessions for 12 weeks that included physical activity, and classroom learning consisting of setting SMART (Specific Measurable Attainable Realistic Timely) goals and learning to eat healthier and create healthier habits. These sessions were run by community coaches who had received training for the program. After 12 months, the mean difference in weight loss was 4.94 kg, or 4.36%, in favour of the intervention group (Hunt et al., 2014). Hunt et al. (2014) concluded the program could help a large portion of men lose a clinically significant amount of weight. Furthermore, the support that these men received from one another, and from the

affiliated clubs, gave them the confidence to make and sustain healthy lifestyle changes (Bunn et al., 2016).

Lubans (2014) wrote about the success of FFIT and suggested that this approach be taken in other sports. Given that hockey has been linked to our national identity in Canada since Confederation (Robidoux, 2002), it was only appropriate to adapt FFIT to develop Hockey Fans In Training (Hockey FIT). In collaboration with researchers from FFIT and HealthSteps, an evidence-based lifestyle prescription program (Gill et al., 2017), Hockey FIT was created. Hockey FIT is a gender-sensitized, healthy lifestyle and weight loss program for overweight and obese men. Forty men were recruited to participate at each of the two sites. Twenty men at each site were randomly allocated to either the intervention group, which started the program right away, while the other 20 men were allocated to a waitlist comparator group, which started the program after 12 months. The intervention group participated in weekly sessions for 12 weeks that included physical activity, and classroom learning consisting of setting SMART goals and learning to eat healthier and create healthier habits. These sessions took place in the local junior hockey arena and local affiliated fitness facilities, and were facilitated by community coaches who had received training for the program. A 40-week maintenance phase followed the 12-week active phase, where participants independently continued the healthy habits they had learned during the active phase. Although they no longer met as a group every week, the men were given access to Tyze, a social network where they could interact with one another to share healthy food recipes or organize group activities such as golf games. They also received six emails from their coaches during this time to encourage them to maintain their healthy habits. A booster session was held at nine months as a reunion for the group as well. Qualitative data was collected from participants in the form of focus groups (after 12 weeks) and interviews (after 12 months), and from Hockey FIT coaches in the form of interviews (after 12 weeks).

According to Bandura's (1997) social cognitive theory, self-efficacy is essential in promoting and sustaining behaviour change and positive outcomes. Laakey and Cohen (2000) applied the social cognitive theory to social support to develop the theory that perceived support can lead to an increase in self-esteem, which in turn leads to positive

outcomes. By using this theory, my sub-study of the main Hockey FIT project aims to answer the following research question: What is the impact of social support on men in the Hockey Fans in Training program? This study explores the social support given and received by men in the Hockey FIT program and its positive impact on health outcomes. While some studies have observed single sources of social support within weight loss programs, this study gives an overarching view of multiple sources of social support from within the program, as well as support from outside the program. It provides a greater look into the impact that social support has in male only, sports-based intervention programs. This study employs a constructivist approach, as constructs perceived and explained by the participants and coaches during focus groups and interviews will be interpreted by the researcher (Lincoln & Guba, 2000).

Chapter 2

2 LITERATURE REVIEW

This purpose of this literature review is to gain a better understanding on the literature surrounding men's health and men's weight loss programs, social support, and the social cognitive theory. Information presented in this chapter is intended to assist in exploring the impact that social support has on men in a gender-sensitized, sports-based weight loss and healthy lifestyle program. This literature review will first explore obesity and men's health in Canada. The current state of obesity in Canada will be discussed, as well as some organizations in Canada who are working to improve men's health. Sports-based intervention programs will then be investigated, with emphasis on Hockey FIT's predecessor program, FFIT. I will then explore social support and the different constructs that constitute social support. Finally, social cognitive theory (SCT) will be discussed and two conceptual models will be presented.

2.1 Obesity and Men's Health

Obesity is a major health issue in Canada. According to the Canadian Men's Health Foundation (2015), over 65% of men aged 30-64 are overweight or obese, nearly 50% are inactive, and over 40% binge drink. These poor lifestyle choices lead to many health complications – for example, men are 70% more likely to die from heart disease and live an average of nine years of their lives in extremely poor health (Canadian Men's Health Foundation, 2015). Having a BMI of over 30 kg/m² and a waist circumference of over 102 cm can lead to an increased chance of physical, psychological, or sexual impairment (Archibald et al., 2015). Organizations such as the Canadian Men's Health Foundation and Movember Foundation have been created in recent years to bring awareness to men's health issues and to encourage men to improve their lifestyles. The Canadian Men's Health Foundation is a not for profit organization that was established in 2014. Their mission is to inspire Canadian men to live healthier lives (Canadian Men's Health Foundation, 2015). They have since launched a national campaign called *Don't Change Much*, with the goal of building awareness around men's health, and making small behaviour changes that lead to healthier habits (Canadian Men's Health Foundation,

2015). The Movember Foundation was established in 2003 with the goal of changing the face of men's health. They began a campaign to encourage men to grow moustaches during the month of November every year to raise awareness and raise money for men's health. This non-government organization has since gained increasing popularity, and has funded over 1200 men's health projects around the world, including this Hockey FIT project (Movember Foundation, 2017).

Despite these statistics, men are under-represented in weight loss programs. A review of weight loss programs found that only 27% of participants in randomized weight loss trials were men (Ross et al., 2008; Pagoto et al., 2012), while men made up only 10% of the population in commercial weight loss programs (Stubbs, Pallister, Whybrow, Avery, & Lavin, 2011). There are a number of reasons why men may feel less inclined to join weight loss programs. Men are often less aware of their overweight status, and attribute a larger body size with muscularity and masculinity (Gray et al., 2013b). They view weight loss programs and facilities as feminized spaces, while they prefer to be in the company of other men that they feel they can identify with (Archibald et al., 2015). With the realization that men are less likely to participate in weight loss programs than women, studies have been performed to explore effective ways to recruit and engage men into these types of programs. One such study was performed by Archibald et al. (2015). They reviewed 22 studies involving men's weight loss programs in order to identify key strengths and weaknesses. Men identified barriers to engagements, such as not being concerned with weight until they were considered obese; lack of support from friends and family when attempting to change their diet; and refusal to make drastic changes to their diet. Men enjoyed having flexibility and control over what they could eat, and enjoyed physical activity aspects of the program. Humour, social support, and group interactions were major factors in keeping men engaged in the program. Furthermore, men enjoyed programs with settings that were convenient, non-threatening, and fit with their masculine identities. Gavarkovs, Burke, and Petrella (2016) also performed a review to identify factors that affect male participation rates in chronic disease prevention and maintenance programs. After reviewing 25 studies, they found similar results to Archibald et al. (2015). Men enjoyed studies with a group component featuring like-minded men, incorporating humour into the program, having both physical and

nutritional components, and having an element of competition. Many of the positive features found in these reviews were present in the successful FFIT study (Wyke et al., 2015) and have been implemented into Hockey FIT (Muisse et al., 2016).

2.2 Engaging Men through Sport: Football Fans in Training

One successful way that researchers have been able to engage men in weight loss programs is through sport. Sport provides a strong element of competition, and there are powerful social and psychological connections that come with being a fan of a sports team (Hirt & Clarkson, 2010). Many professional and major junior sports settings are still largely male-dominated (Hirt & Clarkson, 2010). Successful health promotion initiatives have been run in the United States in baseball stadiums at the professional and collegiate level (Hodges, 2017). In the United Kingdom, weight loss programs have been affiliated with professional soccer or rugby teams (Witty & White, 2011; Pringle et al., 2011; Wyke et al., 2015).

Football Fans in Training was run in collaboration with the Scottish Premier League (SPL) to engage overweight and obese men in weight loss, physical activity, and healthy eating (Gray et al., 2013a). They delivered a two-arm pilot trial at two SPL clubs with 103 men aged 35–65 who had a body mass index of 27 kg/m² or greater. Fifty-one men were randomized to the intervention group and began the pilot program immediately, while 52 men were randomized to the waitlist group and began the program after four months. Objective physical measurements such as weight, waist circumference, and blood pressure were taken at baseline and again at 12 weeks, 6 months, and 12 months. Focus groups were used to collect qualitative data concerning men's experiences of participation in the program (Gray et al., 2013b).

Results of the pilot trial were promising: 80% of men remained in the program at 12 weeks and 6 months, and 76% attended at least 80% of the program sessions. The intervention group lost significantly more weight than the waitlist group after 12 weeks (4.6%), and 45.5% of men in the intervention group reached a clinically-significant 5% weight loss. Qualitative data provided the research team with insight on ways to improve the study, as well as things that men liked and disliked about the program (Gray et al.,

2013b). These results allowed the research team to develop a full-scale FFIT trial. The following year, the research team carried out a two-group, pragmatic, randomized controlled trial of 747 male soccer fans in the SPL. After 12 months, 89% of the intervention group and 95% of the waitlist group completed the program. After 12 months, the mean difference in weight loss between groups was 4.94 kg (95% CI), or 4.36%, in favour of the intervention group (Hunt et al., 2014). They also collected qualitative data, most of which was focused around masculinity and gender roles in the program and at home.

MacLean et al. (2014) used data from observation and focus group discussions during FFIT to explore how men's female relatives affected their eating habits during the program. Men suggested that women were very influential in their lives when it came to their diet. They acknowledged that their wives often did the shopping and cooking in the house, and many men had little input into what they ate during meals at home. They came up with five roles in which they placed their female relatives, as seen in **Table 2.1**. This research provided insight into the roles of masculinity and the relationship between men and their female relatives. MacLean (2014) suggests the need to further unpack and explore how social support from co-participants, families, and other peers can affect eating practices during weight management programs.

Bunn et al. (2016) collected qualitative data from FFIT focus groups to explore masculinities, practice, performance, and effervescence amongst participants in the program. They identified themes that allowed men to have success in the program. Men highlighted the importance of being in a group with other men who were in a similar situation to them. This allowed for a comfortable environment that facilitated open discussion and encouragement from group members. The comfortability within the group allowed the men to openly discuss and renegotiate cultural norms of masculinity and men's health. Men were able to joke and have fun with one another, creating excitement and energy that made them want to return each week to achieve their weight loss goals. Bunn (2016) concludes that weight loss programs are most successful if they bring like-minded people together and support effervescent group experiences. Furthermore, they suggest that the success of FFIT should encourage others to use these strategies in other

sports. This research was a major influence in further exploring the roles of social support during weight loss programs through the Hockey FIT program.

Table 2.1. Five typologies which capture how women were constructed while making dietary changes during FFIT

Role of women	Meaning
Facilitative allies	Helped men make changes in their food and eating practices, which in turn helped them lose weight.
Detached allies	Neither active in helping men make changes, nor preventative in men making changes.
Undermining change	Undermined men's efforts to change their diet and lifestyle.
Resistant to change through wanting to feed	Resistant to men making changes because of deeply engrained cultural values about feeding family members.
Threatened by change	Men's efforts to lose weight appeared to threaten their partners and bring insecurities to the surface.

2.3 Social Support

The early 1980s was a period in which the topic of social support first garnered major interest. A search of the Social Science Citation Index showed that the number of articles with "social support" in the title grew from two per year from the period of 1972 – 1976, to 43 by 1981. By 1986 this number had risen to 83 (House, Umberson, & Landis, 1988). Although social support continues to be widely studied today, there is no universal definition. Schumaker & Brownell (1984) defined social support as "an exchange of resources between two individuals perceived by the provider or the recipient to be intended to enhance the well-being of the recipient". In 1985, Cohen and Syme defined social support as simply "the resources provided by other persons". House et al. (1988) believed that social support was one of many terms, including social network and social

integration, which together make up the construct of social relationships. More recently, Cohen defined social support as a social network's provision of psychological and material resources intended to benefit an individual's ability to cope with stress (Cohen, 2004). He broke down social support into three resources:

- Instrumental support – the provision of material aid, for example, financial assistance or help with daily tasks,
- Informational support – the provision of relevant information intended to help the individual cope with current difficulties, and
- Emotional support – the expression of empathy, caring, reassurance, and trust and providing opportunities for emotional expression and venting (Cohen, 2004).

Alternatively, many researchers include appraisal as a fourth type of social support (House, Umberson, & Landis, 1988; Berkman, Glass, Bissette, & Seeman, 2000; Kurpas et al., 2014). Appraisal support can be defined as the transmission of information in the form of affirmation, feedback and social comparison (Kurpas et al., 2014, p. 942).

Social support in the context of health and disease etiology has been studied thoroughly over the years (Cohen & Wills, 1985; Cohen, 1988; Ucino, Cacioppo, & Kiecolt-Glaser, 1996). In 1985, Cohen & Wills studied two theories of social support: support as a main effect and support as a stress buffer. As a main effect, support is perceived to be beneficial because interacting in social networks provides a person with positive experiences and socially rewarding roles within a community, giving the individual a sense of recognition and self-worth. Support as a stress buffer is when others provide a resource to an individual in order to cope with a stressful circumstance (Cohen & Wills, 1985). Cohen and Wills reviewed studies that measured social support, organizing them by social network structure versus function, and by the degree of specificity versus globality of the scale. Structural measures were defined as those that describe the existence of relationships, while functional measures were those that directly assess the extent to which these relationships may provide particular functions (Cohen & Wills, 1985). After completing their extensive review, they found that there was evidence for both the main effect model and the stress-buffering model. Linkage between social support and well-being best fit the stress buffering model when the social support

measure assessed interpersonal resources that were responsive to the needs elicited by stressful events. Evidence for a main effect model was found when the support measure assessed a person's degree of integration in a large community social network (Cohen & Wills, 1985).

In 1988, Cohen looked at mortality and morbidity as it relates to social support. He concluded that while social support is extremely important for the prevention of disease and the maintenance of health, further research needs to be done to determine *how* social support is linked to physical well-being. He also reported that most studies of social relationships on mortality had a greater impact among men than women (Cohen, 1988). Around the same time, House et al. (1988) also suggested guidelines for future social support research with regards to health. He suggested that the structure and processes of social relationships be better understood, and that social support, social networks, and social integration be viewed as a dependent variable in addition to the more commonly used independent variable. In addition, he proposed that future research distinguish and measure social integration and social network structure separately.

This research led to the work of Lakey and Cohen in 2000. They presented three theoretical perspectives on social support research: the stress and coping perspective, the social constructionist perspective, and the relationship perspective. They stated that when choosing correct techniques to measure social support, researchers should have a basis in a theory about how social relationships influence health and well-being (Lakey & Cohen, 2000). The stress and coping perspective includes supportive actions and appraisal and emphasizes the stress-buffering model from Cohen's earlier work (Cohen & Wills, 1985). The social constructionist perspective includes social cognition and symbolic interactionism and emphasizes the main effect model. The relationship perspective also utilizes the main effect model (Lakey & Cohen, 2000). Cohen extended this work when he looked at three social relationships – social integration, social support, and negative interaction. He summarized his twenty years of social support research when he concluded that creating and strengthening a diverse natural social network, increasing the availability of social support in natural networks, and reducing negative interactions within one's network, has positive effects for long-term health (Cohen, 2004).

Social support has often been explored in relation to weight loss intervention programs. One such study compared autonomy support with direct behavioural support in a weight loss intervention program (Gorin, Koestner, Powers, Wing, & Raynor, 2014). This study found that autonomy support (for example, having a partner who validates your feelings, minimizes control or pressure, provides you with choices and options) led to greater weight loss than directive support (i.e., having a partner who exercises with you, encourages healthy food choices, and rewards or punishes you for your progress). These results are supported by the Self Determination Theory, which states, “an understanding of human motivation requires a consideration of innate psychological needs for competence, autonomy, and relatedness” (Deci & Ryan, 2000).

The benefits of social support in weight loss were also displayed in 1999, when Wing and Jeffery recruited four groups of participants in order to observe the effects of social support in a weight loss intervention program. Members of group 1 were recruited alone, and no effort was made to increase communication during program sessions. Group 2 was recruited alone, but members were placed into teams during sessions. Members of Group 3 were recruited as friend groups of three or four, but groups were not acknowledged during sessions. Group 4 members were also recruited as friend groups of three or four, and they stayed in their teams to complete tasks during sessions. Following program completion, it was found that recruiting participants with a team of three or four friends and treating them with a strong social support intervention decreased the number of dropouts and markedly increased the percentage of participants who maintained their weight loss in full over a 6-month follow-up period when the social support intervention was still in effect (Wing & Jeffery, 1999).

Although these previous studies mentioned have explored social support during weight loss programs, there is little evidence of social support studies during gender-specific, sports-oriented weight loss programs. These studies tend to focus more on objective physical weight loss goals such as weight and waist circumference. The qualitative studies of FFIT have been discussed, and their findings are extended through the work of Hockey FIT. Furthermore, while FFIT focused most of its qualitative work on gender roles and single sources of support (MacLean et al., 2014; Bunn et al., 2016), this study

aims to explore the multitude of sources of support given and received by the men during the Hockey FIT program.

