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CO-ACTIVE LIFE COACHING AS A TREATMENT FOR PEOPLE WITH OBESITY

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CO-ACTIVE LIFE COACHING AS A TREATMENT FOR PEOPLE WITH
OBESITY

(Spine title: Co-Active Life Coaching as a Treatment for People with Obesity)

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by

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Graduate Program in Kinesiology

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts

Faculty of Graduate Studies
The University of Western Ontario
London, Ontario, Canada

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Co-Active Life Coaching as a Treatment for People with Obesity

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ABSTRACT

Purpose: To assess the impact of one-on-one Co-Active Professional Life Coaching on the body composition, self-esteem, self-efficacy, physical activity, and functional health status of adults with obesity [body mass index (BMI) values greater than 30].

Methods: This one-group, pre-test post-test study targeted a sample of 20 men and women aged 35-55 who had a BMI equal to or greater than 30. Participants engaged in six to eight 35-minute telephone sessions with a Certified Professional Co-Active Coach (CPCC). During these sessions, the participant called the CPCC and together they explored what changes the subject wanted to make in his/her life, and how to make the desired changes reality. The researcher recorded height and weight measurements to calculate BMI, waist circumference and administered the Short Form 36-item Functional Health Status Scale, the adapted Godin Leisure Time Activity questionnaire, the International Physical Activity questionnaire, a series of self-efficacy questionnaires, and the Rosenberg Self-Esteem Scale at baseline and at the end of the 8-week treatment. Paired t-tests were used to analyze the data.

Results: Significant decreases in waist circumference and significant increases in self-esteem and functional health status were experienced by participants in this study. No significant changes in body mass index (BMI), self-efficacy, or physical activity occurred. Qualitatively, participants reported in the exit interview that they started to increase the amount of physical activity in which they engaged on a daily basis. At the end of the coaching treatment, participants reported they were feeling more optimistic about making healthier choices, and started engaging in healthful actions. Participants also judged themselves more gently and experienced greater self-acceptance.

Discussion: Co-Active life coaching was associated with a decrease in waist circumference, and an increase in self-esteem and functional health status. These findings are important because waist circumference is directly associated with all-cause mortality in middle aged adults and increased self-esteem and functional health status are inversely related with weight loss. Participants at the end of the treatment felt that they now had the tools necessary to maintain daily physical activity and proper nutrition.

Keywords: Co-Active life coaching, body mass index, physical activity, waist circumference, self-esteem, self-efficacy, functional health status

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CHAPTER I

INTRODUCTION

With a society fixated on television, Internet, video and computer games, and fast food restaurants, it is not a surprise that from 1978/79 to 2004 the percentage of obese adult Canadians rose from 14% to 23% (Statistics Canada, 2004). Increases in sedentary lifestyles and food consumption are just two factors that contribute to the staggering statistic that 5.5 million adult Canadians (ages 20 to 64) are obese (Starky, 2005). Given that genetics accounts for 25-40% of an individual's body weight (LeBlanc, 2003), and the increase in obesity has been more dramatic than genetic changes over the past 26 years, Stice, Presnell, and Shaw (2005) suggested that psychosocial factors play an important role in this epidemic. It is critical to assess all treatment alternatives to help decrease adult obesity in Canada (LeBlanc, 2003) – one such treatment is Co-Active life coaching (Whitworth, Kimsey-House & Sandahl, 1998).

Purpose

The main objective of this study was to examine the effectiveness of Co-Active life coaching as a treatment for obesity. The secondary purpose was to assess life coaching's impact on an individual's self-esteem, self-efficacy, functional health status, and physical activity behaviour.

Although there is considerable research available emphasizing the obesity epidemic facing Canadians, there are very few treatments that are effective in reducing obesity and maintaining change (Linde et al., 2004; Skender et al., 1996). Because Co-Active life coaching is grounded on theory related to health behaviour change (Irwin & Morrow, 2005), it appealed to the researcher to explore its effectiveness as a treatment for

obesity. An operational definition of obesity, the specific rationale, and the methods are delineated following a review of the obesity and coaching literature.

Operational Definition of Obesity

An individual is considered *obese* when his/her body mass index (BMI) is greater than or equal to 30 kg/m^2 . Obesity is "...caused by an imbalance between energy intake and expenditure" (Janssen, Katzmarzyk, Boyce, King, & Pickett, 2004, p. 365). Body mass index is calculated by dividing weight (in kilograms) by height (in metres squared). All Canadian provinces and the World Health Organization use BMI as a weight classification system to assess whether an adult is obese (Starky, 2005). There are three classes associated with obesity: Class I includes a BMI of 30.0 to 34.9 kg/m^2 ; Class II includes a BMI of 35.0 to 39.9 kg/m^2 ; and Class III includes a BMI of greater than or equal to 40 kg/m^2 (Starky). All three classes were eligible to participate in the current study.

There is substantial research that suggests waist circumference be used as an index of obesity-related health risks because it is an effective predictor of chronic disease and premature mortality (Katzmarzyk, 2004; Starky, 2005; Tremblay, Katzmarzyk, & Willms, 2002). A waist circumference of greater than or equal to 102 cm for a man and greater than or equal to 88 cm for a woman indicates an increased risk of health problems (Douketis, Paradis, Keller, & Martineau, 2005). Both BMI and waist circumference were used to classify obesity levels in the current study.

Rationale and Hypotheses

Life coaching is a relatively new practice that has been gaining attention and acceptance by a variety of professions. Although most often associated with business

executives, life coaching has also been utilized within the health field in areas such as mental health (Grant, 2003), fitness (Tidwell et al., 2004), diabetes (Joseph et al., 2001), attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD) (Ratey, 2002; Ratey & Jaska, 2002), and cancer (Brown et al., 1999). There are numerous coaching training schools and each school proposes slight and not-so-slight differences in the skills and methods used to foster client changes. To date, health-related studies of coaching have not focused on any specific coaching method. Thus, the reliability and validity of the generic term “coaching” is undetermined. The Co-Active coaching method (Whitworth, Kimsey-House, & Sandahl, 1998) has been studied from a health-behaviour theoretical basis (Irwin & Morrow, 2005), but no studies to date have evaluated the behavioural impact of the Co-Active coaching method using a prospective, before and after, research design. This study was designed specifically to evaluate the Co-Active coaching method on health-related- behaviour-change related to obesity.

Considering the potential advantages Co-Active life coaching brings to health-related behaviour change, it was hypothesized that after the eight-session life coaching treatment, participants’ BMI and waist circumference would decrease; and physical activity, functional health status, self-esteem, and physical activity and nutrition self-efficacy would increase.

CHAPTER II

REVIEW OF OBESITY LITERATURE

Researchers have found that obesity impacts immediate and future health problems (e.g., hypertension, diabetes, myocardial infarction, psychosocial difficulties) (Starky, 2005), and the Canadian health care system (Trakas, Lawrence, & Shear, 1999). Other factors contributing to and/or impacting the obesity epidemic include: physical inactivity and food consumption (Janssen et al., 2004); quality of life (QOL) (Jia & Lubetkin, 2005); and psychological problems (e.g., depression, low self-esteem) (Linde, et al., 2004). Thus, the benefits of finding a solution to these obesity issues in Canada would help individuals and the country as a whole. A review of the literature pertaining to the above-listed obesity impact factors that may ultimately be affected by Co-Active life coaching is presented below.