2.4 Social Cognitive Theory

Social cognitive theory (SCT) took form in 1986 when Albert Bandura changed the name of his previously established social learning theory in his book titled *Social Foundations of Thought and Action: A Social Cognitive Theory*. SCT states that behavioural change is enabled by a personal sense of control. Personal factors, behaviour, and environmental influences all play a role in social cognition (**Figure 2.1**). According to Luszczynska & Schwarzer (2005), self-efficacy and outcome expectancies are the two major constructs of SCT. People who believe that they can make changes become more inclined to do so and feel more committed to the decision. People with high self-efficacy who believe they are able to accomplish a task are more likely to lead more active and determined lives. Contrarily, people with low self-efficacy are more likely to feel depressed, anxious, and helpless (Luszczynska & Schwarzer, 2005). Bandura (1997) states four sources that can enhance self-efficacy. The first is through personal accomplishment or mastery. Personal success is attributed internally and can be repeated. The second is through vicarious experience – when someone who a person perceives to be similar to them masters a difficult task, self-efficacy beliefs can be enhanced. The third is verbal appraisal from peers, and the fourth is emotional support from peers. It can be seen from the last two sources the important role that social support plays in increasing self-efficacy.

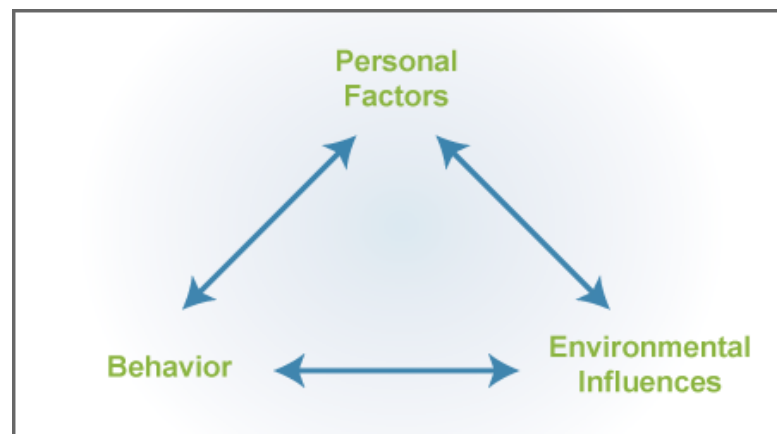


Figure 2.1. A conceptual model of the social cognitive theory (Bandura, 1986).

Outcome expectancies are also an important construct of social cognitive theory. A person's behaviour can influence physical changes, responses from others, or self-perception (Luszczynska & Schwarzer, 2005). Outcome expectancies can be organized into three dimensions: area of consequences, positive or negative consequences, and short-term or long-term consequences (Luszczynska & Schwarzer, 2005). Areas of consequences include physical, social, and self-evaluative outcome changes. Outcome expectancies, along with self-efficacy, are essential in changing behaviours, eliminating bad habits, and maintaining new healthy practices (Luszczynska & Schwarzer, 2005).

Lakey and Cohen (2000) used a social cognitive approach to understand social support. They posit that "once a person develops stable beliefs about the supportiveness of others, day-to-day thoughts about social support are shaded to fit these pre-existing beliefs" (p. 37). People with high levels of support interpret behaviours as more supportive compared to people with low levels of support. Those receiving high levels of support should also have better memory for supportive behaviours, display greater attention to supportive behaviours, and be able to think about support with greater ease and speed (Lakey & Cohen, 2000). They state that there is a strong connection between perceived support and social evaluation, and that influencing cognitive representations of different social relations affects self-evaluation and emotion. Lakey & Cohen (2000) developed a social cognitive model similar to that of Bandura (1986) that incorporated social support. They predict that perceived social support promotes self-esteem, which leads to health outcomes; and that perceived support also leads directly to health outcomes (**Figure 2.2**). This model has been used in research to demonstrate how lack of social support can stimulate negative self-esteem, which can cause emotional distress (Baldwin & Holmes, 1987; Lakey & Cassady, 1990; Sarason, Pierce, & Sarason, 1990).

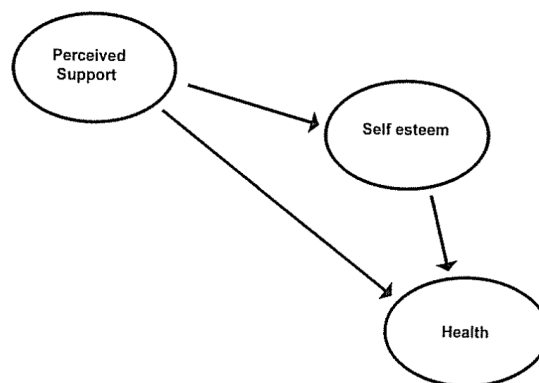


Figure 2.2. The social cognitive model developed by Lakey & Cohen (2000).

There are many studies that apply SCT to investigate physical exercise, and nutrition and weight control. Studies have shown that perceived self-efficacy is an important factor in forming intentions to exercise and maintaining exercise habits long-term (e.g., Shaw, Dzewaltowski, & McElroy, 1992; Rodgers, Hall, Blanchard, McAuley, & Munroe, 2002). Booth et al. (2000) looked at self-reported levels of physical activity and self-efficacy in an older population. They interviewed 449 people aged 60 and older, and classified each person as active or inactive. They then used two logistic regression models with and without self-efficacy to identify predictors of physical activity. They found that high self-efficacy, regular participation of friends and family, and finding safe and accessible settings were significantly associated with being active. Rovniak et al. (2002) studied the relation between social cognitive variables, including self-efficacy and social support, and physical activity in 227 university students. They concluded that self-efficacy had the greatest effect on physical activity, and that social support indirectly predicted physical activity by affecting self-efficacy. Van Duyn et al. (2001) conducted a national survey of 2605 adults across the United States about the stage of change; taste preferences; self-efficacy; and perceived benefits, barriers, and social support related to fruit and vegetable consumption. Among other findings, they concluded that self-efficacy for eating fruits and vegetables was the factor that was most strongly associated with higher consumption and higher likelihood of being in action or maintenance stages of change. Schnoll & Zimmerman (2001) studied the effects of nutritional goal setting and self-monitoring on self-efficacy in university students. They randomized 113 students into four groups: goal setting, self-monitoring, goal setting and self-monitoring, and

control. They found that those in the goal setting and self-monitoring group had significantly higher self-efficacy scores than the control group, and concluded that combining goal setting with self-monitoring can significantly enhance dietary behaviour change. Hockey FIT draws on elements of social support, goal setting, and self-monitoring to deliver an optimal weight loss and healthy lifestyle program.

2.5 Conclusion

This literature review began by looking at the state of men's health in Canada and the organizations that were developed to improve men's health. It drew attention to the fact that men are under-represented in weight loss programs, and that extensive research has been done to fix this problem. Sports-based interventions in the UK and United States have shown success in engaging men. Due to the success of FFIT in the UK, the research team has collaborated with their authors to create Hockey FIT. In order to better understand how social support impacts men in these types of programs, social support and the social cognitive theory was reviewed. Social support was summarized and studies that incorporated social support and SCT were identified. Although there were studies that drew on single sources of support – for example, wives, coworkers, or peers within an intervention group – there is very little literature on the multiple sources of social support in a gender-sensitized, sports-based weight loss and healthy lifestyle program that are presented in this study. This study aims to explore all forms of social support, both within and outside of the Hockey FIT program, to explore the impact of social support in a male-only, sports-based intervention program.

Chapter 3

3 METHODS

This chapter describes the methods and methodologies used during this study. First, the design and origins of Hockey FIT will be explained, along with an explanation of the constructivist paradigm. Next, the recruitment process and the methods of the Hockey FIT program will be outlined. Finally, data collection and analysis will be discussed and the thematic approach used for data analysis will be explained. It is important to note the distinction between the main Hockey FIT study and my social support sub-study.

3.1 Study Design

This study was approved by Western University's Research Ethics Board (HSREB File Number: 106310, **Appendix A**). The Hockey FIT program was adapted from a program in the United Kingdom called Football Fans in Training (FFIT), a gender-sensitized weight loss and healthy lifestyle program run through clubs from the Scottish Professional Football League. Trained community coaches delivered the program to men in weekly sessions using a sport-related medium. This program successfully recruited men to participate, leading to sustained weight loss and positive lifestyle changes (Hunt et al., 2014). The FFIT program is explained in detail elsewhere (Wyke et al., 2015). The Hockey FIT research team adapted this program, utilizing the sport of hockey and its local junior hockey teams. HealthSteps (HeS) is another evidence-based lifestyle prescription program that has shown to yield positive lifestyle changes and weight loss (Gill et al., 2017). In its pilot trials, the Hockey FIT program aimed to successfully integrate FFIT and HeS; conduct program optimization via process evaluation; evaluate the feasibility and acceptability of the program; and help men lose weight, increase their physical activity, and improve other health-related outcomes.

The purpose of my sub-study within Hockey FIT was to explore the social support given and received by men, and its impact on health outcomes during the Hockey FIT program. The main Hockey FIT project was designed prior to the beginning of my Master's degree, therefore my sub-study on social support was partly secondary analysis. The

initial data collected in focus groups and coaching interviews was collected before my sub-study began. After collecting and screening initial data, the research team realized that there was sufficient data to explore social support as it related to the Hockey FIT program, and this social support sub-study began. For data collected at the 12-month participant interviews, questions about social support were asked to provide richer data.

To explore the social support that men gave and received during the Hockey FIT program, a constructivist paradigm was utilized. The constructivist paradigm implies a subjectivist epistemological approach where the researcher's voice is present in the work and findings are created by the researcher as research progresses (Lincoln & Guba, 2000). Constructs such as social support are not absolutely true or false, rather they are perceived by the individual (Lincoln & Guba, 2000). Data was collected from the participants and coaches in the form of focus groups and interviews. Coding methods consistent with those of Ziebland and McPherson's (2006) thematic analysis were implemented to analyze the social support data that was collected from interviews and focus groups. Thematic analysis provides a rigorous and rich strategy to analyze qualitative data in the form of interviews and focus groups.

3.2 Recruitment and the Hockey FIT program

The creator and principal investigator of Hockey FIT, Dr. Rob Petrella, conducted this research as part of a pilot study run through two communities that were home to Ontario Hockey League (OHL) teams. Participants were recruited from their local hockey fan team base using team emails, social media, radio, posters (**Appendix D**), newspaper ads, and word of mouth. To be involved in the study, men had to meet the following three criteria: i) they must be between the ages of 35 and 65, ii) they must have a body mass index (BMI) greater than or equal to 28 kg/m², and iii) they must pass the Physical Activity Readiness Questionnaire, or receive clearance from a physician to enter the program. A two-armed, pragmatic randomized controlled trial was used, whereby 40 men from each team were randomized to either the intervention (Hockey FIT) group or the comparison (waitlist control) group. While the intervention group began the Hockey FIT program immediately, the waitlist group began the Hockey FIT program after 12 weeks. Both groups received publicly available physical activity and healthy eating guidelines at

the beginning of the study. Furthermore, men in both groups received a pedometer to track and record daily step counts for seven days prior to beginning the program. Men in the intervention group kept their pedometers for the 12-week active phase of the program. Measurement sessions were held for both groups at the beginning of the study and after 12 weeks. An additional measurement session was held for only the intervention group after 12 months. Measurements taken at these sessions included weight, waist circumference, BMI, blood pressure, and daily step counts over a 7-day period. During measurement sessions, participants also filled out questionnaires focused on self-reported diet and alcohol intake, self-reported physical activity, self-esteem, self-rated health, and positive/negative affect.

The Hockey FIT program consisted of a 12-week active phase and a 40-week maintenance phase (**Table 3.1**). During the active phase, men in the intervention group partook in 12 weekly, 90-minute group sessions delivered by trained coaches in local and team facilities (team rink, local gyms). Coaches were trained by meeting with representatives from FFIT, and undergoing mock sessions with the Hockey FIT research team. The coaches led the Hockey FIT sessions, which combined physical exercise with evidence-based behaviour change techniques, such as self-monitoring and setting SMART goals, and healthy eating advice, such as reducing portions and alcohol consumption. Classroom activities were often interactive to encourage active participation from the men. The physical exercises that men did were designed to simulate exercises that hockey players perform in their own warm-up and exercise routines. Intensity of physical exercise increased as the program went on. While at team arenas, men had access to many behind-the-scenes features of their favourite junior team. Men were able to work out inside the hockey rink, tour the home team's dressing room, and meet and interact with players and team personnel. Participants in the waitlist group were invited to begin the Hockey FIT program after both groups had completed their 12-week measurements. Following the active phase, one-on-one interviews were held with each of the four Hockey FIT coaches, and focus groups were held for the men who completed the active phase of Hockey FIT.

Table 3.1. Timeline of events for the intervention group in the Hockey FIT program

	Day 1	12-week Active Phase	End of 12 weeks	40-week Maintenance Phase	End of 52 weeks
Intervention group (n=20)	Initial physical measurements	Weekly sessions	Physical measurements	Access to Tyze	Final physical measurements
	Received pedometer		Coach interviews	Six emails from coaches	Participant interviews
			Focus groups	Booster session	

Following the 12-week active phase there was a 40-week maintenance phase. During this time, participants were encouraged to maintain their healthy habits that they had developed in the active phase without the accountability of meeting with the Hockey FIT group every week. The men were provided with access to Tyze, an online social network where they could interact with other Hockey FIT participants and coaches. On this site, the men could chat with one another, share ideas for new healthy recipes and physical activities, or organize social gatherings such as walks, hockey games, or golf games. Furthermore, the men received six emails over the course of the 40 weeks from their Hockey FIT coaches. These emails encouraged the men to continue with their healthy habits, and provided useful health tips, such as how to stay active during winter months. At the end of the maintenance phase, men in the intervention group underwent their final physical measurements, and took part in a one-on-one interview with a member of the research team.

To complete the Hockey FIT program, men must have attended at least six of the 12 weekly sessions during the active phase, including at least one in the final six weeks. Those who completed the program were eligible to take part in focus group sessions at the end of the active phase and one-on-one interviews following the maintenance phase. 14 men took part in two focus groups, while 28 out of the 30 men were available for one-on-one interviews (**Figure 3.1**).

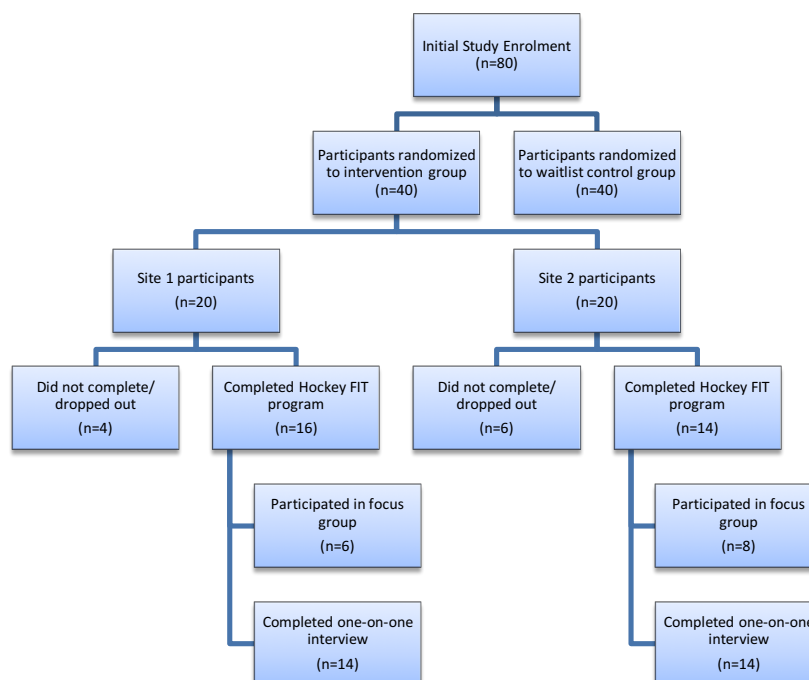


Figure 3.1. Diagram depicting number of participants who took part in each stage of the Hockey FIT program.

3.3 Data Collection

The qualitative data that was collected was initially intended to explore the feasibility and acceptability of the main Hockey FIT program. After the implementation of my social support sub-study, data were used to explore the social support that men in the program gave and received, and its impact on health outcomes. Data used to explore social support arose from two participant focus groups, four one-on-one coach interviews, and 28 one-on-one participant interviews. Participant focus groups and one-on-one coach interviews were conducted following the 12-week active phase, while one-on-one participant interviews were held after the 40-week maintenance period. Fidelity notes and post-session coach interviews were also collected as qualitative data, however they provided no relevant data for the social support sub-study and therefore were not utilized.

During each of the 12 Hockey FIT classroom sessions, a member of the research team attended and took fidelity notes. The researcher had a document for each session which contained a detailed description of the outline of the session, and what the coaches were

expected to discuss. The researcher would record the number of participants that attended the session, and then take notes about the coaches' ability to correctly deliver the program, the men's comments on various subjects, and any difficulties that the coaches encountered. The researcher sat in the back of the classroom while taking fidelity notes, and although the men were aware of the researcher's presence and purpose, the researcher did not participate in group discussion so as to limit her role in the classroom. The main purpose of having the researcher take fidelity notes was to evaluate the coach's ability to run the program, as well as to assess the feasibility and acceptability of the program as it was being run. Although the fidelity notes were used for process evaluation in the main Hockey FIT study, they were not a part of my social support sub-study.

Following each classroom session, the researcher who took fidelity notes would conduct a short post-session interview with the head coach that ran that session. These interviews were very structured, asking three questions for each topic (for example, "factors affecting our eating and activity") that was to be delivered during the session:

- i) Did you deliver?
- ii) What went well?
- iii) What would you do differently?

Coaches were asked to provide any additional comments at the end of the interview. Like the fidelity notes, this data was primarily used to evaluate the feasibility and acceptability of the program, and was not used in social support research.

Following the completion of the 12-week active phase, men from each location were given the option of participating in a focus group to discuss their experience with the Hockey FIT program. Six men from the Site 1 Hockey FIT group attended a focus group in Site 1, while eight men from the Site 2 group attended a focus group in Site 2. A member of the Hockey FIT research team conducted the focus group sessions, while two other members of the research team who were involved in data analysis attended and observed the session. The researcher had a limited role in focus group discussion – she would pose questions or topics to the group and then remove herself from the conversation while the men shared their thoughts and experiences (Charmaz, 2014).

Topics introduced by the researcher were very broad and included reasons for joining Hockey FIT, how the program has caused changes in their lifestyle, what they expected in the upcoming maintenance phase, opinions on coaches, their likes and dislikes with regards to the program, and any changes they would like to see in the program (**Appendix E**). Focus group sessions lasted roughly 90 minutes, and were audio-recorded and transcribed verbatim. Transcripts were then read over and any possible identifiers were removed.

At the end of the active phase, the coaches and assistant coaches from both sites sat down with a member of the research team for a one-on-one interview. These interviews lasted 60-90 minutes, and were also audio recorded and transcribed verbatim. Questions in the interview were open-ended in order to gain rich feedback from each coach. Topics discussed included overall thoughts on delivery and content, likes and dislikes, suggestions for improvement, and overall satisfaction. After identifiers were removed from the transcripts, each transcript was sent back to its respective coach so that they could read it over in a process called member checking (Tracy, 2010).

During the measurement session at the end of the 40-week maintenance phase, each participant sat down with a member of the research team for a 20 to 30-minute one-on-one interview (**Appendix F**). Unlike the focus groups, these interviews were structured and contained specific questions for the participants. Questions focused on eating habits, physical activity habits, program resources, participants' perceptions of their local OHL team, and the social support that was received throughout the program. These interviews were also audio-recorded and transcribed verbatim, and any possible identifiers were removed.

3.4 Data Analysis

The data collection methods used in the main Hockey FIT project were implemented before my social support sub-study was planned. Therefore, slightly different methods were used for data collection and analysis in the main Hockey FIT study, and data analysis in the social support sub-study. While the main Hockey FIT study employed the more traditional methods of grounded theory (Corbin & Strauss, 1990), my social support

study used a thematic analysis approach to analyze the data (Ziebland & McPherson, 2006). Both methods incorporate focus groups and interviews into their data collection techniques, so there were no issues in changing methods for data analysis. My involvement in the data collection and analysis for the main Hockey FIT project, namely the coding phase, allowed me to immerse myself in the data and provided me with valuable insight and experience that aided through my own coding process in my social support study.

To remain consistent with both grounded theory and thematic analysis methods, data analysis occurred simultaneously with data collection and researchers immersed themselves in the data (Corbin & Strauss, 2014; Ziebland & McPherson, 2006). Following the two participant focus groups and four coach interviews, the audio recordings were transcribed verbatim. Individuals in the focus groups were not linked to their dialogue; the transcripts only distinguished between the research member running the focus group and the rest of the group. All six 12-week data transcripts were then read by a member of the research team, and each transcript was cleaned by removing any possible identifying words or phrases and replacing them with a generic word to protect those involved in the study. An Excel file was created with identifying words and their replacements. The cleaned coach interview transcripts were then emailed back to their respective coaches so that they could confirm its accuracy or remove any statements that they did not wish to be included to ensure validity and rigour (Tracy, 2010). Each coach read and returned the transcript without making any changes.

3.4.1 Analysis for the main Hockey FIT project

After transcript cleaning and member checking were completed, the six transcripts were distributed to three researchers to begin the coding process. These researchers initially read over each transcript several times to familiarize themselves with the data. The transcripts were then coded using open coding, axial coding, and selective coding for the purpose of finding emerging themes in the data (Corbin & Strauss, 1990). After multiple rounds of coding with three members of the research team, we developed a list of seven themes that would be used to guide the process evaluation and program optimization for the main Hockey FIT project. Being involved in this process allowed me to fully immerse

myself in the data and gain experience in qualitative coding methods. Due to the relatively small sample size, the research team chose to code the data manually rather than use coding software.

After completion of the 40-week maintenance phase of the Hockey FIT program, participants attended a measurement session that included a short one-on-one interview with a member of the research team. Fourteen men were present at each site and were interviewed. At this point, my social support sub-study was part of Hockey FIT. This interview asked specific questions that were developed to further explore the men's experience of social support in the program. Interviews were audio recorded, transcribed, and cleaned to protect anonymity. Following this process, four members of the research team read through the transcripts – two members of the research team read all 28 transcripts while the other two members read 14 transcripts each. The researchers from the main Hockey FIT project then met and discussed their findings. The themes that were present in the initial focus groups and coach interviews were also present in these participant interviews. Thus, these interview transcripts were coded using the theme list developed from the 12-week data. This data was also used to write 12-month data summaries for Evaluation Questions on the Process Evaluation Matrix.

3.4.2 Analysis for the Hockey FIT social support sub-study

After completing the coding process and evaluation matrix summaries for the main Hockey FIT project, analysis focused on the social support sub-study. As line-by-line coding had already been done, repeating this process would have been futile. Furthermore, whereas the initial coding was inductive and produced emerging themes, this research question had expected outcomes before coding began. The coding methods of Ziebland & McPherson (2006), called thematic analysis, were used. In this process, the coder looks for emergent themes as well as anticipated themes (Ziebland & McPherson, 2006). Using this method, the two focus group transcripts, the four coach interview transcripts, and the 28 12-month participant interviews were coded.

To begin, each transcript was read and every quote that was related to social support was collected in a Word document. The quotes were then grouped by similarity, using

headings such as family support, peer support, and Hockey FIT group support (Ziebland & McPherson, 2006). According to thematic analysis methods, the purpose of coding is to ensure that all related quotes and sections that fall under the same headings can be retrieved with ease. Furthermore, the data collected for each heading should be meaningful and manageable – there is little point in coding single words line by line (Ziebland & McPherson, 2006). Therefore, only meaningful and important quotes were included in the collection.

During the coding process, I was also researching different theories of social support that would relate to and support my data. Relating theory to the data is a way to enrich findings and increase analytic depth (Ziebland & McPherson, 2006). Lakey and Cohen's (2000) social cognitive model was incorporated into my data. This provided a model to fit my headings into and present my findings. This social cognitive model posits that increased social support leads to an increase in self-esteem, which in turn leads to positive health outcomes; and that increased social support leads directly to positive health outcomes (Lakey & Cohen, 2000). The three headings of this model – perceived support, self-esteem, and health – were used as new groups under which the previous headings were sorted into. The first round of coding focused only on quotes that pertained to social support. The transcripts were revisited to collect quotes about increased self-esteem and positive health outcomes. After grouping similar quotes together, major themes for each of the three groups were created. For perceived support, the four major themes were group cohesiveness, friendly competition, family support, and peer support. Under self-esteem, the major themes were self-efficacy, sense of belonging, and sense of accomplishment, and the major themes for health outcomes were healthier eating, increased physical activity, and heightened awareness. The findings for each of these themes are presented in detail in the Results chapter.

Chapter 4

4 RESULTS

In this chapter, the results of this sub-study are presented. The results are presented using a modified social-cognitive model developed by Lakey & Cohen (2000), which hypothesizes that i) perceived support leads to an increase in self-esteem, which leads to positive health outcomes, and ii) perceived support also leads directly to positive health outcomes (**Figure 4.1**). Results are presented in three sections: perceived support, self-esteem, and positive health outcomes. Passages from participant focus groups and interviews, as well as coach interviews, are used to illustrate the social support given and received by men during the Hockey FIT program, and its impact on health outcomes.

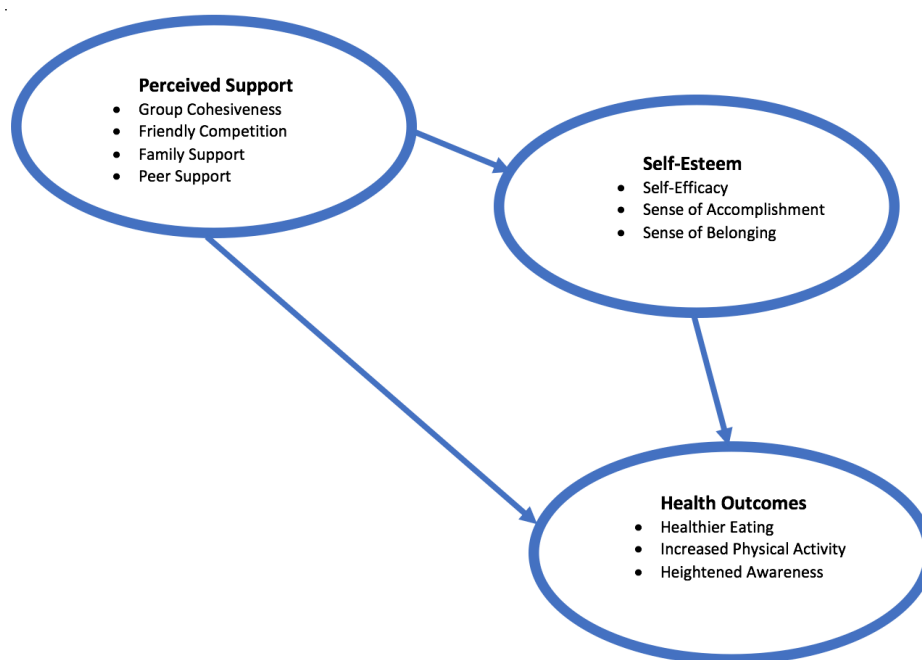


Figure 4.1. Lakey & Cohen’s social-cognitive model (2000), modified to include major themes.

In the following sections, quotes are presented from data collected from two participant focus groups (Site1FG and Site2FG), 28 one-on-one 12-month participant interviews (Site1I1-14 and Site2I15-28), and four one-on-one coach interviews (Site1Coach1, Site1Coach2, Site2Coach3, Site2Coach4). These identifiers will be listed after each passage. During the audio recording of the focus group sessions, participants were not

identified by their individual voices. When quotes from the focus groups are presented in this chapter, P1 – P5 are used only to distinguish the different people talking in each unique conversation, and do not necessarily represent the same participant across multiple passages. For example, in a quote where three participants are speaking, P1, P2, and P3 will be used to distinguish between the three participants. In a quote where only one participant is speaking, only P1 is used – this P1 is not necessarily the same participant who is represented by P1 in any previous or future quotes. Participants speaking in the 12-month interviews will be denoted as I1 – I28, and passages from coach interviews will be represented by C1 – C4.

4.1 Perceived Support

The perceived support given and received by the men in the Hockey FIT program was essential in leading the men to achieve their health and fitness goals. The participants created an environment during the 12 weekly classes where support was reciprocated throughout the entire group. They received support from the Hockey FIT coaching staff, not only during class sessions, but during the 40-week maintenance phase as well. Support from the local junior hockey was evident throughout the entirety of the program, which strengthened the men's connection to the team. Perhaps most important was the support that men gave and received during their time outside of the Hockey FIT sessions. Since the active phase of the program consisted of 12 weekly 90-minute sessions, men needed support in other areas of their life. Eating healthy and getting daily physical activity was a large part of the Hockey FIT program that took place away from the Hockey FIT group. Men found support in their families, friends, and coworkers, which led to the reinforcement of their newly learned healthy behaviours. There were four major themes of perceived support that led to an increase in self-esteem and positive health outcomes. Group cohesiveness and friendly competition were internal to the Hockey FIT program. Family support and peer support were external to, but influenced by, the Hockey FIT program.

4.1.1 Group Cohesiveness

Men joined Hockey FIT hoping support from a group would engage them to set attainable goals to improve their health. For example, when men were asked about the reasons they joined Hockey FIT, they had the following responses:

P1: I wanted to see if a group dynamic – because I've never worked out in a group dynamic – made any difference or not. (Site2FG)

P1: Yeah, I guess, you know, knowing we weren't doing the right things, but you know, it's easier [to improve] when it's in a group than trying to do it by yourself. (Site2FG)

Once the program began, men quickly realized the benefits of being around a group that shared so many common interests and goals. This led to group cohesiveness early on in the program, as men supported one another during the weekly sessions.

P1: I think as well it's very structured and it's geared to a group of guys that are interested in hockey in a certain age category so there's a connection and that's been very helpful. (Site2FG)

I5: Meeting every week, talking about it with, like I said, people just like us, right. We're all kind of the same so that was it for sure. You have a group of guys trying to do the same thing so yeah. For sure it was just the community of it. (Site1I5)

P1: And if it would have been a mixed male – female, I don't know if it would have been the same.

P2: I don't know.

P3: Oh no no. Just the guys. (Site2FG)

Men also received support from the Hockey FIT coaching staff. The Hockey FIT coaches delivered all 12 weekly sessions during the active phase. They created a fun, laid-back, judgement-free environment where the men were encouraged to share their ideas and interact with others in the group. The coaches continued to support the men during the maintenance phase via email, Tyze messages, and the nine-month booster session. As the

program leaders, the actions and words of the coaches were vital to the success of the men. When asked during the focus groups to comment on the coaches, men gave positive responses:

P1: I personally thought that they did a very good job.

P2: I liked them a lot. (Site1FG)

P1: I thought they were very, they were interested in this, it wasn't something they were doing like they were forced to do it, they really had a genuine interest in the health and well-being of us.

P2: Yeah, I got a very honest vibe, for lack of a better word, about them.

P3: Yeah and he always had input, when you got broke up into little groups to talk about what you did that week or what you didn't do and what you found hard, and you know, they're always walking around and putting input into it, you know, so it was very good. Very good. (Site2FG)

The support provided by the coaches created an environment where men were comfortable enough to share and interact with the coaches. One man could not attend a weekly session, but sent a picture to the coach of him being active while on vacation. Coaches recalled stories of men explaining to them how they had improved the eating habits of themselves and their family at home because of what they learned during the Hockey FIT sessions. The following quote from a focus group illustrates the group's fondness for their coaches, and their willingness to joke with them:

P1: They did a really good job of demonstrating all the physical activities, really good, but only for like a few reps. (laughing)

P2: That's a recommendation, we want him to do everything with us.

P3: Yea. (Site2FG)

The maintenance phase was a difficult period for some men in the program as they experienced relapse when they weren't held accountable by weekly sessions. The coaches provided online support during this time in the form of emails and messages on Tyze, a social networking site that each man had access to. These messages served as reminders

for the men to continue with their goals. During the 12-month interviews, men spoke about the messages that they received from the coaches:

I3: When they were sent out they did remind people that, you know, you should be staying on goal, you should be watching what you eat. (Site1I3)

I16: It made you think, for sure, like if you were getting off track or whatever, it made you think that you had to get back on to it. (Site2I16)

For some men, the connection to their local junior hockey team, and the fact that Hockey FIT was affiliated with the team, contributed to their motivation to join. They enjoyed the support that they received from the hockey club in their weight loss journey. They appreciated the behind-the-scenes access to the team's arena, and getting to speak with former players. This was an added element of support that was unique to programs such as FFIT and Hockey FIT. Men saw this as a chance for the team that they had supported for many years to give back to the community. When asked if being a fan of their local team made a difference during the program, men stated that it was part of the reason they joined Hockey FIT.