Health Complications of Obesity

Obesity contributes to a wide range of different illnesses, such as type 2 diabetes, hypertension, respiratory disorders, myocardial infarction, gallbladder disease, and some forms of cancer (Starky, 2005). Obesity has short- and long-term effects that can influence the cardiovascular system, including impaired endothelial function, diminished arterial distensibility, and increased risk of atherosclerosis in early adult life (Whincup & Deanfield, 2005). Researchers have suggested that cardiovascular consequences of obesity are cumulative: the length of time one is obese is an important risk factor all on its own (Whincup & Deanfield). As Aaron, Fergusson, Dent, Chen, Vandemheen, and Dales (2004) reported, longer-term obesity can impair normal lung physiology and is associated with reduced chest wall compliance. It is not surprising then, that obese

patients complain of more dyspnea on physical exertion (Aaron et al.). The literature suggests that there is an association between obese women and asthma. However, the reason this association exists is not yet clear (Aaron et al.).

Decreasing an individual's waist circumference and BMI may reduce the potential risk factors associated with obesity (Aaron et al., 2004; Douketis et al., 2005; Whincup & Deanfield, 2005). For example, a patient with type 2 diabetes and hypertension may increase glycemic and blood pressure control and decrease drug therapy requirements (Douketis et al.).

Economic Cost

Many researchers agree that obesity and its associated illnesses have an enormous impact on the health care system (Birmingham, Muller, Palepu, Spinelli, & Anis, 1999; Katzmarzyk, P., Glendhill, N., & Shephard, R., 2000; Starky, 2005; Trakas et al., 1999). Research used to assess the economic cost of obesity tends to use a prevalence-based approach (Birmingham et al.; Starky). The economic burden can be classified into two categories: direct and indirect costs. Direct costs are those that deal with the cost of treatment, care, and rehabilitation due to obesity (Starky). Indirect costs "...include reductions in economic productivity stemming from the poorer health, absenteeism, disability, and premature mortality that are a result of overweight or obesity" (Starky, p. 7).

Katzmarzyk, Glendhill, and Shephard (2000) conducted a Canadian study that assessed the economic burden of physical inactivity, a substantial contributor to the obesity epidemic. They calculated summary relative risk (RR) and the population-attributable fraction (PAF). The PAF was then applied to the total direct health care

expenditures for 1999 and to the number of deaths in 1995 associated or caused prematurely from physical inactivity (Katzmarzyk et al.). They found that about \$2.1 billion, or 2.5% of the Canadian health care budget was attributed to direct costs of physical inactivity. Katzmarzyk and Janssen (2004) estimated that \$4.3 billion dollars from the Canadian health care budget was apportioned to direct and indirect costs of obesity in 2004 (Katzmarzyk & Janssen). In 2000/01 GPI Atlantic, a non-profit research organization, commissioned several reports to ascertain figures of obesity's impact on each province's health care budget. Ontario alone accounted for a direct cost of 5.3% to the provincial health care budget and an indirect cost of 2.4 million dollars to the provincial health care budget (Starky, 2005).

Physical Activity and Food

With a plethora of evidence available, it is well known that physical activity has invaluable health benefits. For example, a physically active lifestyle helps to maintain healthy bones and muscles, control weight, and decrease cardiovascular risk factors (Luke et al., 2004). For the purpose of this review, "physical activity is defined as 'any bodily movement produced by skeletal muscles that result in energy expenditure'" (Luke et al, p. 261). Physical activity is considered a behaviour under the control of the individual. The following are well-established, research-supported factors contributing to the decrease in physical activity and increase in excessive eating: television; video games; computers; and Internet surfing (Luke et al.; Tremblay & Willms, 2003). Adults, peers, schools, primary care physicians, environmental factors, and the fast food industry all affect the amount and level of physical activity in youth and then ultimately in adults (Luke et al.). Therefore, by understanding the factors that contribute to the decreased

levels of physical activity and increased levels of food consumption, change can start to take place.

With regard to parental influences, researchers have found that as long as one parent is physically active, then there is an increased likelihood that his or her child will also participate in some form a physical activity. There is a negative correlation between overweight parents and physical activity levels among their children (Luke et al., 2004; Tremblay & Willms, 2003). Parents are primary role models and their children may ultimately replicate their behaviour.

Peer groups become more influential than parents in young adult behavioural decisions (Luke et al., 2004). As males and females approach young adulthood, the amount of physical activity in which they participate decreases substantially (Plotnikoff, Bercovitz, & Loucaides, 2004). Females, in particular, become increasingly less active. For example, by the time they are 13 years of age, females are 22% less active than when they were pre-teens. And, by the time they reach 19 years of age young women's activity compared to their pre-teen years decreases by 60% (Luke et al.). The lack of school-based physical education programs also contributes to the decrease in physical activity students receive (Luke et al.). Ontario high school students have met their one physical education class requirement by age 14 or 15 (Luke et al.).

Primary care physicians are integral in educating patients and parents on age-specific recommendations regarding physical activity (Luke et al., 2004). However, physicians indicated that inadequate time, knowledge, and experience were barriers to properly promoting physical activity. Physicians' training in diet and exercise is typically

minimal. Only 36% to 48% of physicians take the time to direct patients in proper exercise habits (Luke et al.).

Environmental conditions also play a role in physical inactivity (Struber, 2004). Canada experiences cold winters which, for some, decreases an individual's motivation for and subsequent level of physical activity (Merill, Sheilds, White & Druce, 2005).

Contributing to this combination is the fast food industry. In its attempt to attract more customers, fast food chains feature ever-increasing portions using the get-more-for-your-dollar system and thereby bring eaters into their restaurants through the 'convenience' of 'drive-thrus'. It is no surprise that obesity levels are rising with an increase in portion sizes and resulting increases in caloric intake from fat and added sugar (Luke et al., 2004). Research suggests that increasing certain food groups (e.g., fruits and vegetables) and decreasing harmful food groups (e.g., soft drinks, sugar, processed foods) aids in reducing body weight (Drapeau, Despres, Bouchard, Allard, Fournier, & Leblanc, et al., 2004).

Quality of Life

Research confirms that increased BMI decreases health-related quality of life (HRQL) (Jia & Lubetkin, 2005; Pinhas-Hamiel et al., 2005). Although increased BMI does not necessarily negate decreased levels of social and emotional quality-of-life, it does appear to affect HRQL (Pinhas-Hamiel et al.). Implementing a healthier diet and physical activity have been shown to improve HRQL (Hassan, Joshi, Madhavan, & Amonkar, 2003).

Psychological Component

Perhaps the most underestimated consequences of obesity are the psychological problems that contribute to and result from obesity. Psychological problems associated with obesity include negative self-esteem, increased anxiety, and elevated depression levels (Warschburger, 2005). Obese adults are less likely to marry, and have lower household incomes than non-overweight adults (Gortmaker, Must, Perrin, Sobol, & Dietz, 1993). Because the increase in obesity has been so dramatic over the past 20 years, it has been reported that psychological rather than biological factors are primarily responsible for this trend (Stice et al., 2005). Negative attitudes towards those who are obese are accepted in mainstream society and, in some cases, encouraged (Wang, Brownell, & Wadden, 2004). Society often views obesity as a condition that is the fault of the obese individual (Wang et al.). Wang et al. examined the stigma of obesity and overweight individuals. They found that those who were obese had negative attitudes towards others who were obese and believed that fat people were lazier than thin people. These researchers demonstrated that even obese adults believed the stigma associated with obesity.