P1: The hockey connection is what got me started. I'm a huge hockey fan, I played a lot of hockey, ... and if I can combine the hockey with some exercise to get into better shape so I could play more hockey, [that] was kind of the lead in. (Site1FG)

P1: The first pamphlet I ever saw was given out at a [OHL1] game, and that's where I got it and that kind of intrigued me. (Site1FG)

P1: It's great to have the affiliation of the [OHL2] though, that's for sure. (Site2FG)

P1: [When asked if the OHL connection was important] Sure, that's how they got us, you know, because we're season ticket holders, so they got you involved right? (Site2FG)

Nine months into the program, a booster session and group reunion was scheduled where men were invited to attend a regular season game between [OHL1] and [OHL2]. This session was intended to reward the men for continuing with the program, and to serve as a reminder to return to healthy habits for those who had regressed. It was a further gesture of support from the hockey teams. Although some men stated that partaking in Hockey FIT did not alter their perception of their local junior hockey team because they already had a positive outlook on the team, many others stated that completing the Hockey FIT program added to their already positive perception of the team. Men who attended the booster session spoke highly of it during the 12-month interviews:

I21: It sort of re-energizes you and meeting the other guys that were there is another sort of inspiration. (Site2I21)

I24: It's kind of neat to see the guys, a couple of the guys did really well so it was kind of cool to see, it makes you think that you can actually accomplish something. (Site2I24)

I9: It actually brought me back from a couple weeks of, you know, falling off the wagon if you can call it that... It really helped to actually say, okay, yeah you can still find some ways to do it... Comradery was probably number one, knowing where the guys were at, getting to know some of the other guys from the [CITY2] program. (Site1I9)

4.1.2 Friendly Competition

The comradery in the group led to an element of competition during weekly sessions. Many men involved in Hockey FIT admitted to being former or current hockey players, and still enjoyed the friendly competition. The competition that developed within the group was healthy, as it drove each participant to compete and do his best. In this way, the competition between the men held them accountable to each other. Men felt as though they were part of a team, and they did not want to let one another down. They constantly checked in each week during the active phase to see how successful the rest of the group was in reaching their weekly goals. They pushed each other during physical activity sessions in order to get maximum effort out of everyone involved. The men maintained a

friendly, humorous, and comfortable environment at all times. Men were eager to talk about the competitiveness within their respective groups during the focus groups:

P1: Last but not least, the physical activity has been quite competitive.

P2: Yeah (laughing).

[Moderator:] So you liked that?

P1: Yes, the competitive part. (Site2FG)

[Moderator:] What kept you coming to the program? What made you come back week after week?

P1: The competition, I had to see what the guys are looking like, how are they doing.

The combination of everything, I wanted to learn, the next week I wanted to see what else. And the competition and everything. Everybody said they just wanted to come back. (Site2FG)

P1: When we were young we were probably very competitive, I know I was, but as you get older you lose it, but I mean we still want it, you know. (Site2FG)

P1: I need to compete head to head. So hockey or ball hockey, I saw myself as head to head, it was competing one to one for me. (Site1FG)

Competition was brought up again during the 12-month individual interviews. The following are responses from men when asked what they found helpful in maintaining their goals during the active phase:

I2: Obviously we had a goal in mind of what you wanted to reduce by the end of the program of the 12 weeks. Then obviously myself I'm a little competitive you know, in showing up with others, so that helps push you as well. (Site1I2)

I16: Competing against all the other guys was the big one. Yeah. The biggest one was the competition against the others, it wasn't a competition, but it was, every guy does that, right. (Site2I16)

I17: I guess it would be the competition between the guys, everybody's trying to do better than the other person, so you know, you'd show up and you'd do your stuff and you'd weigh in and it was the competitive nature of it, I guess. You didn't want to disappoint your friends who were there at the same time, you know. (Site2I17)

I26: Just the different exercises we did and the kind of competitive nature of being in that group and trying to keep up with everybody else. Not wanting to fall behind everybody else. (Site2I26)

Apart from the internal competition, some men expressed they would have liked to see competition between the two sites (i.e., as part of the pilot study, the program was being run at two sites simultaneously). Given that their respective junior hockey teams are rivals, men involved in the pilot study in [CITY2] wanted to have a competition against the group in [CITY1] for added motivation. In doing so, these men reinforced their idea that they were a team, and they wanted to compete against their rival city's team, just as the two hockey teams do. The idea was proposed by men in the focus group. The following is the exchange during a focus group regarding competition between cities:

P1: It would have been nice to see the competition between the [OHL2] and the [OHL1], to compete that class against our class.

[Moderator:] So the competition really matters?

P1: Oh yeah it does.

P2: Yeah, find a way to get us to compete somehow against [CITY1], it would be more motivating.

P1: Even a competition with [CITY1] every week and then look at some kind of prize. Nothing major, but just some kind of incentive for people.

P2: So that might be really good to have that [CITY1] [CITY2] thing. No seriously right, and have some sort of announcement between periods at one of the [OHL2] games (laughing) you know what I mean, that we kicked [OHL1]'s ass.

P3: Well, anything we can do to kick [OHL1]'s asses! (laughing) (Site2FG)

Because of the competitive nature within the Hockey FIT groups, men felt accountable to one another. They wanted to show up every week with their goals completed because they did not want to be the one person in the group who wasn't successful. This group cohesiveness created a productive environment whereby everyone was committed to achieving their goals. Men discussed the idea of being held accountable by each other in the following quotes. They also discuss the 9-month booster session and the 12-month measurement session and how they will hold them accountable to have a successful maintenance phase.

P1: For me it was the accountability, knowing that there's these 15 other guys that are there, almost every single week, always talking to you, just talking about what's going on. That's the biggest thing that hit me, you know, my portion sizes are a third of what they were and that's probably the biggest thing I needed to do. I'm already at 17,000 steps today, that's my average. But it's just one of those things. Like for me cutting that back made a huge difference and it was the accountability of the guys around. (Site1FG)

P1: Well I'm glad that we come back in nine months and in 12 months because I think there's some accountability there right. I don't want to come back in nine months and find my weight is either the same or more. I'm too proud for that. So, I think there is accountability. Maybe people won't show up in 9 months or a year. I will, whether I'm up 50 pounds or down 50, I'll be there, so that accountability won't let me be up 50. (Site1FG)

P1: That's what Wednesday nights were right. It was peer pressure because again you don't want to be the guy who didn't make his number, not that any of you would ever know, because not one of you looked at my book and I never looked at any of yours. But that peer pressure is out there that says, I'm not going to be the guy that didn't do what I had to do. (Site2FG)

P1: We started doing some of these challenges, remember that? When it's like okay, you guys have to do 15 jumping jacks. And then the other team, we did it

also, so that shows the team spirit right, so it just makes you more of a group.
(Site2FG)

I2: I just think it was just the accountability of talking to the team and how did you do on a daily basis, that's the biggest thing. (Site1I2)

Accountability was extremely important in helping men maintain their habits. After they finished the active phase, men looked for other ways to hold each other accountable. They joked about holding each other accountable during the upcoming hockey season in the following focus group exchange:

P1: Going along with the hockey fan part, I go to the hockey games, I don't know any of these guys, I've never met them before, now I can look, we'll nod to each other over a round of beer. (Site2FG)

P1: The interesting part of the dynamics would be when we all go back to the arena when the season starts and we start running into each other again, "Oh hey, how are you doing?"

P2: Well I'll hide my beer behind my back (laughing).

P3: And the pizza slices and nachos.

P4: As I'm eating my French fries! (laughing). (Site2FG)

The competition between men in the Hockey FIT group was perceived as another form of support. These men identified as hockey fans, and the element of competition is deeply rooted in hockey and in other sports. They used competition to encourage one another to achieve their eating and fitness goals every week. By doing so, men felt they were accountable to show up to each weekly session with their goals completed to the best of their ability. They approached their goals with a team concept, where the success of each individual was essential to the success of the team as a whole.

4.1.3 Family Support

The Hockey FIT program had a positive effect on people outside of the participant group. By spreading the knowledge they learned in Hockey FIT, men supported people in their

lives to live healthier as well. This had a reciprocal effect – passing their knowledge and tools along to family and friends also enabled these family members and friends to hold the men accountable to their original goals. During focus groups and interviews, men spoke of ways they involved their families, friends, and coworkers in methods to eat healthier and increase physical activity. They discussed the support they received from their families, aiding them towards their goal of making sustainable changes to their lifestyle. Coaches also recalled stories that men had told them about getting their families involved in meal planning or exercise. The support that men received was crucial to their success in the program.

During their one-on-one interviews, the Hockey FIT coaches spoke about instances when men had told them about ways they involved their family in exercising or eating. The coaches were glad that the lessons they were teaching were being heard beyond the classroom. These activities not only helped the men make their desired lifestyle changes, they also strengthened relationships within their family.

C1: If their kid went for a bike ride they'd go with them, or they'd ask their kid to come on a walk with them when they realized they didn't reach their step goal yet at the end of the day. Some were saying it was good bonding time, that they hadn't really ever thought to go for family walks before and now they were getting their kids to come out with them, so it was good to hear that it was relating to the family and they were enjoying it. (Site1Coach1)

During the focus group sessions, the men told several stories of getting their wives and children involved. Men described joining Hockey FIT and making healthier food choices for their children. They also discussed how they worked together with their family to help each other make healthier choices:

P1: And I don't recall the gentleman that was sitting across from me, he brought up that his change of lifestyle has bettered the dietary situation for his kids. And I immediately went, you know what, for me to be honest, I started buying a lot less crap. I've swapped my dietary purchases for a lot more fruit and vegetables. There was enough there for me, and the little bit that they wanted. So there's a

gain there, so for me that's a win for me, maybe I'm going to kick off early because I let myself get this way, but at least I can impact my son and daughter. (Site1FG)

P1: I make the kids go with me and I have one son who's very active in everything he does, he watches what he eats and all that stuff, and I have two more that could care less you know, but trying to make everybody in the house do it, it helps me.

[Moderator:] It seems to be common too, family.

P2: I can honestly say that's why I'm here doing this.

P3: I want to live to see my family and my kids grow up and get married right, I lost my dad at 13 and he was 33 so it would be nice to, I passed him, but go way past him. Double. (Site1FG)

P1: Well my family helped me make the changes. I went home and just explained after these sessions, just talking about the eating and the alcohol and all that good stuff and you know, you kind of educate your spouse right, so you make healthy choices together as far as your food. (Site2FG)

During the 12-month interviews, the men were asked to comment specifically on the support they received from outside of the Hockey FIT program. They were also asked if and how them being in the Hockey FIT program had affected their family and friends. Although some men reported that they received little or no support from friends and family, the majority mentioned that their family had been a vital part of their success. Many men mentioned their wives as their main source of support in their daily lives. Men reiterated the idea of reciprocal support, stating ways that their success had helped their family members:

I2: Food wise [my kids] would ask questions you know, "dad what did you learn last night at the seminar?" They'd go, "dad, are you supposed to be eating those?" And so they would give me a little guilt trip here and there and stuff, so it's cute. Or they just know before I even do it, they just put a post it note, "daddy – do not touch". (Site1I2)

I3: My wife supported me and she's actually joined Weight Watchers because of it and so it's helped us that way. (Site1I3)

I4: My wife and kids were super supportive of it. We would do stuff as a family, we might go for a bike ride [or] we'd go for a walk to the park. It actually got us all active. And with the eating too, because I was trying to eat better and, [I'd] go to get groceries, I'd look at the stuff and make a healthier choice that way, and my family was pretty supportive of that and wanted to eat what I was eating. (Site1I4)

I8: My wife is totally supportive of it, she was all for the changing in eating habits and such. I'm still hammering on her to change some of hers, without being – what's the best word to describe it – I don't know, without being forceful. But yeah she supports, she wants our kids to eat healthy and it's like “show it to the kids.” I don't want my kids on fast food or anything like that, you know, she's all for that so that's good. (Site1I8)

I28: Me and [my wife], I mean we really watch what we're buying now, like we're looking at nutrition labels where I would never look at those, I mean it never really ever got into my mind. We try to stay away from the processed stuff you know, we don't buy any pre-made hamburgers or any of that stuff [because] it's all processed and it's all got salts and sugars and just junk. (Site2I28)

4.1.4 Peer Support

Aside from family, some men made their neighbours and coworkers aware of their new healthy habits, and encouraged them to join. Once again, the men provided their friends and coworkers with the knowledge they learned to hold themselves accountable, thus benefitting both sides. One man also described drawing inspiration from his friends who were marathon runners:

P1: I have some friends that run in marathons and they keep telling me it's contagious, I tell them it's not, there's no way that's contagious (laughing). But this is a world of difference but still, it's on a different level. For me to walk for

half an hour is the same as [them] running in a six-hour marathon, so yeah, it is kind of contagious and it's good. I feel a lot better. (Site1FG)

Other men spoke of ways they have affected their friends' and coworkers' lives by spreading information they learned in Hockey FIT:

I3: The people that I go to the hockey game with, I told them about the Hockey Fit group. We discuss what I learned that week and I never asked them if they took it home and used it themselves, but I'm sure it probably affected their eating habits and their activity levels and things like that so I'm sure my passing the information along to them probably helped in some ways. (Site1I3)

I21: This has inspired my friend to work harder to lose weight. It's an ongoing issue for him, he sees me changing with what I'm doing, I think it helps him. (Site2I21)

I2: At work, I told them about my program and then a couple other people are doing a 10 000 step-a-day challenge so we started doing that at work too, and it just started up again this week. (Site1I2)

Men were encouraged by compliments from coworkers who noticed that they had made an effort to incorporate healthier habits:

I16: I did lose quite a bit of weight when I did the 12 week, and just hearing from coworkers and stuff, "oh wow, you look like you're doing good." Everybody that knew I did it was very supportive. (Site2I16)

I25: I just had a few people say "oh, how are you making out with the program?" More encouragement from coworkers than family or friends, they were always asking how the program is coming along, how are you doing afterwards, that sort of thing, so a lot of encouragement from coworkers. (Site2I25)

Men used their coworkers as a source of accountability, sharing their progress and making sure they stuck with their goals:

P1: I'm chatting with a couple guys at work that are nowhere in the same position. I was trying to convince them to come out for the trials but they didn't, whatever. They're now trying, now that they've seen, I've only lost like 6 or 7 pounds but they can see it, so they're starting to say hey, maybe the next time one's going off, we should go out. So I already started to try to talk to them and just trying to use them as an accountability, building it in around me so that I know I don't get stuck. (Site1FG)

External support played a major role in the success of the Hockey FIT program. Men had support from coaches, other participants, and their local junior hockey team while they attended sessions during the active phase, but it was important to have further support in their day to day lives. Simple things such as comments from coworkers on appearance or food choices went a long way in helping men with their self-perception. Having friends to do activities such as walking, biking, or golfing aided men to reach their physical activity goals. Most importantly, having a family who supported their food choices and exercise habits was instrumental to sustaining healthy habits. Aside from receiving support, men were also able to provide support to their friends and families who were looking to improve their own physical wellbeing. This perceived support not only led to positive health outcomes for men and their families, it also led to an increase in self-esteem.

4.2 Self-Esteem

The increase in perceived social support led to an increase in self-esteem. When men initially joined Hockey FIT, they were not satisfied with their current health and they wanted to develop habits that led to a healthier life and an overall sense of wellbeing. Three major themes were identified as elements of self-esteem: Self-Efficacy, Sense of Accomplishment, and Sense of Belonging. Men realized and accepted that they were capable of making the right choices in terms of physical activity and healthy eating. They gained confidence from the new eating and exercise habits they developed in Hockey FIT, and felt proud of the changes they had made. Furthermore, men felt comfortable working out with men who were in a similar situation, rather than feeling out of place at a public gym.

4.2.1 Self-Efficacy

When men joined Hockey FIT, they understood that changes needed to be made in order to create and maintain a healthy lifestyle. As men moved through the program, they began to realize that they were capable of making the necessary changes in physical activity and eating habits in order to improve their lifestyle. What men initially saw as overwhelming tasks became attainable by making small, sustainable changes. During the focus groups, men discussed their reasons for initially joining Hockey FIT. They realized that they wanted and needed to make changes to their lifestyle, and looked to the program to help:

P1: To lose weight.

P2: I wanted to build better habits.

P3: I wanted to be better educated for healthy foods and fitness.

P4: I just needed to focus for myself, just to get back to some things that I'd always done, but I'd let go. (Site2FG)

P1: Just knowing that I needed to do something but not knowing what to do, and this came along, it was offered, I hummed and hawed for two weeks over whether to do it or not, and finally signed in.

P2: It was something to get started right, like you keep thinking the last couple months I should do something, I should do something.

P3: Like jumping off a cliff into the water, you got your toes over the edge, but you don't go.

P4: Something to get me started I guess.

P5: I think just knowing I had to do something and I needed to make a change, so this kind of came along at an opportune time and the atmosphere seemed like something I'd be interested in. (Site2FG)

Looking back on their time in the active phase of the program, men discussed how these changes needed to be made step-by-step:

P1: I would say small steps, it doesn't matter what you're doing, eventually it will move into a routine, you know, if you try to do too much all at once, I think you set yourself up for failure. (Site1FG)

P1: But for most of it took an awful long time to get either as heavy as we are or just to get the lifestyle, and you're probably not changing it overnight. It's going to take an awful long time. (Site1FG)

When it came to reaching their physical activity goals, men were initially skeptical. They were challenged early on, not only by the in-class physical activity sessions, but also by their weekly step count goals. Once they started to perform these exercises each week, however, they realized that their goals were within their reach. Men talked about reaching their step count goals in the following passages:

P1: It's hard to get them [steps] in but if you actually go out to do the walking or whatever, the steps actually came really quick. (Site2FG)

P1: [On reaching his step count goals] When I first saw it, I thought man, I got to do that much more? But like you said, your body gets used to doing it and it gets easier and easier. (Site2FG)

These men discussed the in-class physical activity and how doing the exercises every week led to positive results:

P1: That first week when we did the sit ups, I went to my cottage I think it was the Friday and I'm like oh my God, I can't even move my abs, they were just killing me! But that's a good feeling you know, and every week it gets easier, you know your muscles are still there. (Site2FG)

P1: After four or five weeks, I can see I was making some progress so the positive feedback, you know, I'm going to keep going. (Site2FG)

Men also understood that their eating habits needed to change in order to live a healthier lifestyle. They learned about portion control during their classroom sessions. Men initially struggled to accept that these smaller portion sizes would satisfy their hunger, but

after making changes for a few weeks, they realized that they could sustain a diet with smaller portions:

P1: Try and keep a mental focus that the moment you open your mouth it's critical what you put in. And it doesn't have to be the double Big Mac or the 12-inch [sub]. You can live on a 6-inch. (Site1FG)

Self-efficacy was an important first step for the men that led to an increase in self-esteem. When these men signed up for Hockey FIT, they recognized that they needed to make changes to improve their health. After attending classroom sessions and setting specific goals, they had a plan in place to make the necessary changes. Once they began working on these goals, the men realized that these goals were achievable, and that they had the ability to reach their goals and live a healthier lifestyle. Because of this self-efficacy, men were determined to return to classroom sessions every week during the active phase, and to continue to set and reach goals during the maintenance phase. The realization that they were making positive changes was also responsible for their increase in self-esteem.

4.2.2 Sense of Accomplishment

After realizing that they could make positive changes to their lifestyle, men's self-esteem increased further due to their newfound sense of accomplishment. They took pride in the changes they made and in who they were becoming as an individual. They were happy to be shopping for healthy foods, or to be encouraging their families to become more active. They could see the positive results that came from their participation in the active phase, and expressed their interest to participate in future Hockey FIT programs.

During the focus groups, men were proud to discuss the physical changes they had already made during the active phase:

P1: The shorts I'm wearing today I couldn't fit into 12 weeks ago.

P2: My wardrobe changed too from week one to week twelve.

P3: Where I noticed it was my belt. I'm down two [inches] right now, I was at three, of course I did a little bit of Guinness on the weekend, that took that inch away (laughing) (Site1FG)

The sense of pride and accomplishment that the men received from the Hockey FIT program was infectious, and men expressed their desire to sign up for Hockey FIT again, even willing to pay for the program that they received for free:

P1: Knowing what I know now I wish I could sign up for another 12 weeks.
(Site2FG)

P1: Think about this. If this sort of program was offered to you know that has all the elements we were talking about, that element of meeting once a week and discussing nutrition, would you pay for it going forward? I probably would now.

P2: I would.

P3: Yeah absolutely. Oh yeah.

P1: Can you get that support versus trying to do it on your own? But I guess initially, no I wouldn't have paid, but now I probably would to continue doing it.
(Site2FG)

Men were willing to share their knowledge and their success story, offering to promote the program to potential future participants:

P1: If you're looking for ambassadors to promote this in the future, you know, I'm putting my name out. (Site1FG)

Men also discussed the sense of pride they now felt when grocery shopping for their family. They were now buying healthy foods that fit into their new diet, and felt the need to educate those around them on the benefits of eating healthy:

P1: I've always been doing the shopping for my wife and I, and I'm finding I'm proud of what's in my basket because I know it's healthy and I've always been that way, but when I push it beside a young mother and she's got Pop Tarts (laughing) and barbecue chips, I guess I feel a little guilty about not wrapping on her about, "you want to change that with a bag of apples?" or something.

P2: When you go to the till and you take your basket and you're putting your stuff out, don't you feel like you're kind of showing off?

P3: Oh I do!

P2: You do psychologically, you're standing at the front of the line, yeah I feel pretty good! (Site1FG)

Apart from healthy eating, men were proud of their improved physical activity habits. Men who would rarely exercise were now very active, often getting their families involved.

P1: I have a 10-year-old that's into absolutely everything and now I just find I'm doing way more with him, he's even got me in the pool a couple of times where I used to make his big brother go out with him, you go play catch with him in the pool, and now that's me. I think it's kind of contagious. (Site1FG)

The newfound sense of accomplishment in the men ensured that their healthy lifestyles continued past the active phase and into the maintenance phase. During 12-month interviews, men discussed ways in which they had been able to maintain their healthy dietary and physical activity habits, and how these habits made them feel "better":

I11: The better I ate, the better I felt. So it made me want to try and eat better, as much as I could, staying away from the fatty, greasy stuff. (Site1I11)

I12: Just overall feeling better, that's the big factor you know, you could see it. (Site1I12)

I15: As of right now I'm in a period where I'm on the treadmill every other day and I feel much better and that's great. (Site2I15)

I23: I'm eating a lot better and I also am doing a lot more exercise and walking than I've ever done. And really I have kept it up... I had a great time, it was really good, you know. I'm in a lot better shape than I was when I started 9 months ago. (Site2I23)

The sense of accomplishment in the Hockey FIT men was a major factor in their increased self-esteem. Once they realized they could make changes to improve their health, they began to see positive results. These results gave the men great feelings of confidence and pride in their dietary and exercise habits, something that they lacked

before joining Hockey FIT. They expressed their interest in joining the Hockey FIT program for a second time, and being ambassadors for the program in the future. They added that their new habits made them “feel better”. The sense of accomplishment in the men also led to positive health outcomes.

4.2.3 Sense of Belonging

An important factor that led to an increase in self-esteem in the Hockey FIT men was their sense of belonging when interacting with the other men during the Hockey FIT weekly sessions. The fact that the men were in similar situations to each other allowed for a comfortable, judgement-free environment that bred success. The sense of belonging did not come immediately for the men, but as the sessions progressed they began to bond over similar features such as age, gender, body size, and their passion for hockey. As a tight-knit group, these men were able to express themselves and encourage each other, increasing self-esteem and creating positive habits along the way.

The Hockey FIT coaches provided their perspective on the dynamic of the group. They stated that initially the sessions were more difficult to deliver because the participants weren't willing to speak and share with one another, but that quickly changed as the weeks went along.

C2: It seemed to get a lot easier as the weeks went on and they became more comfortable with one another. (Site2Coach2)

C1: At first it was funny, we were sitting in [arena] and we were standing at the front and they all got to choose their seat and they all were very scattered and didn't sit anywhere near each other. There were maybe a few of them that were engaging in conversation, but otherwise it was pretty quiet. And then by the end of the week they each had their little groups that they would sit at, like at the tables and they would know what the other one was up to all week. They'd say, “oh, how was your golf game” and whatever, so they were becoming friends and it was cool to see. They had conversations sometimes even like they were, you could see that they were becoming buddies. We'd ask them to talk about something and then they would start rambling off about something else because

they just wanted to catch up so. So it was cool to see they were getting along so well. (Site1Coach1)

Men reiterated this fact during the focus group, highlighting a key moment when the group came together:

P1: We all have the general understanding that we're all in the same boat right. But it did start out slow, I mean you know, people were quiet and didn't really talk and then as the weeks went by it's like people were more talkative. Then we started doing some of these challenges, like the challenges remember that? When you know, it's like okay, you guys have to do 15 jumping jacks. And then the other team you know, we did it also so that shows the team spirit. It just makes you more of a group you know, it brings that group dynamic. That kind of changed things right there, I liked that. (Site2FG)

Men could relate to one another because they were all overweight and looking to gain healthier habits. They discussed a deterrent to their group dynamic and sense of belonging during the focus group. Men felt that there was one person who was in better shape than the rest of them, and felt he didn't belong in the group:

P1: The rallying point if you will, and it was that goal that everyone wanted the same, you know, I care enough to be here, to do this. Some of us wanted something different but we still stick it out to hear and learn. I was surprised to be honest, there was the one guy that I'm looking at going, I'd kill to be that skinny!

P2: Yeah really. He was almost built.

P1: Yeah, and so with those two people in the group, I wouldn't be surprised if some guys in the back of the room are going, I'm here, I'm barely getting into my shirt here, you know, my pants are barely doing up and then we got Hulk Hogan over here and the skinny guy. So those guys – because one of the things that came out in our very first – remember we did the, some things we didn't like? And some of it was we wanted to improve our self-image and we didn't like being compared to the model on the front of the magazine concept. And yet we had two

in the class. Nice guys, that's not a chirp against them, I'm just being honest.
(Site1FG)

Despite the fact that one or two men may have appeared to be in better shape than the rest of the group, there was still a strong sense of group cohesiveness and belonging amongst the men. They discussed the idea of working out in this group compared to working out in a gym with a different population. They liked the idea that they were all going through similar challenges together:

P1: I feel better being with a group that's close to my same age versus when you go to the gym and you see a bunch of kids working out who are in college or whatever because they're all buff and thin and you're struggling with a smaller amount right, so at least everyone's huffing and puffing here and having a tough time and there's no champion guy as it were, blowing everybody out of the water.
(Site2FG)

The sense of belonging for the men in the group created a comfortable environment that they could not have experienced outside of the Hockey FIT program. Being with men in a similar situation to them was a major factor that led to an increase in self-esteem. Rather than feeling embarrassed or ashamed working out in front of healthier people, they could work out confidently knowing that everyone in the group was supporting each other in going through the same struggle.

The comments and stories shared by men during the focus groups and the 12-month interviews, as well as the comments from the coaching staff during their interviews, showed that men increased their self-esteem due to a perceived increase in support. The support came from many areas at different times throughout the program. During the active phase, men were beginning to learn ways to eat healthier and become more active. They had the support of their Hockey FIT peers and coaches, as well as support from family and friends. Men relied heavily on support from family and friends during the maintenance phase, when they no longer had the support from meeting weekly with their Hockey FIT group. As the support continued during the program, men's self-esteem continued to build. Men realized that they were able to make sustainable changes to their

lifestyle. They were proud of the new habits they had developed, and were eager to pass them along to family members. They expressed their desire to continue living a healthier lifestyle and maintain their newfound sense of well-being. Finally, they gained confidence from interacting with the other men in the Hockey FIT program. These three major themes – Self-Efficacy, Sense of Accomplishment, and Sense of Belonging – were aspects of heightened self-esteem in the men, which led to positive health outcomes.

4.3 Positive Health Outcomes

The positive health outcomes that men experienced developed due to an increase in perceived support and, in turn, an increase in self-esteem. The three major themes for positive health outcomes were Healthier Eating, Increased Physical Activity, and Heightened Awareness. Men changed their diets to eat healthier foods, cut back on fast food, and reduce portion sizes. They developed new physical activity habits and set daily step count goals. Most importantly, men became more aware of the choices they were making. These health outcomes led to an overall sense of wellbeing, which was not present in the men prior to joining Hockey FIT. Their heightened awareness allowed them to get back on track if they experienced bouts of relapse during the maintenance phase. The quantitative physical health changes that men made during the Hockey FIT program are documented elsewhere (Petrella et al., 2017).

4.3.1 Healthier Eating

During the Hockey FIT program, men made a conscious effort to eat healthier. They received education on portion sizes, reading nutrition labels, and ways to substitute healthier foods into their diet. This information, along with the support from their peers in the Hockey FIT group, allowed the men to implement these changes into their daily lives. They were able to make small changes to their diets that were sustainable long-term. One major change that men made was to make sure they ate breakfast every day:

P1: I never ate breakfast for 51 years, and now I haven't missed breakfast in probably 6 weeks, so that part has been really good.

P2: I never ate breakfast and I never snacked in the morning. At lunch I'd go and I had a feast, half that table was mine obviously because I hadn't eaten for

breakfast, but now I'm eating a couple of nectarines every morning. So I'm eating nectarines in the morning, I get a bag of carrots, I eat usually half of that in the morning as a snack, so I do find myself eating lots of little [meals]. (Site1FG)

Men made healthier choices when eating at restaurants, and tried to reduce the amount of times they ate out:

P1: Instead of going to [a fast food restaurant] which I used to go to probably 6 times a week, I might go there once a month now. I pick places like [healthier restaurant], stuff like that. Things that are a little healthier. (Site1FG)

Men also made simple substitutions when cooking at home to make their home-cooked meals healthier:

P1: I made a change in the way I cook. We used to use oils or butter for a lot of things, like everybody. Now almost everything we do, if we can do it, I'll poach eggs, I'll poach meats, if I'm grilling things I'll use coconut oil on the grill versus butter, really trying to find those efficiencies to just cut that fat a little bit. (Site1FG)

Men mentioned that they read food labels to make healthier choices when shopping as well:

P1: Well I actually look at those food labels on packages and pay attention to what I'm eating. I don't just grab anything out of the fridge, I eat healthy, like eat salads and things like that for lunch. I really focus on that. (Site2FG)

Finally, men mentioned that they are more conscious of the foods they eat. The Hockey FIT program has allowed them to maintain changes to their diet, as evidenced by the following quote:

I20: I've maintained more of a low carb type diet. I don't eat much bread. Being careful with the amount of potatoes, way more vegetables, may more salads, meat, some cheese. I'm much more conscious of all those things than I was prior to the 12-week active phase. (Site2I20)

The changes in eating habits were a major positive health outcome for the men involved in Hockey FIT. They were given information on how to eat healthier, and the support from the group caused them to alter their diets in a way that would benefit their new healthy lifestyle. From cutting down on fast food, to eating breakfast, to changing cooking methods, men found simple ways to create and sustain a healthy diet.

4.3.2 Increased Physical Activity

Another positive outcome for men in Hockey FIT was their increase in physical activity. During the active phase, men underwent physical activity sessions once a week as a group. They also wore pedometers throughout this phase, and set daily and weekly step goals. Men thoroughly enjoyed the in-class physical activity sessions, as they added an element of friendly competition into their lives. Furthermore, they supported each other by holding one another accountable to reach their own weekly step count goals. Men developed physical activity routines during the active phase and maintained these habits throughout the maintenance phase.

During classroom sessions, the coaches told the men ways to make small changes in their daily routines to incorporate more physical activity. One coach gave an example of how these suggestions helped the men increase their daily steps:

C2: And what really helped them was to think of it more of a substitution, even if it's something small like, "okay, it normally takes me two minutes to ride the elevator, it's going to be four minutes but I'm going to take the stairs now," and those little ways that they can kind of substitute rather than add time into their day, they found really effective and it really helped get their step counts up.
(Site2Coach2)

This coach gave further evidence of ways that men changed their daily routines to increase their physical activity:

C2: Another guy said, "well I figured if I'm going to a health class, I may as well walk there," so he left an hour early and even though it was 8 kilometres from his

house, he just gave himself an hour to make it to the class and walked every week.
(Site2Coach2)

Men discussed the difficulty they had of reaching their step count goals in the first few weeks. They talked about the changes they made to reach their goals:

P1: It's changed dramatically for me. I worked really hard the first week to walk and I saw my number was 3,800 and I'm looking around and there's other guys who are at 10,000., I'm thinking holy crap, but that was where I was. And now I walk, I ride the bike at work, I'm swimming, I went on vacation and I rode by bike 16 kilometres every other day. And I just would never have done it. Now I'm almost 10,000 [steps] every day. I walk the golf course which I didn't do for three years. I'd get a cart because I had all kinds of excuses to do it. (Site2FG)

P1: I'm way more active now. The first week they did an average step count, I was hovering around 4500, 5000. I have a desk job and now it's probably 10,000 or more [steps]. I go out for a walk every lunch now, I walk every evening.
(Site1FG)

Men admitted they were making conscious efforts to increase their physical activity and maintain healthy levels of activity each day. This activity led to weight loss and an increase in energy:

P1: I'm really just watching my steps a lot more, I'm trying to be way more active, again if I can incorporate stretches into it or some sort of strength building while I walk. (Site1FG)

P1: I made sure at least five times a week I get my 10,000 steps. (Site1FG)

P1: At 9:30 at night, if this thing hasn't buzzed and then I'll just go out in the neighborhood for a walk. Walking will always be a part because I'm actually starting to enjoy it and the activity level is good. I have way more energy, again I think I've lost maybe, I'll find out Thursday, but 8 pounds, one pant size and just way more energy. (Site1FG)

The men were able to carry their physical activity habits with them into the maintenance phase. The support received during the active phase reinforced positive habits that continued even after their weekly sessions.

I20: I now average 12,000 steps a day. I remember doing it in the first week to find out your average, I had worked really hard to try and up it, and I was averaging about 3,000 a day. So now I'm up between 11 and 12,000 every day. We got a dog back in November so I take the dog for a walk, we go for a walk every day. Now I'd like to think I need to up it, maybe do a little bit of a jog but the dog doesn't want to jog yet, so that's my excuse and I'm sticking with it!
(Site2I20)

Step count was a very important tool in helping men increase their physical activity. For the men, it was something tangible where they could easily see improvement. The support they received allowed them to feel good about themselves when exercising. The self-esteem boost encouraged the men to continue with these habits after the active phase. Increasing their physical activity not only led to physical health improvements, but mental and social health improvements as well. Men spoke of feeling better and having more energy due to their increased physical activity.