Linde et al. (2004) suggested that women, more often than men, are affected by depression due to obesity (Linde et al.; Hasler et al., 2005). Increased incidence of depression has been linked to low weight-control self-efficacy, and reduced self-esteem. A study conducted by Linde et al. found that women diagnosed with depression lost half as much weight as their non-depressed counterparts. It should be noted that it was unclear in this study if the decrease in weight loss was due directly to depression or the side effects of the medication prescribed (Linde et al.). Depression in women predicts a

decreased ability to lose weight (Linde et al.). There is evidence that depressive symptoms before the age of 17 predict increased weight levels in women (Hasler et al.). Also, increased consumption of carbohydrates and fatty foods has been linked to depression in youth and this dietary behaviour may continue into adulthood (Hasler et al.).

It is well documented that self-esteem is lower in obese adults compared to non-obese individuals (Ackard, Neumark-Sztainer, Story, & Perry, 2003; Luke et al., 2004; Starky, 2005). In some cases, low self-esteem corresponded with increased binge eating, which ultimately resulted in increased weight gain (Ackard et al.). The media contributes to this lack of self-esteem and low body image (Irwin & Tucker, 2005). Women and men portrayed on television are often thin, muscular, and physically attractive, a reflection of increased societal pressure to be gorgeous. Men and women then attempt to emulate these images depicted in the media thereby fostering over-eating and eating disorders (Irwin & Tucker). Overeating is associated with body dissatisfaction and low self-esteem (Ackard et al.). Warschburger (2005) reported that obese individuals have decreased self-esteem.

Increased self-efficacy is an important determinant of positive health behaviour change (Carron, Hausenblas & Estabrooks, 2003; McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003). Self-efficacy is an individual's belief of his/her ability to complete successfully a given task (AbuSabha & Achterberg, 1997). Self-efficacy is situation specific in that self-esteem is an individual's general feeling toward his/herself (Donnelly, Eburne, & Kittleston, 2001). If individuals perceive that they are capable of completing a given task, they are more likely to engage in that task. Efficacy beliefs play a vital role in the initiation and maintenance of physical activity (Carron et al.).

Interventions

There have been a wide variety of different studies examining methods to decrease weight and increase healthy bodyweight maintenance. A study by Byrne, Cooper, and Fairburn (2003) examined the differences between those who lost weight and maintained their weight (Maintainers) compared to those who lost weight but did not maintain this loss (Regainers). Five cognitive factors that differentiated Maintainers from Regainers were identified: (a) goals; (b) importance of shape and weight for self-evaluation; (c) vigilance; (d) dichotomous thinking; and (e) coping with perceived negative life events. Regainers were never satisfied with their weight and shape even if their goals were met. Maintainers were less concerned with their weight and shape directly, but concentrated on the health benefits overall. Maintainers were more vigilant – the benefits of weight loss outweighed the effort involved. Unlike Regainers, Maintainers did not see weight and eating as necessarily connected. They believed that sometimes ‘things happen’ and eating might exceed the amount of physical activity achieved that day. Finally, Maintainers were able to avoid returning to old habits in tough situations – they did not use food to regulate mood. Understanding the difference between Maintainers and Regainers aids researchers in tailoring interventions that specifically target characteristics that impede behaviour change.

A systematic review conducted by Glenny, O’Meara, Melville, Sheldon, and Wilson (1997) found many studies wherein both cognitive therapy and behavioural therapy helped to decrease weight. However, many participants in these studies had difficulty maintaining the weight loss after a certain period of time (Glenny et al.). A study conducted by Skender et al. (1996) examined the difference among three

behavioural treatments of obesity: diet, exercise, and a combination intervention. The researchers found that there was no immediate difference among the three groups. However, at the one-year follow-up, the diet-only and exercise-only groups regained weight. This study emphasized the need to find interventions that minimize relapse and promote both exercise and healthy diet.

Ciliska (1998) evaluated two non-dieting interventions for obese women by measuring self-esteem, body dissatisfaction, and restrained eating patterns. The two arms of the intervention included a psycho-education group in which participants received both cognitive therapy and information about obesity, and the education only group in which participants received a lecture style presentation once a week for 12 weeks. The education sessions included information on etiology and dieting implications to cultural imperatives for women and effects of dieting on emotional health. The psycho-education treatment had a greater impact than education only on reducing body dissatisfaction, increasing self-esteem, and decreasing restrained eating. Findings from this study support the rationale for studying the effect of Co-Active life coaching as a treatment for obesity and increasing self-esteem. Co-Active life coaching does seem to be grounded in behaviour change theories, such as social cognitive theory and the theory of reasoned action (Irwin & Morrow, 2005). There are no studies to date that have examined Co-Active life coaching as a form of obesity treatment.

Life Coaching

Life coaching, a process through which a qualified 'coach' mentors clients toward achieving their goals, has received increased attention and its potential for fostering health-related behaviour changes is strong (Irwin & Morrow, 2005; Vale, Jelinek, Best, &

Santamaria, 2002; Ratey, 2002). Current research has revealed that Co-Active coaching, a particular style of life coaching, is grounded in health-behaviour theory and is, in fact, an effective tool for putting theory into action (Irwin & Morrow). Although coaching's potential for fostering meaningful behaviour change has been underscored, and the obesity epidemic in Canada has been well publicized, utilizing coaching as a method for treating obesity is a never-before studied phenomenon.

The current study used the principles set out by Co-Active life coaching (Whitworth et al., 1998). Using the Co-Active model, the coach and client relationship is unique in that the client is the 'expert' and is not presumed to be broken, but 'naturally creative, resourceful and whole'. In turn, the client is perceived by Co-Active coaches to be the expert in his/her life. The coach's job is to help the client find answers while practising self-management of the coach's own thoughts, opinions, and beliefs. As a result, the coach works to deepen the client's learning and/or put into practice some action that the client chooses (Whitworth et al.).

The client's agenda is the centre of the Co-Active model. The coach works to ensure that the focus remains on what the client outlines as important. At the start of the coach/client relationship, a designed alliance is formed. This is where the coach and client spell out the terms of their relationship and delineate the client's agenda. This client-coach relationship is based on trust and honesty. It is the coach's responsibility to use the skills learned through training – intuition, listening, and curiosity – in every session. There are three principles of Co-Active coaching: *fulfillment*, *balance*, and *process*. The Co-Active coach uses these three principles to maximize the client's

potential in fulfilling his/her life's purpose. For a full review of the Co-Active coaching technique, please refer to Whitworth et al. (1998).

Two theories demonstrated to have relevance to Co-Active coaching and relevance to health behaviour change include Social Cognitive Theory and the Theory of Planned Behaviour (Irwin & Morrow, 2005). Although Co-Active coaching is considered atheoretical by its creators (Whitworth et al., 1998) and was founded on practice, it is important to recognize that it is supported by theories that promote behaviour change. For a review of the proposed theories and their application to Co-Active coaching, please refer to Irwin and Morrow.