4.3.3 Heightened Awareness

The most important health outcome that the men received from the Hockey FIT program was their heightened awareness. Men received knowledge and skills that allowed them to make healthy choices for the rest of their lives. For some it was knowledge that they had once known, but had forgotten over time. For others, it was new information that they could use moving forward. Everyone who completed the Hockey FIT program was now educated on how to live a healthy lifestyle. This was beneficial for not only themselves, but for their families as well, as they were eager to pass on information.

Men discussed the feeling of guilt when they chose to eat something unhealthy, or when they weren't physically active. Prior to the program, men may have made poor food choices or chose to take the elevator without a second thought. Equipped with their new

knowledge, however, they knew the right and wrong decisions that would lead to a healthier life.

P1: Even if I do choose to eat something bad I feel really guilty about it (laughing). Not only just feel guilty, but feel bad after I eat it, you know, you enjoy it for the second, but you really regret it after because you know how many calories are in it, you know how bad it is.

P2: I feel guilty when I look at the elevators at work (laughing). (Site2FG)

Food labels and portion sizes were two areas of education that were important for the men. Men who had never read food labels before now knew what to look for to make healthy decisions when choosing food. Many were surprised to learn the proper portion sizes, and incorporating proper portions into their meals made a significant difference. One coach discussed the classroom session in which food labels and portion sizes were discussed:

C2: When we were doing those sessions there were a couple uh-huh moments where I would bring something up to their attention and they would just kind of have this stunned look on their face where it's like, "oh my gosh, I can't believe it, I haven't been aware of that before." (Site2Coach2)

Men also benefitted from using pedometers to measure step counts. The pedometers kept them aware of their daily physical activity – they knew if they needed to go for a walk at night if they had been inactive that day. Men who were nowhere near 10,000 steps per day realized they needed to make changes in their daily routine to reach their goals.

I18: It made me more conscious about what I'm eating, about step count. (Site2I18)

I14: Just being conscious of steps. There is a goal, there is a target. I have a Fitbit so you know, I didn't realize how important steps were in maintaining a healthy lifestyle. (Site1I14)

Positive health outcomes were evident throughout the entire Hockey FIT program. Men started to make lifestyle changes during the active phase, and these changes developed into routines that they could continue throughout the maintenance phase. Many of these changes were small, simple changes that would lead to their goal of losing 5 to 10 percent of their original body weight. Furthermore, these changes were sustainable so that they could be maintained without a major relapse or setback. The positive health outcomes were made possible due to the perceived support and increase in self-esteem in the men. The perceived support caused the men to continue with Hockey FIT week after week. The realization that they could be successful and the evidence of early success, as well as the sense of belonging within the group led to an increase in self-esteem. Both of these factors led to the positive health outcomes as the new healthy lifestyle that the men developed was reinforced.

Chapter 5

5 DISCUSSION

This discussion will begin with a brief overview of the research question, the methods used, and the major findings. It will then explain the meaning of these findings and why they are important to the study. These findings will be compared to the literature. Next, the limitations of this study will be discussed, along with ways that the study could be improved. The quality of this research will be explained using Tracy's (2010) eight "big tent" criteria for excellent qualitative research. Tracy presents "a model for quality in qualitative research that is uniquely expansive, yet flexible, in that it makes distinctions among qualitative research's means and its ends" (2010, p. 837). Finally, the large-scale implications of this research will be discussed and suggestions will be given for future directions of research.

The goal of this study was to explore the social support given and received by men, and its impact on health outcomes during the Hockey FIT program. Qualitative data was collected from participant focus groups and one-on-one interviews. Thematic analysis (Ziebland & McPherson, 2006) was used alongside Lakey and Cohen's (2000) social-cognitive model to explore the pathway by which perceived social support leads to positive health outcomes. Lakey and Cohen's social-cognitive model suggests that perceived support leads to increased self-esteem, which leads to positive health outcomes; and that perceived support also leads directly to positive health outcomes. Group cohesiveness, friendly competition, family support, and peer support were the four major themes that factored into perceived support. This support led directly to positive health outcomes, as well as to an increase in self-esteem. The three major themes for increased self-esteem in the men were self-efficacy, sense of accomplishment, and sense of belonging. Both perceived support and increased self-esteem led to positive health outcomes, categorized by the following three themes: healthy eating, increased physical activity, and heightened awareness.

5.1 Perceived Support

There were four major themes of perceived support during the Hockey FIT program. Group cohesiveness and friendly competition were experienced while the Hockey FIT participants met during their weekly sessions. Alternatively, family support and peer support occurred outside of the Hockey FIT weekly sessions. Although this support was received away from the sessions, increased support from family and peers arose because men joined Hockey FIT. This support was essential in the men's success during their time in the Hockey FIT program. During the 12-week active phase, all four themes of support were present. The bond shared by the men in the Hockey FIT group strengthened each week as they began to think of themselves as a team. This led to friendly competition in the group, as they held each other accountable to achieve their step count, healthy eating, and exercise goals. Meanwhile, men shared their new healthy lifestyle goals with their families, and their families were eager to help. Spouses, children, and other relatives encouraged and supported the men at home. As men made healthy changes to their everyday routines, their friends and coworkers offered words of support and encouragement that kept the men accountable to their plan and drove them to continue. During the maintenance phase, support from within the Hockey FIT group lessened. While men could keep in touch via the Tyze social network, they were no longer held accountable by weekly group sessions. Because of this, support from family and peers was critical during this time. Throughout the entire Hockey FIT program, perceived support was a tool that led to an increase in self-esteem, and positive health outcomes for the men involved.

5.1.1 Group Cohesiveness

The Hockey FIT project aimed to bring together men who shared common characteristics in order to create relationships within the group. This was achieved by bringing in men who were between the ages of 35 to 65, overweight, and fans of their local junior hockey team. The program was delivered in a laid-back fashion that allowed for playful banter and open discussion among the coaches and men. This resulted in an environment where the men developed relationships with the coaches and the other men in the group. Because the program had an affiliation with the local junior hockey team, and group

sessions were held in the team's arena, men felt that their group represented their junior hockey team. They became their own team, and the success of the team depended on the success of each individual. This brought the group closer, as they encouraged and supported one another to reach their goals each week. The coaches were also a large part of the group cohesiveness. They incorporated small group discussions during classroom sessions, and partner exercises during physical activity so that the men could get to know each other. They built up a trust with the men, and their dedication to delivering the program did not go unnoticed. Together, the coaches and men became a group that was eager to show up for weekly sessions and determined to achieve their goals.

Group cohesiveness was expected as a group dynamic was one of the unique features of Hockey FIT. Young et al. (2012) conducted a systematic review on the effectiveness of male-only weight loss interventions. They found that male-only weight loss interventions were an effective way to engage and assist men with weight loss. Furthermore, they suggested that male-only weight loss interventions were more likely to be successful if there is group face-to-face contact and three or more contacts per month. Other studies have shown that using sports and sports teams has been successful in attracting men into weight loss interventions (Pringle et al., 2011; Hunt et al., 2014). FFIT, the predecessor to Hockey FIT, combined the idea of a male-only intervention with attracting men through sport, and partnered with Scottish football teams in the Scottish Premier League to create their gender-sensitized weight loss program (Hunt et al., 2014). They found that the group setting and the fact that the men felt that they were in similar situations to one another were important in generating peer support (Gray et al., 2013a). This is consistent with the group cohesiveness theme in Hockey FIT, where the closeness of the group led to perceived support.

Some participants talked about regression during the maintenance phase of the program, when they were no longer held accountable by weekly sessions. In this period, men received six emails from Hockey FIT coaches encouraging them to stick to their goals and providing small tips to help them do so. The men also had access to Tyze, a social network that allowed members of the Hockey FIT group to interact with one another online; however, this resource was under-utilized. During one-on-one interviews, some

men mentioned that they would have liked more support during the maintenance phase. In future program delivery, more effort should be made to promote the use of Tyze. Suggestions should be made about the possibility of monthly meetings between the men as a source of continued support (Young et al., 2015).

5.1.2 Friendly Competition

One outcome from the Hockey FIT program that was unexpected by the research team was the importance and the emphasis that men placed on competition within the group. In both the focus groups and the one-on-one interviews, men stated that they enjoyed the competitive elements of the program. They also listed competition as a motivator to reach their physical activity goals and to eat healthier. Although men felt that they were competing with one another, it didn't lead to a sense of animosity within the group. The competition was friendly, with men pushing each other to improve in both the classroom physical activity sessions and their weekly step count goals. The men viewed competing against one another as a fun challenge, and it allowed them to reach goals that may not have been reached without the support and motivation of competition.

The idea of friendly competition that breeds support can be compared to internal competition within a sports team. Greblo, Baric, and Erpic (2016) conducted a study that aimed to explore "the relationship between perfectionism during sports competitions and peer-motivational climate" (p. 373). Although they initially hypothesized that competition among individuals would be associated with negative reactions to imperfection, they instead found that "perception of intra-team competition and ability was positively associated with striving for perfection, indicating that perception of peer encouragement to outplay teammates might be perceived as [a] motivator for investing more effort" (Greblo et al., 2016, p. 375). Given that the men in Hockey FIT were all hockey fans and many had played or still played hockey and other sports growing up, they may have treated this Hockey FIT group like a sports team. Therefore, they encouraged each other to give their best effort while attempting to reach their goals.

5.1.3 Family Support

Family support occurred externally to the in-class Hockey FIT sessions, however, the support received by the men was due to the fact that they had joined Hockey FIT to adopt a healthier lifestyle. Support came from many different family members for the men, including spouses, children, siblings, and parents. They provided support by encouraging, holding the men accountable, and by adopting healthier lifestyle habits alongside the men. Since men spent the majority of their free time with their family, this support was crucial to their success. Men who were able to go for a bike ride with their children, or eat healthy meals together with their wife were successful in maintaining their healthy habits, as they did not feel alone in their journey. By including their family in their healthy lifestyle changes, they could have a positive effect on their lives as well.

The importance of receiving support from family members during weight loss intervention programs has been well-documented (Hart, Einav, Weingarten, & Stein, 1990; Verheijden, Bakx, van Weel, Koelen, & van Staveren, 2005; De Souza & Ciclitira, 2005). MacLean et al. (2014) observed the role the men's wives played in changing their eating habits during FFIT. They found the wives to be highly influential in the decision-making process for planning and eating meals. Wives were open to the new information that the men had gained from the FFIT program and wanted to help the men make changes to their diet. During Hockey FIT one-on-one interviews, the majority of men mentioned their wife as their biggest supporter outside of the Hockey FIT group. Having someone who was also willing to make changes and eat healthier meals provided men with the necessary support to guide their behaviour change process.

The support involved in the men's families was reciprocal. In sharing their new knowledge of healthy eating and proper exercise, they encouraged their family members to join them in practice. This held the men accountable to their goals, while allowing the family to gain positive health outcomes. Studies show that there are benefits to giving social support, as well as receiving it. A study by Brown, Nesse, Vinokur, & Smith (2003) examined the relative contributions of giving versus receiving support and the idea of reciprocated support in a sample of married adults. They reported that mortality was significantly reduced for people who provided instrumental support to their relatives

and peers and emotional support to their spouse. Furthermore, compared to giving support, receiving support had no effect on mortality. They concluded that giving support may in fact be more beneficial in terms of health outcomes than receiving support. In the Hockey FIT study, both giving and receiving support were instrumental in the men's success. Receiving support from family members gave the men motivation to continue, and giving support made them feel good about their own healthy choices. Wilson and Musick (2000) observed the effects of volunteering on the volunteer and found that volunteering can be intrinsically rewarding. They found that the benefits are usually unintended consequences of behaviour, and there is evidence to suggest that attaching rewards to such altruistic behaviour will "undermine motivation and distort values" (p. 167). The men in the Hockey FIT program who involved their families in healthy meals and exercise likely did so because intrinsically they felt good about improving their family's health. They also believed that by helping their family, they were helping themselves by creating a safety net that they could rely on in times of difficulty.

5.1.4 Peer Support

Aside from family support, men also received and gave support to their friends and coworkers outside of the Hockey FIT program. Men heard words of encouragement from their peers after they had made noticeable changes to their lifestyle. The interest shown by friends and coworkers created a sense of accountability for the men, as they did not want to lose the progress they had made. This support reinforced the men's positive behaviour changes and led them to continue with the program. Men not only received support from their peers, they gave support as well. They made their friends aware of the Hockey FIT program and the lessons they had learned. They encouraged their friends to make healthy lifestyle changes, or to join Hockey FIT the next time it was offered. These men accepted a new role in their peer group as a healthy living ambassador. They enjoyed their new lifestyle, and were determined to educate their friends and coworkers. This follows the trends of reciprocal support and the positive effects of giving support that were discussed earlier.

Social support at work has been shown to have positive health benefits. Hämmig (2017) explored the multiple sources of social support, including at home and at the work place,

and the effects they had on health and well-being. He found that having support from multiple sources, such as family, friends, and coworkers, is significantly more beneficial for health than having support from a single source, such as a spouse. Other studies have reported that a lack of social support at work can lead to feelings of depression, anxiety, and lack of sleep (Sinokki et al., 2009; Sinokki et al., 2010). Men in Hockey FIT who received support and encouragement from their friends and peers would have received these health benefits. With the support they received from the men in the Hockey FIT program, their family at home, and their peers away from home, men had multiple sources of support to assist them with their healthy lifestyle changes. Although these studies look at social support from friends and coworkers, they do not explore this support during a weight loss intervention program. Further research is needed to better explore the way that peer support effects health outcomes during an intervention.

5.1.5 Types of Social Support

The four types of social support generally discussed in the literature are emotional, appraisal, instrumental, and informational support (House, Umberson, & Landis, 1988; Berkman, Glass, Bissette, & Seeman, 2000; Kurpas et al., 2014). All four types of social support played a role in Hockey FIT. These four types of social support will be discussed in relation to the perceived support themes of group cohesiveness, friendly competition, family support, and peer support. The types of support are summarized in **Table 5.1**.

All four types of support were present in the group cohesiveness theme. Emotional support within the Hockey FIT group was something that brought the group together and kept them working towards a common goal. Emotional support is important for people with chronic health issues such as obesity, as it benefits a person's psychological functioning (Kurpas et al., 2014). The men felt sympathy for one another because they had so much in common and they all wanted to lose weight and adopt a healthier lifestyle. They referred to their group as a team, and each member held the other accountable. Appraisal support came mostly from the coaches in the Hockey FIT group. The coaches delivered the program to the men and helped them set SMART goals. They constantly encouraged the men during group sessions. Instrumental support also came from the coaches in the group. The coaches volunteered their time to educate the men

during weekly sessions. The Hockey FIT program also provided the men with a pedometer, which became a successful support tool in achieving step count goals. The coaches also delivered informational support to the men by delivering the program each week. Furthermore, the closeness of the group led to men sharing information with each other about various healthy tips that they had incorporated into their lives, such as cooking meals, eating breakfast, or taking the stairs rather than the elevator at work.

Table 5.1. Types of support, definitions, and perceived support themes where each type of support occurred.

Type of Support	Definition	Themes
Emotional	Love, caring, and sympathy provided by others (Kurpas et al., 2014)	Group Cohesiveness Friendly Competition Family Support Peer Support
Appraisal	“Help in decision-making, giving appropriate feedback, or help deciding which course of action to take” (Berkman et al., 2000, p. 848)	Group Cohesiveness Family Support Peer Support
Instrumental	Concrete support that includes providing money, time, or assistance that allows the person to engage in healthy behaviour and reduce stressful situations (Boutin-Foster, 2005)	Group Cohesiveness Family Support Peer Support
Informational	“Advice, suggestions, or directives that assist the person in responding to personal or situational demands” (Kurpas et al., 2014, p. 942)	Group Cohesiveness Family Support Peer Support

Emotional support was the main type of support in the theme of friendly competition. During focus groups and interviews, the men constantly brought up the fact that they

enjoyed the element of competition in Hockey FIT. This competition bred emotional support in the group, as each member was held accountable by the entire group. This is supported by the work of Greblo et al. (2016), who found that intra-team competition yielded higher performance. Men felt a need to complete their goals as best as they could so that they would not let their other group members down. During group physical activity sessions, the competition led to the men encouraging one another to complete each drill. This support drove the men to reach new physical activity goals that may not have been achievable in the absence of a competitive group.

Emotional, appraisal, and instrumental support were delivered to the men by their family and peers. Emotional support from family and peers was perhaps the most important type of support during the Hockey FIT program due to the fact that this was their main source of support during the 40-week maintenance phase. Men relied on comfort and care from their family as well as their coworkers during both phases of the program to reach their goals. Appraisal support came from both family members and peers. Research has shown that appraisal support from family and close friends can not only improve quality of life, but also reduce stress on the person giving the support (Kurpas et al., 2014). Positive feedback at home and at work was encouraging for the men. For men whose wives did the shopping for the family, their wives provided instrumental support by buying and cooking foods that were conducive to their new healthy eating habits. Support from family and peers was essential for these men to sustain their new habits, as they will need this support to continue long after the Hockey FIT program is finished in order to successfully live a healthier lifestyle.

5.2 Self-Esteem

The perceived support that the men experienced during Hockey FIT led to an increase in their self-esteem. The three major themes of self-esteem in our findings were self-efficacy, sense of accomplishment, and sense of belonging. Support that came from multiple sources in the Hockey FIT program led the men to believe that they were capable of making desired changes to their lifestyle. They realized that step count, physical activity, and healthy eating goals that initially seemed unrealistic were attainable. Once men began to achieve preliminary results, they gained a sense of

accomplishment. Their confidence rose as they became comfortable with their new healthy habits. This sense of accomplishment led them to continue to set new goals and lose even more weight. Furthermore, as they became closer with the group of men in the Hockey FIT program, they developed a sense of belonging. These men were on a journey together to become healthier. Their similar weight, eating, and physical activity goals, combined with their love for hockey, allowed them to bond as a group and be confident with the path they were on. For some men, this increase in self-esteem was a boost that they had lost as they grew older and gained weight. For others, it was an entirely new feeling. For the entire group of men, however, this level of confidence was not present when they initially joined Hockey FIT. It was this confidence and increase in self-esteem that we posit led to further health benefits during Hockey FIT.

5.2.1 Self-Efficacy

Albert Bandura defined self-efficacy as “people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives” (1994, p. 72). Furthermore, Bandura stated that stronger self-efficacy will lead to people setting more challenging goals for themselves, and they will have a stronger commitment to achieving these goals (Bandura, 1991). Self-efficacy is closely tied to self-esteem – if a person has high levels of self-efficacy in tasks that they have dedicated sufficient self-worth into, there is likely to be a positive relationship between self-efficacy and self-esteem (Bandura, 1997). Prior to joining Hockey FIT, it is likely that these men had low self-efficacy relating to exercising and eating healthy. Although they may have been aware that they needed to make changes to their health, they didn't believe that they could make sustainable changes on their own. After joining Hockey FIT and receiving support from the Hockey FIT group, friends, and peers, they began to believe in themselves. They set step count, exercise, and healthy eating goals during the program. Once they achieved these goals, their self-efficacy increased, and they set more challenging goals. This continued throughout the program, as did the received support from multiple sources. The idea of a reciprocal relationship between self-efficacy and physical activity has been noted in the literature (McAuley & Blissmer, 2000). In Hockey FIT, research suggested that increased support led to an increase in self-efficacy. The

increase in self-efficacy led to an increase in physical activity, which included setting higher step count goals and attempting more difficult exercises during the weekly physical activity sessions. This increase in physical activity led to a further increase in self-efficacy. As the cycle continued, positive health outcomes were achieved.

5.2.2 Sense of Accomplishment

As men began to progress through the Hockey FIT program, they felt a sense of accomplishment. They were achieving goals that they had set and feeling good about themselves. Men discussed feeling better after practicing their healthy habits. They felt a sense of pride and wanted to share their knowledge with those around them. This sense of accomplishment was another way in which men increased their self-esteem. This sense of accomplishment aligns with Seligman's (2011) Theory of Well-Being, in which accomplishment is one of the five key pillars to living a happy and fulfilling life. Gander, Proyer, and Ruch (2016) performed a study looking at the effectiveness of an online intervention based on Seligman's (2011) five pillars of the Theory of Well-Being. They found that interventions based on accomplishment and positive relationships effectively and significantly increased happiness. Hockey FIT focused on both accomplishment and positive relationships, leading to increased happiness and self-worth in the men involved.

5.2.3 Sense of Belonging

The sense of belonging among the men in the Hockey FIT group contributed to increased self-esteem in the men. Much like in FFIT (Wyke et al., 2015), men were drawn to the program because of the group setting and the likeness of the participants. Although the camaraderie was not immediate, men grew friendly with one another after a few weekly sessions. Studies have been conducted to observe the benefits of developing a sense of belonging with other participants. Wing and Jeffery (1999) studied the benefits of recruiting friends into weight loss intervention programs to increase social support. One group of participants was recruited with friends and social support was a focus during treatment, while participants in the other group were recruited alone and social support was not a focus. They found that participants who were recruited with friends had greater weight losses after a 4-month treatment period and at the 10-month follow up.

Furthermore, 95% of people recruited with friends completed the program, and 66% maintained their weight loss, compared to 75% and 24%, respectively, for those who were recruited alone. Although the men recruited into Hockey FIT were not friends to begin with, they were encouraged to make friends and develop positive relationships within the group. It is probable that the group dynamic contributed to weight loss and the sense of belonging led to a low dropout rate.

The selection criteria for Hockey FIT led to the strong sense of belonging in the group. Each member was male, between 35 and 65 years old, had a BMI of at least 28 kg/m², and was a hockey fan of the same junior team. FFIT also recruited males between the ages of 35 and 65 (Gray et al., 2013a). Initially, they recruited men with BMI of 27 kg/m² or greater, however this was changed to 28 kg/m² after program optimization to “further foster camaraderie and a sense of belonging” (Gray et al., 2013a, p. 11). They concluded that men with lower BMIs were less concerned with losing weight and more concerned with maintaining fitness. In Hockey FIT, men in the group mentioned that there were one or two people who looked skinny and did not fit with the rest of the group. Nonetheless, the majority of the group felt that they could relate to one another’s struggles about losing weight and becoming healthier. The comfortability within the group allowed men to confidently share their stories and struggles of weight loss and seek help from one another. Because of this, topics that are not often discussed by men, such as weight loss, vulnerability, or self-image (O’Brien, Hunt, & Hart, 2005), were discussed openly in Hockey FIT.

5.3 Positive Health Outcomes

Having multiple sources of social support and increased self-esteem led to positive health outcomes for the men in Hockey FIT. The skills gained in the Hockey FIT program empowered the men to make changes to their lifestyle, which included eating healthier, increasing their physical activity, and raising their awareness about healthy living. These were expected outcomes from the Hockey FIT program, as they mirrored the outcomes of FFIT (Hunt et al., 2014). The Hockey FIT coaches supported the men in their pursuit of a healthier lifestyle by educating them and encouraging them throughout the program. They received support from their spouses and other family members that helped them

curb their diet at home. Additionally, participants shared healthy eating advice with each other during weekly sessions. Men increased their physical activity due to support from within and from outside the Hockey FIT group. Men challenged each other during the weekly physical activity sessions. Outside of these sessions, men were supported by their family and friends to adopt a more active lifestyle. Their increase in self-esteem led them to try new forms of physical activity. Finally, the Hockey FIT weekly sessions provided men with knowledge about living a healthier lifestyle, and about the health risks of continuing to live an unhealthy lifestyle. Hockey FIT was a successful program that incorporated social support into a weight loss intervention to allow men to make healthy and sustainable lifestyle changes. More information about the success of Hockey FIT can be found in the following works: Petrella et al., 2017; Muise et al., 2016.

5.4 Establishing Quality

Assessing the quality of qualitative works can be a difficult process. Qualitative work does not often have the predictability and control that quantitative studies have, and therefore has a bad reputation among some researchers (Sandelowski, 2000). Tracy (2010) created eight criteria for excellent qualitative research – (1) worthy topic, (2) rich rigour, (3) sincerity, (4) credibility, (5) resonance, (6) significant contribution, (7) ethics, and (8) meaningful coherence – in an attempt to legitimize qualitative research and develop a toolkit that qualitative researchers across all paradigms could utilize. I will explain each of these criteria, and use them to illustrate the quality of this study.

5.4.1 Worthy Topic

Tracy (2010) suggests that “good qualitative research is relevant, timely, significant, interesting, or evocative” (p. 840). The literature review provided evidence that this study had a worthy topic. Although weight loss intervention studies have looked at social support within a study, there has not been a gender-sensitized weight loss intervention that has qualitatively explored multiple facets of social support. Men’s health and obesity are currently two topics that are timely and relevant. Additionally, more studies are now observing not just physical health, but mental and social health as well. Understanding how social support plays a role in gender-specific weight loss interventions has the

potential to make a significant impact on men's health (e.g., Bunn et al., 2016). After the success of FFIT, Lubans (2014) suggested that this approach be taken using other sports. This research has shown that hockey can be used as a platform to combat obesity in Canadian men.

5.4.2 Rich Rigour

A study that is rich with rigour contains sufficient and appropriate theoretical constructs, data collection and analysis processes, and sampling (Tracy, 2010). Data was collected from focus groups and interviews. I attended one of the two focus groups, and conducted roughly half of the 28 participant 12-month interviews. Once the transcripts were transcribed and de-identified, I read over them many times to immerse myself in the data (Ziebland & McPherson, 2006). Prior to coding for my own study on social support, I helped the Hockey FIT research team code the same data for the process evaluation and program optimization. Spending this time analyzing the data further prepared me for coding for my own study. While collecting and analyzing the data, I kept detailed field notes, indicating my thoughts and assumptions during this process (Ziebland & McPherson, 2006). Methods used were consistent with those used in other successful studies (Hunt et al., 2014). One drawback to this study was its small sample size. As the study was a pilot, numbers were kept intentionally small. Results were then limited by the number of interviews and focus groups. Having more participants would have allowed for greater sampling and added to the rigour of the study.

5.4.3 Sincerity

Sincerity in a study is characterized by self-reflexivity about values and biases, as well as transparency about methods and challenges (Tracy, 2010). My field notes were self-reflexive, detailing my thoughts during data collection and analysis. Monthly meetings were held with my supervisor to discuss my progress and any challenges I faced with my research. The methods used in this study are clearly laid out in the Methods chapter and can be replicated in future studies.

5.4.4 Credibility

Credibility in a study refers to thick description, triangulation, multivocality, and member reflections (Tracy, 2010). When speaking of thick description, Tracy (2010) says that “good qualitative research delves beneath the surface to explore issues that are assumed, implicit, and have become part of participants’ common sense” (p. 843). Many times, the themes of social support and self-esteem were implied and not explicitly discussed during interviews and focus groups. It was my job as the researcher to interpret these conversations and bring forth these underlying themes in the Results and Discussion chapters. Triangulation arose from the fact that we had interviews and focus groups from the participants, as well as interviews with the Hockey FIT coaches as data sources. Furthermore, there were data from two different Hockey FIT groups. Having multiple sources and types of data provided triangulation. Having varied voices, both those of coaches and of participants, also added to the multivocality of the study. After de-identifying the coach interview transcripts, each transcript was sent back to its corresponding coach as a form of member checking. Finally, during the writing process, I had regular meetings and discussions with my thesis committee to ensure my writing was focused and coherent, and my interpretations were credible.

5.4.5 Resonance

Resonance is the “research’s ability to meaningfully reverberate and affect an audience” (Tracy, 2010, p. 844). Hockey FIT is a powerful study that has the potential to affect male hockey fans across Canada. This study highlights the importance of social support in weight loss interventions as well. Many quotes presented in the Results chapter are powerful and have the ability to resonate with the reader. Reading about men changing their lives for the better can have an impact on the reader, and can lead to change in their own lives. Tracy (2010) mentions transferability – when readers feel the story overlaps with their own situation and has an impact on their lives – as a characteristic of resonance. This study has a strong potential for transferability to overweight or obese men living in junior hockey communities in Canada.

5.4.6 Significant Contribution

This study provides significant contribution in many ways. With plans to expand across the country, Hockey FIT has a chance to impact men's health across junior hockey communities in Canada. This research provides insight into the importance of having multiple sources of support during a male-only, sports-based weight loss program, something that has not been widely observed. It acts on previous men's health intervention research using football in Scotland (Wyke et al., 2015) by successfully engaging hockey fans in Canada. Finally, it encourages further research initiatives, namely a full-scale trial of Hockey FIT across Canada.

5.4.7 Ethics

This study was approved by Western University's Research Ethics Board. I, along with the rest of the Hockey FIT research team, made sure to adhere to correct ethical procedures throughout the study. Participants provided written consent and needed clearance from a medical doctor before participating in the study. Any personal identifiers were removed from transcripts, and all computer files pertaining to the study that contained participant information were password protected.

5.4.8 Meaningful Coherence

For a study to achieve meaningful coherence, it must achieve its stated purpose, use methods that align with chosen theories and paradigms, and insightfully connect literature with methods and findings (Tracy, 2010). This study successfully explored the social support given and received by men in the Hockey FIT program that led to positive health outcomes. Focus groups and one-on-one interviews allowed sufficient data to be gathered so that this research aim could be met. The research was completed from a constructivist perspective, where reality is constructed by the researcher. This paradigm aligned well with the research methods, as I was able to interpret what was said by the men and coaches during interviews and focus groups. The literature presented in the literature review pertains to the research and the relevant topics that it encompasses. Furthermore, literature presented in the Discussion chapter provides insight and credibility to interpretations of my findings.

5.5 Study Limitations

Despite the success of the Hockey FIT pilot trials, there were limitations to the study. First, as a pilot study, the number of participants was relatively small, with a total of 40 participants in intervention groups at two sites. Conclusions from this study were drawn from two focus groups comprised of six and eight men from their respective sites, four coach interviews, and 28 one-on-one participant interviews (10 participants did not complete at least 50% of Hockey FIT group sessions and an additional two participants were not available to be interviewed). Having a greater sample size would further validate the findings in this study.

As my study on social support was a sub-study of the larger Hockey FIT project, the project was not initially designed to explore social support that men in the program gave and received. Although support emerged as a topic of discussion in the focus groups, it was not specifically targeted as a topic. Having social support as an intended topic of discussion during focus groups may have generated more discussion around the different types and sources of social support that were experienced. Explicitly introducing social support into the focus groups may have led to bias as men may have been inclined to provide an answer to please the researcher, however. The fact that the social support discussion emerged organically suggests that it was an important factor in the program. Similarly, asking the Hockey FIT coaches about social support during their interviews may have yielded additional data. The coach interview questions were focused on program components and delivery, and although some aspects of social support were mentioned, the coaches did not go into depth about types and sources of support. During the 12-month interviews, questions about support from the Hockey FIT coaches and from friends and family outside of the Hockey FIT group were asked and rich data was collected.

When the Hockey FIT project was designed, the decision was made to de-identify all participants for ethical reasons. This meant that participants who took part in focus groups were anonymized, and one-on-one interviews could not be compared to an individual's success in the program. If participants' interview answers could be compared to their reported physical outcomes, this would provide more insight on how effective

different forms of social support were. For example, if men claimed in their interviews that they did not receive sufficient support at home, and their physical outcomes showed that their health regressed during the maintenance phase, it would open more avenues on the effectiveness of social support. Again, with a small sample size, there would need to be sufficient data to draw these types of conclusions.

5.6 Implications and Future Directions of Research

As suggested by Lubans (2014), this study used the idea of FFIT and adapted it to Canada to create a successful gender-sensitized weight loss and healthy living program for overweight Canadian male hockey fans. Most importantly, this research has the ability to educate men on the health risks of obesity and the benefits of making small, sustainable lifestyle changes. While the larger Hockey FIT study replicated the results of the FFIT trials (Wyke et al., 2015), this study on social support provided new insight on the impact that social support has on the men involved in these sports-based interventions. This program successfully recruited men by tailoring to their love of hockey. Once they were involved in the program, the social support they received helped them to succeed in achieving their lifestyle goals.

Whereas the qualitative analysis in FFIT focused largely on gender roles within the program (Bunn et al., 2016), this study focuses on the multiple facets of social support given and received by the men in the program. It is unique in that it looks not only at the support occurring within the program, but also the support given and received outside of the program. Although many weight loss interventions explore the support exchanged by participants and program deliverers (e.g., Wing & Jeffery, 1999), there are few studies such as this one that observe support from friends, family, and coworkers not involved in the intervention themselves. Support is stronger and more effective when it is constantly provided from multiple sources, so looking at all sources of support rather than focusing on a select few may better illustrate how they affect weight loss during interventions.

In future Hockey FIT studies, social support should be more deeply investigated. This study has displayed the importance of having multiple facets of support during a weight loss intervention. Future research should delve into the different sources of support, and

the prevalence and significance of each. Were participants who were successful in losing weight receiving more support than those who were less successful? How did support differ during the active phase and maintenance phase of the program? Answers to these questions and others could provide insight into which forms of social support are effective in helping men lose weight. These outlets of support could then be targeted in program sessions. The Hockey FIT research team will look to build on the success of this pilot trial to deliver a full-scale randomized controlled trial in junior hockey teams throughout the Canadian Hockey League. Establishing Hockey FIT across the country in junior hockey communities would be instrumental in changing the face of men's health.

Conclusion

This study explored the social support given and received by men in the Hockey FIT program and its effects on health outcomes. Focus groups and interviews were used to collect data from Hockey FIT participants and coaches, and the data was coded using a thematic analysis approach (Ziebland & McPherson, 2006). A constructivist approach was used (Lincoln & Guba, 2000), and Lakey and Cohen's (2000) social cognitive model was used to create a framework and develop major themes. Quotes from focus groups and interviews were used to illustrate each theme, and findings were interpreted by the lead researcher. Tracy's (2010) eight criteria for excellent qualitative research was used to ensure quality throughout the study.