CHAPTER III

METHOD

Design and Procedure

This study was a one-group pre-test post-test design. The researcher recruited male and female participants between 35-55 years old. Postings at local physicians' offices (Appendix A) and a newspaper advertisement in the *The Londoner* (Appendix B) were used for recruitment. Interested participants telephoned the research assistant who determined the participants' eligibility using a qualifying questionnaire (Appendix C). Participants were eligible to participate in the study if they: were between the ages of 35-55; had a self-reported height and weight that produced a body mass index (BMI) value of 30 or greater; a waist circumference of greater than or equal to 102 cm for a man and greater than or equal to 88 cm for a woman; spoke English fluently; and were not under a physician's care for any co-morbidities. The first 20 interested participants who met the eligibility requirements and confirmed their interest in participating became the study participants. The nature of the study and coaching were explained to the potential participants including the fee of \$20.00 per session. The Co-Active coaching model requires investment on behalf of each participant; a financial investment helps to create a sense of personal buy-in, which translates into participants showing up for their appointments on time and doing the work they commit to accomplishing during the sessions. Typically, this includes a financial investment of \$80.00 - \$120.00 per session per person. However, to increase the opportunities for subjects to engage in the study, the fee was reduced to \$20.00, an amount identified as sufficient to facilitate a sense of investment/buy-in and yet not too large an amount to prevent many people from

participating. Unbeknown to participants when they paid the fee, the money was returned to participants at the conclusion of the treatment. Ethical approval for this study was received by the University of Western Ontario's office of Research and Ethics (Appendix D).

During the initial session, participants met with the researcher individually in Elborn College at The University of Western Ontario. All participants signed a consent form (Appendix E) before engaging in the study. The researcher provided participants with an information letter (Appendix F), consent form, and explained the nature of coaching and measured each participant's height, weight, and waist circumference. Participants filled out: the 36-item short-form (SF-36) Health Survey (Deville, 2004) (Appendix G); the Rosenberg Self-Esteem Scale (Rosenberg, 1989) (Appendix H); the adapted Godin Physical Activity Questionnaire (Godin & Sheppard, 1985; Irwin, 2006) (Appendix I); the International Physical Activity Questionnaire (IPAQ) (Appendix J); and three self-efficacy questionnaires measuring nutrition self-efficacy (Appendix K); self-efficacy barriers to physical activity (Appendix L); and tasks in physical activity self-efficacy (Appendix M). All participants met with the researcher for a 20-minute one-on-one semi-structured interview (Appendix N). This interview was audio-taped and transcribed verbatim. The interview information was used to assess qualitatively experiences associated with being obese and the effect of these experiences on their lives. The following are the two main questions that were asked during the pre-interview: What is the impact of obesity on your life? How would your life change if you were not obese? The following are two main questions that were asked during the post-interview: What have you learned from your coaching experience? What actions have you taken and do

you attribute those actions to coaching? Member checking as described by Guba and Lincoln (1989) was used after each question to ensure the researcher accurately understood the information presented. After this interview, each participant met with the Certified Professional Co-Active Coach (CPCC) for one hour for their first and only face-to-face session where any remaining questions about coaching were answered and general information about the participants was collected. Two CPCCs donated their time for this study and were not involved in the data collection or theme-generating phase of the study. The researcher then scheduled the remaining 35-minute telephone sessions. Each participant received one coaching session a week, unless an appointment was missed. Missed appointments were rescheduled if possible. The average number of sessions each participant received was 7 (range 6-8) spanning 10-12 weeks. During these sessions, participants phoned the CPCC and addressed any issues on which (s)he wanted to focus. The majority of questions asked by the CPCCs were unscripted open-ended questions, a characteristic of the Co-Active coaching model. As per the model's key principle, it was assumed that the client "knew" all the answers; the coach helped guide the client to those answers using a variety of techniques. Some of those techniques included: asking powerful questions, championing, holding accountabilities, and experiencing what the client felt in the moment (for a full review of the Co-Active coaching technique, please refer to Whitworth et al., 1998). The issues discussed during each session were dependent on the client and may or may not have included anything to do with their obesity and associated issues. Every two weeks during the treatment, participants came to the University to have their weight measured.

At the conclusion of the study, the same body composition, quality-of-life, self-esteem, self-efficacy, and physical activity measures were administered. One-on-one interviews took place after the treatment to assess participants' views and experiences with the coaching treatment.

Participants

A sample of 20 male and female adults participated in this treatment examining the effects of Co-Active life coaching as a treatment of obesity. See Table 1 for a complete summary of the study participants' demographic information.

Table 1

Demographic Information of Life Coaching and Obesity Participants (n=18)

Demographics	#
Gender	
Male	2
Female	16
Participant Age	
35-39	4
40-44	7
45-49	3
50-55	4
Annual Family Income	
\$0-\$24,999	1
\$25,000-\$59,999	7
\$60,000-\$99,000	8
≥\$100,000	2
Highest Education Level Completed	
High School	10
College	4
University	4
Current Employment Status	
Part time	4
Full time	13

No paid employment	1
Estimated Number of Years Participants Self-Described as Obese	
1-4	2
5-9	3
10-14	2
≥ 15	11
Number of Children	
1	4
2	4
3	6
4	2
None	2
Parental Status	
Single-Parent	5
Double-Parent	11
Common-Law	1
Ethnicity or Self-Identified Cultural Group	
Caucasian	16
Italian	2

The coaches in this study were not privy to data collection and participants were told this at the beginning of the treatment to decrease social desirability. Two participants left half way through the treatment (one from each coach), leaving a final sample of 18. Both participants reported having busy lives and were unable to schedule weekly coaching sessions, and one of these participants felt that coaching was not right for her at this point in her life.

Measures

BMI is one of the most common measurement tools to assess whether an individual is obese. The calculation requires an individual's height and weight. Because BMI is not always an accurate representation of health risks (Kopelman, 2000), waist circumference was also measured. Waist circumference is a good predictor of health risks such as high blood pressure and diabetes (Katzmarzyk, 2004; Starky, 2005; Tremblay, Katzmarzyk, & Willms, 2002).

The Rosenberg Self-Esteem Scale (Rosenberg, 1989) is an established and validated ten-item self-report measure of global self-esteem. The scale has high reliability with alpha reliability coefficients ranging from .77 to .88 (Blascovich & Tomaka, 1993; Rosenberg, 1986). The items are answered on a four-point Likert scale and range from strongly agree to strongly disagree.

The barriers and task self-efficacy questionnaires were adapted from McAuley and Mihalko's research (1998). The barriers self-efficacy questionnaire is a 12-item measurement tool with a previously measured alpha reliability coefficient of 0.92. The task self-efficacy is a 4-item tool on which participants indicate whether they were 0-100% confident they could perform the described task with an alpha reliability coefficient

of 0.95 (McAuley & Mihalko, 1998). The nutrition self-efficacy tool was created by the researchers of the current study and follows the format of the barriers and task questionnaires. It is a 10-item scale on which participants indicate from 0-100% their level of confidence at completing the described task. The alpha coefficient for this measure at pre-treatment was 0.73 and 0.86 post-treatment.

The SF-36 is an established and validated short form measure of generic health status in the general population with a previously measured alpha reliability coefficient of 0.8 (Jenkinson, Coulter, & Wright, 1993). This questionnaire consists of 36 questions that yield an 8-scale profile of functional health and well-being.

The established and validated International Physical Activity Questionnaire (IPAQ) (Craig et al., 2003) was developed to provide a physical activity instrument that could be used internationally. There is a long and short version and for the purpose of this study, the short version was used to help reduce the length of time participants spent filling out questionnaires. This questionnaire is able to assess leisure, domestic, transport, and work related physical activity. The IPAQ categorizes participants into low, moderate, and high levels of physical activity. When the IPAQ was validated against the Computer Science and Application's Inc. (CSA) accelerometer, Craig et al. (2003) found, "...80% of the estimates showing agreement coefficients of at least 70%..." (Craig et al., 2003, p. 1387).