This research illustrated how perceived social support impacted self-esteem, which in turn affected health outcomes. Men received increased support from multiple sources, including from men and coaches in the Hockey FIT group, and from family and peers outside of the Hockey FIT group. The increase in social support was followed by an increase in self-esteem. Men gained self-efficacy, found comfort in the likeness of the men in the Hockey FIT group, and felt that they were beginning to accomplish their goals. The increases in social support and self-esteem allowed the men to eat healthier, increase their physical activity, and build awareness about how to live a healthier lifestyle. The changes that they had made during the active phase had developed into habits that they could sustain throughout the maintenance phase and into their future.

The multiple sources of social support that were utilized by men during Hockey FIT were apparent in this study. It provided a view of how social support impacts male sports-based interventions. With the relatively small sample size, however, we must be careful when drawing conclusions. If Hockey FIT is to expand and continue, repeating this study could broaden and strengthen these results. Although rich data was collected and it yielded important findings, we should strive to dig deeper into the social support given and received during weight loss programs. In the future, these different sources of support should be further explored to find which, if any, hold more importance than others. Additionally, we have suggested that increased social support can positively affect

health outcomes, but can lack of success be attributed to lack of support within the group or outside of the group? If there is a lack of support, how can we successfully increase support within the program as well as outside of it? These are exciting opportunities for future research that will further our understanding of the importance of social support in male-only, sports-based weight loss programs such as Hockey FIT.

I have learned a great deal by partaking in this research project. I learned about the intricacies of qualitative research, and the tremendous attention to detail that must go into data collection and analysis. I learned the importance of doing background research and how it can ease the analysis and writing process. This process also highlighted the male obesity problem in Canada and the need for programs such as Hockey FIT. By creating these sports-based weight loss programs, we can entice men across the country to make sustainable lifestyle changes. Hockey FIT has also taught me that these programs cannot succeed without social support on many different levels. The importance of social support and the impact it can have on men in these programs needs to be known and addressed at the beginning of program design. If we can successfully incorporate social support into these programs – not only from within the program, but from friends and families outside of it as well – we can create successful sports-based intervention programs that can change the state of men's health.

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Appendices

Appendix A. Ethics Approval Form



**Western
Research**

**Western University Health Science Research Ethics Board
HSREB Full Board Initial Approval Notice**

Research Ethics

Principal Investigator: Dr. Robert Petrella

Department & Institution: Schulich School of Medicine and Dentistry/Geriatric Medicine, Western University

HSREB File Number: 106310

Study Title: An Exercise and Healthy Living Program (Hockey Fans In Training) Delivered Through Hockey Clubs for Overweight and Obese Men: A Pilot Pragmatic Randomized Controlled Trial.

Sponsor: Movember Canada

HSREB Initial Approval Date: April 06, 2015

HSREB Expiry Date: April 06, 2016

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Other	Appendix D: Detailed Timeline	2015/01/27
Other	Appendix L: Attendance Record Sheet	2015/01/27
Instruments	Appendix N: 12 Week 12 Month Participant Focus Group Q	2015/01/27
Instruments	Appendix O: Program Exit Interview Q (Non-Completer)	2015/01/27
Instruments	Appendix P: Coach Interview Guide	2015/01/27
Instruments	Appendix Q: Program Observation Document	2015/01/27
Other	Appendix T: Tyze Data Controls	2015/01/27
Other	Appendix U: Sykes Data Control	2015/01/27
Western University Protocol		2015/03/19
Data Collection Form/Case Report Form	Appendix C: Screening Baseline CRF	2015/03/16
Data Collection Form/Case Report Form	Appendix V: Measurement Sessions CRF	2015/03/16
Letter of Information & Consent	Appendix E: Letter of Information	2015/03/16
Instruments	Appendix F: PAR-Q	2015/03/16
Instruments	Appendix G: Health Care Provider Clearance Form	2015/03/16
Advertisement	Appendix R: Hockey FIT Recruitment Poster	2015/03/16
Other	Appendix S: Telephone Script	2015/03/16
Instruments	Appendix M: Participant Feedback Form	2015/03/16
Other	Appendix J: E-Health Suite	2015/03/16
Other	Appendix K: Outcomes & Assessment Procedures	2015/03/16
Instruments	Appendix Ia: Exercise Rx Form	2015/03/16
Instruments	Appendix Ic: Healthy Eating Rx Form	2015/03/16
Instruments	Appendix H: Participant Log	2015/03/16
Instruments	Appendix Ib: Physical Activity Rx Form	2015/03/16



Other

Appendix B: Participant Flow Diagram

2015/03/16

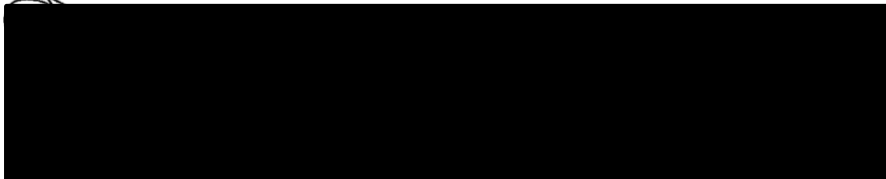
The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the above named study, as of the HSREB Initial Approval Date noted above.

HSREB approval for this study remains valid until the HSREB Expiry Date noted above, conditional to timely submission and acceptance of HSREB Continuing Ethics Review.

The Western University HSREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Guideline for Good Clinical Practice Practices (ICH E6 R1), the Ontario Personal Health Information Protection Act (PHIPA, 2004), Part 4 of the Natural Health Product Regulations, Health Canada Medical Device Regulations and Part C, Division 5, of the Food and Drug Regulations of Health Canada.

Members of the HSREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.



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Appendix B. Ethics Amendment Approval



**Western
Research**

Research Ethics

Western University Health Science Research Ethics Board HSREB Amendment Approval Notice

Principal Investigator: Dr. Robert Petrella
Department & Institution: Schulich School of Medicine and Dentistry\Geriatric Medicine, Western University

Review Type: Expedited
HSREB File Number: 106310
Study Title: An Exercise and Healthy Living Program (Hockey Fans In Training) Delivered Through Hockey Clubs for Overweight and Obese Men: A Pilot Pragmatic Randomized Controlled Trial.
Sponsor: Movember Canada

HSREB Amendment Approval Date: July 31, 2015
HSREB Expiry Date: April 06, 2016

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Instruments	12 week Coach Interview Guide	2015/07/03
Instruments	12 week Focus group topic guide	2015/07/03
Instruments	12 week Program Questionnaire	2015/07/03
Instruments	12 month Program Questionnaire	2015/07/03
Letter of Information & Consent	Coach	2017/07/03
Change in Study Personnel	Addition of Stephanie Muise (Medical Student)	

The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the amendment to the above named study, as of the HSREB Initial Approval Date noted above.

HSREB approval for this study remains valid until the HSREB Expiry Date noted above, conditional to timely submission and acceptance of HSREB Continuing Ethics Review.

The Western University HSREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Guideline for Good Clinical Practice Practices (ICH E6 R1), the Ontario Personal Health Information Protection Act (PHIPA, 2004), Part 4 of the Natural Health Product Regulations, Health Canada Medical Device Regulations and Part C, Division 5, of the Food and Drug Regulations of Health Canada.

Members of the HSREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.



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Appendix C. Ethics 12-month Questionnaire & Interview Amendment Approval



Research Ethics

Western University Health Science Research Ethics Board HSREB Amendment Approval Notice

Principal Investigator: Dr. Robert Petrella
Department & Institution: Schulich School of Medicine and Dentistry\Geriatric Medicine, Western University

Review Type: Full Board
HSREB File Number: 106310
Study Title: An Exercise and Healthy Living Program (Hockey Fans In Training) Delivered Through Hockey Clubs for Overweight and Obese Men: A Pilot Pragmatic Randomized Controlled Trial.
Sponsor: Movember Canada

HSREB Amendment Approval Date: April 08, 2016
HSREB Expiry Date: April 06, 2017

Documents Approved and/or Received for Information:

Document Name	Comments	Version Date
Revised Western University Protocol	Received 2016/03/09	2016/03/08
Data Collection Form/Case Report Form	12-month Program Questionnaire & Interview (Intervention Group Only) - Clean	2016/03/08

The Western University Health Science Research Ethics Board (HSREB) has reviewed and approved the amendment to the above named study, as of the HSREB Initial Approval Date noted above.

HSREB approval for this study remains valid until the HSREB Expiry Date noted above, conditional to timely submission and acceptance of HSREB Continuing Ethics Review.

The Western University HSREB operates in compliance with the Tri-Council Policy Statement Ethical Conduct for Research Involving Humans (TCPS2), the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use Guideline for Good Clinical Practice Practices (ICH E6 R1), the Ontario Personal Health Information Protection Act (PHIPA, 2004), Part 4 of the Natural Health Product Regulations, Health Canada Medical Device Regulations and Part C, Division 5, of the Food and Drug Regulations of Health Canada.

Members of the HSREB who are named as Investigators in research studies do not participate in discussions related to, nor vote on such studies when they are presented to the REB.

The HSREB is registered with the U.S. Department of Health & Human Services under the IRB registration number IRB 00000940.



Appendix D. Recruitment Poster



**IT'S TIME FOR A
GUT-CHECK**



ARE YOU A MAN
AGED 35-65 YEARS OLD?



IS YOUR WAIST SIZE
AT LEAST 38 INCHES?



WANT TO LOSE WEIGHT,
BE HEALTHIER & MORE FIT?



DO YOU WANT TO
HAVE SOME FUN?



**HOCKEY
FANS IN
TRAINING**™

HOCKEYFANSINTRAINING.ORG

GET FIT, LOSE YOUR BELLY & GET BEHIND THE SCENES WITH THE [REDACTED] .. ALL FOR FREE!

Researchers, in conjunction with the [REDACTED] are conducting a research study focused on improving the health of adult male hockey fans through an exercise and healthy living program.

[REDACTED]

OHL PARTNER

[REDACTED]

MAJOR PARTNER



SUPPORTING PARTNERS





38-005 03-31-2015

Appendix E. Focus Group Discussion Points

HOCKEY FIT- 12 Week Focus group topic guide

Introduction

- Aims of group – First, I want to find out what you thought of the HFIT program, how being involved with it has affected your life, and any changes you would like to see made to the program.
- I am simply here as a sort of chairperson to make sure that everyone gets a chance to speak. What you have to say is important to me and the other researchers so please don't be afraid of speaking your mind.
- I will audio-tape the discussion, and the audio recording will be kept private and confidential with no names or ID numbers linking you to the recording. As part of the focus group, others participants may know your identity.
- Questions?

Discussion

- 1) I would like to start by discussing the reasons why you joined the HFIT Program?
 - Specific prompts – what motivated you? What helped you commit to joining?
- 2) How did the program affect your daily life?
 - Specific prompts: please be specific in how you made these changes, and what in the program helped you to make these changes
- 3) How did you feel about the coaches?
- 4) Was there anything you don't think should have been included in the program?
- 5) How did you find the group dynamics? Was there anything about the group that helped the dynamic?
- 6) What kept you coming to the program?

Summary

At end of discussion, summarise what has been said and ask men if there is any thing else they would like to add. Recap the interview process and next steps. Remind them the interview will be transcribed and anonymized

Appendix F. 12-month Participant Interview



Date (dd/mm/yy): ___/___/___



Hockey Fans In Training 12-Month Program Interview

Preamble: The purpose of this interview is to update the Hockey FIT research team on the progress you have made since completing the Hockey FIT program. You will be asked a variety of questions about your experience during the 12 week *active phase* of the program, during the 9 month *maintenance phase* of the program, and also the resources provided to help with maintaining your progress. We will be using this information to improve the program in order to better meet the needs of our Hockey FIT participants and partners. Your completion of this interview is completely voluntary and you will not be audio recorded. There are no right or wrong answers. Upon completion, your interview will be stored in a secure location by the central research team. This interview will take approximately 10-15 minutes to complete.

12 week <i>Active Phase</i> : In-person Hockey FIT coaching sessions	9 month <i>Maintenance Phase</i> : Maintaining changes from the 12 week <i>Active Phase</i>
--	--

Overall Experience

1. How has your experience with the Hockey FIT program affected your health? (Prompt: Thinking about your experience from the start of the program to today).

Eating Habits

2. Thinking about the changes you made to your eating habits during the 12 week *active phase* of the program, which of those changes have you **maintained**?
3. What **challenges** (i.e., setbacks or barriers) have you faced in maintaining the changes to your eating habits?



Date (dd/mm/yy): ___/___/___



- a) Thinking about the 12 week *active phase*, what did you find **helpful** in maintaining your eating habits?
- b) Thinking about the 9 month *maintenance phase*, what did you find **helpful** in maintaining your eating habits?

Physical Activity

4. Thinking about the changes you made to your physical activity levels during the 12 week *active phase* of the program, which of those changes have you **maintained**?
5. What **challenges** (i.e., setbacks or barriers) have you faced in maintaining the changes to your physical activity levels?



Date (dd/mm/yy): ___/___/___

a) Thinking about the 12 week *active phase*, what did you find **helpful** in maintaining your physical activity levels?

b) Thinking about the 9 month *maintenance phase*, what did you find **helpful** in maintaining your physical activity levels?

Maintenance Resources: Events & Technology Tools

6. Events: 9-Month Booster Session & Reunion

Did you attend the 9-month booster session & reunion?

Yes¹

No²

If answered **No**:

a) Please tell me why you could not attend. (too busy, not enough notice, timing)

If answered **Yes**:

b) Did you find the booster session helpful in maintaining your goals? (Prompt: Why or Why not?)



Date (dd/mm/yy): ___/___/___

c) What did you like about the booster session and reunion?

d) How could the 9-month booster session and reunion be improved?

7. Technology Tools: Hockey FIT Tyze Network

a) Did you use the Hockey FIT Tyze Network?

Yes¹

No² (Skip to Question 8)

b) How did you use the Hockey FIT Tyze network (for what purposes)?

c) Was the Hockey FIT Tyze Network helpful for you?

Yes¹

No² (Skip to Question 7e)

d) How was the Hockey FIT Tyze Network helpful for you?

e) How would you improve the Hockey FIT Tyze Network?



Date (dd/mm/yy): ___/___/___

 [Redacted]

8. Coaches Interactions through Tyze & E-mail

- a) Did you find the messages from your coaches helpful in maintaining your goals?
(Prompt: Why or Why not?)

- b) How do you think these messages could be improved in helping you maintain your goals?
(i.e., frequency and/or length of messages, or information provided)

9. Technology Tools: HealthSteps™ Smartphone App

- a) Did you use the HealthSteps™ Smartphone App?

- Yes¹
 No² (Skip to Question 10)

- b) How did you use the App (for what purposes)?

- c) What are three aspects of the App that you found most helpful? (top 3)



Date (dd/mm/yy): ___/___/___
 [Redacted]

d) What are three aspects of the App that could be improved? (bottom 3)

Support Systems: Hockey FIT Staff & Coaches, Hockey Community, Family, and Friends

10. Hockey FIT Staff & Coaches

a) How did you feel about the support you received from the Hockey FIT program coaches and staff? (Prompts: positive/negative)

b) How do you think this support could be improved to help you maintain your goals?

11. Hockey Community

a) Has the Hockey FIT program influenced your perception of the [Redacted]
[Redacted]
 Yes¹
 No² (Skip to Question 12)

b) How has this program influenced your perception of the team(s)? (Prompt: positive/negative)



Date (dd/mm/yy): ___/___/___

- c) How do you think the team involvement could be improved to help you maintain your goals?

12. Family and Friends

- a) Outside of the Hockey FIT staff and coaches, tell me about the support you received after your completion of the program (i.e., assistance or encouragement from family, friends, other participants)?
- b) Has your involvement in the Hockey FIT program had an impact on the your friends or family?
- Yes¹
- No² (Skip to Question 13)
- c) How has this affected your friends or family's lives? (Prompt: health, social interactions,

13. We have completed the questionnaire. Do you have anything further you would like to add or let the research team know?

Thank you for your time in completing this interview. Your feedback is greatly appreciated and we wish you the best of luck in the future!

Curriculum Vitae

Name: Ryan Scott

Post-secondary Education and Degrees: Mount Allison University
Sackville, New Brunswick, Canada
2011-2015 Hon. BSc.

Western University
London, Ontario, Canada
2015-2017 MSc. (in progress)

Related Volunteer Experience: Wild Toads Research Group
Mount Allison University
2014-2015

HealthSteps Research Team
Western University
2015

Discovery Day – Assistant
Western University
2017

Related Work Experience: Math Tutor
Mount Allison University
2013

Teaching Assistant
Western University
2017

Publications: Blunt, W., Gill, D. P., Sibbald, S. L., Riggin, B., Scott, R., Pulford, R., Danylchuk, K., Hunt, K., Gray, C. M., Wyke, S., Bunn, C., & Petrella, R. J. (2017). Acceptability and optimization of the Hockey Fans in Training (Hockey FIT) program for overweight and obese male hockey fans in Canada. *Manuscript submitted for publication.*