The established and validated adapted Godin Leisure Time Activity Questionnaire (Godin & Sheppard, 1985; Irwin, 2007) asks participants to recall the amount of physical activity in which (s)he participated during a seven-day period. Physical activity is divided into strenuous, moderate, and mild categories. For each type of physical activity,

participants are asked to record how many days per week, how many 10-15 minute blocks and how many 30-minute continuous blocks of physical activity in which they participate. In a validation study by Irwin (in press), the Adapted Godin Leisure Time Activity Questionnaire was deemed suitable as a physical activity measure with an alpha reliability coefficient of 0.95 for “strenuous” activity and an alpha reliability coefficient of 0.87 for “moderate” physical activity (Irwin, 2007).

Data Analysis and Interpretation

BMI was calculated by the researcher who inputted each participant’s height and weight into the Centres for Disease Control and Prevention’s (CDC) online BMI calculator (CDC, 2004). The same digital scale was used for each participant at every measuring time. Waist circumference was also measured by the researcher who used the same measuring tape for every participant both pre- and post-treatment. Participants shifted their shirts slightly to expose their belly buttons, the location where the measuring tape was placed.

The Rosenberg Self-Esteem Scale (Rosenberg, 1989) was scored by summing the ratings assigned to each item, making sure to reverse score the positively reversed items. Scores ranged from 10-40 with the higher score indicating higher self-esteem.

The SF-36 (Deville, 2004) has pre-assigned values to each question. Once the SF-36 scale was completed, questions were grouped into eight categories and the average was taken for each category. The averages were combined to produce the final value. A higher score defined a more favourable health status.

The number of minutes and the number of days in which participants engaged in mild, moderate, and strenuous physical activity were recorded by simple summation on the adapted Godin Leisure Physical Activity Questionnaire.

The IPAQ overall total physical activity score can be computed by adding up the metabolic equivalents (METS)/week for each type of physical activity. Individuals are categorized in the “high” category if they participate in at least moderate physical activity for an hour or more per day; “moderate” if they engage in half an hour of moderate physical activity most days; and “low” if they do not fit in the other two categories. The current study assessed changes in overall scores from pre-to-post-treatment.

For all three of the self-efficacy questionnaires, participant scores were tabulated by summing the percentages given to each question, and dividing by the total number of questions, as described by McAuley and Mihalko (1998). The higher the final score for barriers self-efficacy indicated a higher level of self-efficacy for overcoming barriers in physical activity. Higher final scores for task self-efficacy indicated a higher level of self-efficacy for achieving difficult tasks in physical activity. Higher final scores for nutrition self-efficacy indicated a higher level of self-efficacy for overcoming nutrition barriers in everyday life.

Inductive content analysis, as described by Patton (1987), was performed on the one-on-one interviews implemented at the beginning and end of the treatment. This technique was used to identify main themes that emerged from participant answers regarding obesity, their effect on an individual’s life, and participants’ experiences with the coaching treatment. The researcher and another CPCC, who was not in any way associated with the current study, analyzed the transcripts. The main purpose of the one-

on-one interviews was to gain qualitative information on the subjective experience of living as an obese adult and his/her experience with coaching after the treatment. No names were used in data analysis and presentation; only themes were presented to ensure participants' confidentiality.

The two participants who left the treatment were excluded from analysis. Gender was not a criterion for selection because the researchers did not anticipate any differences in gender. However, the majority of participants were female. To determine a large effect, as defined by Cohen (1998), the effect must be observable to the participants receiving the treatment. A total sample size of 20 individuals was sufficient to detect the hypothesized large effect ($r^2=.25$) of a two-level within-subject independent variable more than 95 percent of the time using a .05 alpha level, assuming a within-subject correlation of .30.

Paired t-tests were used to identify any changes in BMI, waist circumference, self-esteem, physical activity, self-efficacy, and functional health status from week one to week eight of the study. The paired t-test works well even for small samples that may not be distributed normally (Weiss, 2002).

CHAPTER IV

RESULTS

The findings are presented in two sections: 1) quantitative and 2) qualitative results. The quantitative results section includes findings for each measure as well as correlations between certain measures. The qualitative results are sub-divided into pre-treatment and post-treatment interviews. The questions posed to participants are summarized at the beginning of each section, followed by the prominent themes which serve as headings within each section.

Quantitative Results

All of the following measures used paired t-tests to evaluate changes from pre-to-post treatment.

Body Composition

Waist Circumference. A statistically significant decrease in waist circumference was observed [$t(17) = 2.34, p = 0.032$] from pre-test (M = 118.73, SD = 17.18) to post-test (M = 115.27, SD = 15.91).

Body Mass Index. Overall, a slight decrease in BMI was noted but was not statistically significant [$t(17) = 1.42, p = 0.172$] from pre-test (M = 40.83, SD = 6.48) to post-test (M = 40.38, SD = 6.02).

Psycho-social Measures

The Rosenberg Self-Esteem Scale. A statistically significant increase in self-esteem was observed [$t(17) = -2.94, p = 0.01$] from pre-test (M = 20.67, SD = 6.79) to post-test (M = 23.83, SD = 6.44).

Self-Efficacy. Barriers to physical activity self-efficacy also increased and was not significant [$t(17) = -1.33, p = 0.20$] from pre-test (M = 47.20, SD = 20.43) to post-test (M = 52.38, SD = 18.32).

Physical activity-related task self-efficacy decreased but was not significant [$t(17) = 2.02, p = 0.06$] from pre-test (M = 80.28, SD = 15.55) to post-test (M = 72.08, SD = 25.48).

Nutrition self-efficacy increased but was not statistically significant [$t(17) = -0.48, p = 0.64$] from pre-test (M = 70.46, SD = 13.36) to post-test (M = 72.02, SD = 14.65).

Overall, there were no statistically significant increases in nutrition self-efficacy or physical activity barriers self-efficacy, or physical activity task self-efficacy.

Quality of Life

SF-36 Functional Health Status. Functional health status increased significantly [$t(17) = -2.89, p = 0.01$] from pre-test (M = 66.33, SD = 19.13) to post-test (M = 75.28, SD = 16.04).

Physical Activity

International Physical Activity Questionnaire (IPAQ). An increase in IPAQ scores was observed but was not statistically significant [$t(17) = -1.12, p = 0.28$] from pre-test (M = 3347.58 MET's, SD = 3169.92) to post-test (M = 4961.54 MET's, SD = 6844.02).

Adapted Godin Leisure Time Activity Questionnaire. The number of days per week a participant engaged in **mild** physical activity decreased and was not significant [$t(17) = 0.37, p = 0.72$] from pre-test (M = 4.0, SD 2.99) to post-test (M = 3.67, SD = 3.18). The number of days per week participants engaged in **moderate** and **strenuous**

physical activity increased but were not statistically significant [$t(17) = -1.50, p = 0.15$] and [$t(17) = -1.67, p = 0.11$] from pre-test (M = 2.92, SD = 2.28) and (M = 1.08, SD = 1.65) to post-test (M = 4.06, SD = 2.65) and (M = 2.06, SD = 2.65), respectively.

The number of **mild** 10-15 minute blocks of physical activity decreased and was not statistically significant [$t(17) = 0.39, p = 0.71$] from pre-test (M = 6.94, SD = 11.31) to post-test (M = 5.53, SD = 8.18). The number of **moderate** and **strenuous** 10-15 minute blocks of physical activity increased and were not statistically significant [$t(17) = -1.18, p = 0.25$] and [$t(17) = -1.45, p = 0.17$] from pre-test (M = 4.69, SD = 6.25) and (M = 1.00, SD = 3.56) to post-test (M = 10.42, SD = 19.84) and (M = 4.17, SD = 11.77), respectively.

The number of **mild** 30 blocks of physical activity decreased and was not statistically significant [$t(17) = 1.52, p = 0.15$] from pre-test (M = 4.22, SD = 5.08) to post-test (M = 1.94, SD = 2.88). The number of **moderate** and **strenuous** 30 minute blocks of physical activity did increase and were not statistically significant [$t(17) = -1.33, p = 0.20$] and [$t(17) = -1.01, p = 0.33$] from pre-test (M = 2.53, SD = 3.10) and (M = 2.03, SD = 3.23) to post-test (M = 3.94, SD = 5.30) and (M = 3.06, SD = 4.58), respectively.

Overall, life coaching did not have a statistically significant effect on physical activity during this 6 to 8 session treatment.

Qualitative Results – Pre-Treatment

In the pre-treatment interview, participants were asked to describe what it was like to be them; what they wanted out of life; what weight represented for them; and what they would have to do in order to obtain a healthy lifestyle. Prior to starting the treatment, many participants revealed that, because of their weight, they found life to be challenging in many ways. The main themes revolved around living a bleak life, longing for companionship, a desire for a healthier self, weight representing success or failure in life, struggling to put knowledge into action, and experiencing food as an addiction. The preceding themes and supporting quotes are discussed below.

A bleak experience of life. For many ($\geq 75\%$ of participants) participants, being an obese person included a bleak experience of life. For example, one participant said, “Well, most of my time I feel depressed. So I feel like there is no joy in my life. And, there’s no hope. Sometimes I wonder why I am even here.” Another participant explained the dislike she had for herself when she said, “I would say, I don’t like me. So in that regard, my life may not be any worse or any better than anyone else’s but I make it more difficult for myself with the way I think.” For these participants, weight was such a powerful influence that it actually determined how they felt about themselves. For example, one participant said, “Unfortunately for me it [weight] defines who I am. So when I am thin I feel really good about myself. When I am heavy, I feel very bad about myself.” Another said, “I think one of the things [about] being overweight [is] it kind of makes me feel like less of a person.” Another participant explained that weight “probably represents anxiety and emotions that I deal with.”

By contrast, two participants explained that being obese did not negatively impact their overall experience of life. One said, “[life is] great. I keep thinking that I must have done something really good in my last life.” The other participant shared how much she liked herself by saying, “[life] is a riot actually. It is fun being me. I like being me.”

Yearning for companionship. Participants wanted to reduce their weight through this treatment but they also yearned for more in life and, in particular, companionship. For example, one participant, who sought companionship said, “I have a wonderful personality and I’m very outgoing, and I’m fun and I have a great sense of humour. So that is fun. But in my brain I suck at relationships, like male relationships, because of my weight.” Another participant said, “I don’t have close friends. I have a lot of acquaintances.” One participant described what she wanted to share with a partner when she said:

I would be with someone that loved and supported what I wanted, what I did, and who I loved also and supported. And [I want someone who] finds life to be challenging and fun and be able to work things out with each other.

Another participant, whose husband died prior to the study, described how she yearned to have her partner back in her life when she explained that to be fulfilled in her life her “[deceased] husband would be back.... I guess that I could have that special person back in my life that I, you know, I cared for.” A yearning to be part of a group was also evident when one participant expressed the desire for, “a more active social life. I would have a family.”

By contrast some participants described using their weight to keep relationships at a distance. One participant explained how she used her weight as “a barrier for me to keep people at arms length.” Another participant, for whom weight had served as a shield to keep people away said, “It sounds so cliché, but it is just one of those things that I am not interested in relationships. I don’t want anyone to be interested in me. I honestly think that is what [my weight] represents.”

Overall, the majority of participants were looking for intimate relationships with people who loved and supported them. They wanted not only to decrease their weight but they expressed a desire for companionship. By contrast, a small minority of participants used their weight to keep relationships away.

A desire for a healthier self. The greatest dream for many participants was a healthy lifestyle inclusive of a decrease in their weight. One participant said, “I would commit 100% to my health, ’cause that is not at the top of the list now.” Another participant said, “I would like to be a lot healthier actually....I just think I’d, I’d just like to feel better about myself as far as physically.” One participant, whose quote exemplified the dream for decreased weight expressed by the vast majority of participants, said:

In my wildest dreams it would probably [be] to feel fulfilled as a person to be able to lose weight because it feels like that is the one part of my life I have no control over, and I would really like to crack that.

By contrast, when participants were asked what life would like look in their wildest dreams, some participants did not even mention a change in weight or a more

healthful lifestyle. One participant opined that her dream would be to win the lottery so that she could travel extensively.

Many participants wanted a healthier life prior to the treatment. They wanted to commit to a plan that would help decrease their weight. However, for a couple of participants, decreasing their weight was not even mentioned when asked about their wildest dreams.

Weight representing success or failure in life. The majority of participants noted that weight was *the* deciding factor on their personal sense of accomplishment. One participant said, “It really represents success or failure. And I haven’t been very successful at maintaining a decent weight.” Another participant explained that her weight “... is tied into success...I feel I am not as successful because I am a heavier weight.” For one participant, being obese represented an overall experience of seclusion regarding aspects of life most important to her. She said:

[Weight] represents a loneliness, a not caring. It represents some kind of isolation. It represents being on the outside. It represents not being included. It represents not being as good as everybody else. It represents an ugliness. It represents failure.

Another participant explained that weight represented “...everything.” She went on to say:

My life, [weight] has ruined my life. Everything. It [has] socially stopped me many, many years ago from pursuing friendships, relationships, everything. It has affected me in every single aspect of my life to the point

that I close myself off because of my weight, which in turn affects me with limited number of friends and activities.

Weight for the majority of participants was closely tied to success and failure and in many cases limited success and increased failures. Weight had such a huge impact on some of the participants to the extent that their associations with weight created intense loneliness and wreaked havoc within many aspects of their lives.

Struggling to put knowledge into action. Most participants were well informed about what they needed to do to accomplish a healthy lifestyle and decrease weight, but struggled to put these steps into action. The steps needed to achieve a healthy lifestyle, as described by participants, incorporated sticking to a plan that included exercise and healthy eating. For instance, one participant described that he was aware of what he needed to achieve a healthier lifestyle when he said:

I would have to say ‘yes’ to committing to exercise six to seven times a week, based on my own experience, exercise is a big factor in my weight maintenance. And, probably saying ‘no’ to [bad] food because I think I use food as solace. Not necessarily good food either.

Another participant explained, “I would have to say ‘yes’ to exercise regularly, ‘yes’ to healthy eating, ‘no’ to eating junk food when I am feeling low or lonely.”

Although the knowledge of what participants needed to do to be healthier was present, action was not taken. For instance, one participant said, “So I think I would have to say ‘yes’ to, to getting myself more exercise definitely. And I do belong to a health club and I keep trying to get there, but I just don’t get there.” Another participant shared his challenge regarding an exercise routine. He said, “I can get focused and I can do it,

but I think what happens is I lose my motivation [to workout].” Making healthy eating choices seemed particularly challenging for participants during times of emotional distress. One participant explained that to reduce her bodyweight she would need to shift her “use” of food. She said that she needed to “[n]ot use food as an emotional fix and trying to console myself with food and think that that is going to fix everything. So I would have to say ‘no’ to those tendencies to use food the wrong way.” Another participant spoke of her struggle to be mindful of behaviours and choices. She stated that she needed:

[m]ore of a realization. Like actually concentrating on what you are actually eating and not doing, and stuff. You don’t realize it, and like you can sit down and you know eat a whole bag of chips and you don’t realize it. That you have eaten the whole bag or something like that.

When participants were asked what they would have to do in order to achieve a healthy lifestyle, many indicated that exercise and proper eating were necessary. Most participants were aware of what they should and should not do to achieve a healthy lifestyle, but felt challenged to put their knowledge into action.

Experiencing food as an addiction. Half of the participants expressed that food was their addiction. One participant described how food was like a drug that she could not stop abusing, “[There is] the eating side in which you emotionally beat yourself up for [the fact] that you wish you could stop eating. It would be so much easier if you were addicted to heroin, or addicted to alcohol.” Another participant spoke about how negative self-talk over powered her good intentions when she said, “And I have this constant thing where my intentions are good but you get this voice that says ‘okay but you can’t do

this.” One participant simply said, “[My eating is] out of control. Just out of control. And [I use] food as a drug.”

Qualitative Results – Post-Treatment

In the post-treatment interview, participants were asked to describe what they learned from the coaching treatment, what actions have been taken since the beginning of the treatment, how they see what they have learned affecting them in the next six months, and anything else they would like to report about the experience. At the end of the treatment, considerable changes were reported in the way participants viewed themselves. The main themes revolved around feeling more optimistic about making healthy choices, judging themselves more gently and experiencing greater self-acceptance, and engaging in healthful actions. The preceding themes are described below.

Feeling more optimistic about making healthier choices. By the end of the treatment, most participants reported that they felt more optimistic about making healthier choices. One participant described how she had not yet made the changes necessary for a more healthful life, but she had the hope that she would eventually make the right choices. She said:

I think one of the biggest things that stuck out to me in the beginning was desperate. I think that desperation has really been replaced with hope, even though I haven't accomplished [a decrease in weight], I have the hope that I can.

Another participant spoke about how she was optimistic that she now had the tools necessary to make positive changes in her life when she said, “I feel like I can make better choices about myself, about the way I feel about myself and that I think I have a better, a little better tools than I had before.” One participant claimed ownership over her

own weight-related choices. She said, “It’s up to me. It’s always been up to me. And, it’s okay. However long it takes, I’ll be doing it.” Another participant explained her optimism about letting go of the past in service of moving towards her future. She said, “Thinking in a positive way will create better outcomes. And I’m a loving and deserving person and letting go of yesterday is a better way for the future.”

Judging self more gently and experiencing greater self-acceptance. Many participants explained that their experience with coaching led them to valuable self-reflections, which they believed have, or will, lead to external changes. One participant described her experience when she said, “The coaching made me think more about my insides rather than my whole outside package. So it was all about being happy on the inside...And eventually you’ll love yourself enough, you’ll be choosing the right healthy foods.” One participant described how gaining self-acceptance allowed him to move forward regardless of the opinions of others. He stated:

I would say my biggest thing is that I don’t really search for the acceptance of others that I maybe once went for. So I think what happens is a case of, not that I don’t totally care.... You know, everybody wants to fit in and do that kind of thing. But I think my biggest difference probably is the fact that, you know, instead of being hamstrung by that, I can move forward and get things done.

Another participant described a profound shift in her self-perception through her coaching experience. She said:

I know that my weight problem is not who I am. I have stopped looking at myself that way. I actually feel more confident in a group of people. I’ve learned that people do like me for who I am and I wasn’t even able to see that before. And

yeah, I've let myself believe that I'm a great mom...[Before the coaching], I would probably have said, 'good, not too bad.' Mostly, I'm a great mom, my kids are fabulous. And I've learned to be able to thank myself for doing that.

Generally, coaching was, it makes me teary-eyed, because it's a confidence I've never had before.

One participant acknowledged her shift in attitude regarding feeling good and being kind towards herself when she said, "I think talking to the [life coach] has made the difference as far as knowing it's okay to feel good about yourself. That it's okay to give yourself a little pat here or there to keep yourself going." Another participant explained that she was gentler towards her own weight judgments when she said:

Although I still realize I'm overweight, I'm not sure it's bugging me as much.

Because I'm starting to think that perhaps there is more to people than the outside package and perhaps that would be true for myself too. Because I can see beyond the packages. But I never accepted that anyone else could [see beyond my package].

Through the coaching session, participants reported that they gained an understanding about making mistakes and moving on. One participant said, "[I have learned to] view myself as a better person and that it's okay to stumble. And, it's okay to make mistakes. It's just when you repeat those mistakes over and over, that's where the real problem is." Another participant shared that he no longer gives up on himself when mistakes are made. He said:

I've learned that I shouldn't beat myself up for eating, you know, binge eating or something. I should just pick myself up and continue on a healthy eating plan. In

the past I've always, you know, just given up, I can't do this, but now it's, I feel differently about it.

Many participants were able to change their frame of mind during their coaching experience. They described being gentler on themselves, particularly when they recognized when their negative self-talk was trying to sabotage their healthy behaviours. For example, one participant said:

I think that [I learned that I have] the choice of choosing to listen to my [negative inner voice] or not about how fat I am and all that. I can choose not to listen, and I can choose just to smile. And that's what I feel right now.

A remarkable difference was observed between how participants viewed themselves before and after the treatment. *All* participants revealed an increase acceptance for their own mistakes, and were more inclined to acknowledge their successes.

Engaging in healthful actions. During the coaching treatment, several participants reported that they engaged in actions directly in service of their health, including quitting smoking, increasing their daily physical activity, and making healthier food choices. One woman, who did not decrease her weight during the study but who did quit smoking, was delighted by her accomplishments during the treatment. She said:

I wish I had done better maybe with weight loss. But I think I've achieved something huge. ... And I didn't smoke a lot anyway, but to smoke nothing is even better. Especially with coming up to Christmas and it's a social time of the year. I think that is the big thing.

Another participant revealed that she stopped smoking at the beginning of the study and maintained her smoke free habits throughout the treatment. She said, "I didn't tell everybody [researcher/coaches] in the beginning [of the treatment] that my husband and I both quit smoking. And we both haven't smoked for six weeks....It's a big thing for us."

Many participants did make changes by starting or increasing their amount of physical activity. One participant explained that after the treatment she paid more attention to what she was consuming and how often she was taking part in physical activity. She said, "I'm more aware of what I eat and physical activity that I do each day and, trying to get my family to do the same. To do a little more exercise and to eat healthy." One participant said that she had changed her eating habits with subtle but impactful changes. She said, "for lunch, instead of having a sandwich and fries, I'll have a sandwich and a salad....[I am also] buying healthy snacks for me to snack on, [and] recognizing true hunger." Another participant shared that by the end of the treatment she had become more active. She said, "I do more exercise now. I do walk more often than I was doing before." One participant explained that even during an intensely busy time in her life, coaching helped support her physical activity schedule. She said, "I've maintained my workout schedule. This was a very, very busy time, so definitely I think that was because of the coaching."

By contrast, some participants were unable to begin or maintain a physical activity schedule. One participant said that right now she was unable to make the changes necessary for a healthier lifestyle. She said, "I would appreciate if I can get into the zone and be healthy and fit and someday I believe it may happen. But for whatever reason, it's not gonna happen now." Another participant explained that she was not able to maintain

an exercise plan when she said, “I’ve gotten off my diet and exercise program. And yeah, that’s an excuse that we’re busy right now, but I’m not beating myself up over it because I know what I have to do.”

During the post-treatment interview, most participants reported engaging in some form of physical activity and making healthier food choices. Although a few participants were unable to start a physical activity routine, the tools necessary to eventually start a program were now available. Anecdotally, a few participants suggested a structured physical activity plan and a structured nutrition plan to follow on a daily basis would add to the treatment.

At the end of the post-interview, participants were asked if they wanted to share anything else about their coaching experience. Every participant expressed gratitude for the opportunity to participate in the treatment. One participant stressed that the weigh scale did not accurately represent the progress that was made on the inside. She said:

There’s just so much that I’ve learned. I really have learned a mountain. I mean what I have learned through this coaching I know that I will take [with me] forever. I know that. I know that things will continually come back to me from these past couple months. There’s no question, no question at all. It’s been tough, it’s been emotional... the scale doesn’t speak to the success that I feel that I’ve had from it... very positive.

Many participants found the coaching experience both challenging and rewarding. One person said:

Well, for me, it was a pretty emotional experience, and it was really hard to you know, say these things aloud about myself. You know, that I have these feelings

of self-worthlessness, that, you know, nobody loves me. And I'm not worthy and, you know, when you say them it doesn't really make sense. But to acknowledge that is, it was really profound.

Another participant described how coaching involved her whole life, not just her weight when she said:

This is a wonderful program. It is, and it's from the aspect of, I guess, the idea of starting out as your weight. But, I mean, it encompasses everything. So if you take all of those things into consideration. Then you have to work out one thing to help another thing. And they're all joined at some point, so whether it's just for your weight, that's just the start of it, you know. You're chubby because of something else, you know. So tackling those things, then hopefully the rest of [it] will fall into place. So it's been a very good learning experience that I appreciate immensely.

Overall, participants reported that they learned a great deal about themselves and appreciated having the coach with whom to talk. And according to many participants, the weigh scale did not provide an accurate reflection of their personal accomplishments.

CHAPTER V

DISCUSSION

The main purpose of the current study was to determine the effectiveness of Co-Active life coaching as a treatment for decreasing obesity. The secondary purpose was to examine the effect of Co-Active life coaching on participants' self-esteem, self-efficacy, functional health status, and physical activity behaviours.

At baseline, all participants of the current study were either obese or morbidly obese. A statistically significant decrease in waist circumference was found post-treatment. This finding is important because waist circumference is considered a good predictor of abdominal and nonabdominal fat and is directly associated with all-cause mortality in middle-aged men and women (Bigaard et al., 2005; Jansse, Katzmarzyk, & Ross, 2004). Overall, a decrease in BMI was not found in the current study and may be explained, in part, by the treatment duration. Changes in BMI tend to require substantial time. In Douketis, Macie, Thabane, and Williamson's (2005) review of literature pertaining to treatment options for obese individuals, the authors concluded that dietary/lifestyle therapy provides < 5 kg weight loss after 2-4 years of treatment. Because a non-significant decrease in BMI was observed, the number of coaching sessions over a relatively short (6 to 8 sessions) duration may not have been enough to produce a statistically significant decrease in BMI. If the treatment ran for a longer period of time, greater decreases in BMI may be expected.

During the exit interview, participants mentioned that the weigh scale did not accurately represent the progress that was made on their self-growth. Statistically significant increases in participants' self-esteem support this statement. Many researchers

believe that building healthy self-esteem is a lifelong process and certain steps are integral in improving self-esteem (Burns, 1990; Donnelly et al., 2001). Many of the steps proposed by Burns to improve self-esteem are components of the Co-Active coaching model used in the current treatment (e.g., self-acceptance, exploring values, self acknowledgement, risk taking, and avoiding self-judgment). These elements are embedded in Co-Active coaching and likely contributed to the increased self-esteem experienced by participants. For a full review of Burns' steps to increase self-esteem, refer to Burns (1990).

There was no significant change in physical activity barriers self-efficacy. Researchers have found that when support is available to individuals trying to make changes to their physical activity behaviours, self-efficacy is enhanced (Bandura, 1977; Carron et al., 2003). Because a non-significant increase was observed and because participants reported that they felt better prepared to engage in physical activity, increasing the number of coaching sessions may be the support needed to significantly overcome physical activity barriers self-efficacy.

Mean physical activity-related task efficacy scores did not change significantly from pre-to-post treatment. However, a trend decrease was observed. McAuley and colleagues (2003) conducted a study assessing the changes in self-efficacy to overcome barriers to physical activity in older adults. Although their study was quite different from the current treatment, they also found decreases in task self-efficacy. McAuley and colleagues concluded that a decrease in task self-efficacy might have resulted because participants at the beginning of the treatment were not aware of how difficult it would be to start participating in physical activity. Also, participants in both studies were

administered self-efficacy questionnaires when they were no longer involved in the treatment. Participants were administered the final round of questionnaires 1-2 weeks after their final coaching session. Consequently, in the current treatment, participants may have experienced increased challenges to being active without the assistance of a life coach. Continued time with a coach may help increase the support needed to start and maintain a physical activity program.

In the current study, nutrition self-efficacy did not increase significantly. This is different from previous studies that observed increases in nutrition self-efficacy (AbuSabha & Achterberg, 1997; Richman, Loughnan, Droulers, Steinbeck & Caterson, 2001). However, increases were observed in studies that specifically focused on changing the eating behaviours of individuals – the current treatment did not directly target eating behaviours unless the client asked to do so. Many participants reported in the exit interviews that they had started to make changes to their dietary intake. Specifically, some participants shared in the exit interview that they no longer used food to regulate their mood. During and after the coaching sessions, many participants were more aware of when their mood dictated what they would eat. Avoiding old habits in tough situations and not allowing food to regulate mood are characteristics used to differentiate those who are unable to maintain the loss in weight (Regainers) from those who are able to maintain the weight loss (Maintainers) (Byrne et al., 2003). It should be noted that nutrition self-efficacy may have increased significantly had the treatment duration been greater.

No statistically significant increases in physical activity were observed in the current study. This is not a surprise because overcoming barriers to physical activity did not significantly increase. Researchers have reported that self-efficacy is a strong marker

as to whether individuals will actually initiate a new task (Bandura, 1977; Carron et al., 2003). If individuals are not confident in their ability to start and continue physical activity, they are unlikely to start or continue past a few sessions. In the exit interview, most participants shared that a great deal was accomplished regarding their self-esteem and self-worth and that they now had the tools to make appropriate changes for a healthier lifestyle. Participants may not have had enough time during this relatively short treatment to put those tools into action. Those tools (e.g. engaging in healthful actions and self-acceptance) that coaching had a hand in developing are the reason why Co-Active coaching is believed to be a treatment that can have a more permanent effect on weight loss. Significant increases in self-esteem indicated that changes were made; participants were making steps in the right direction. And, many participants shared in the exit interview that they had started adding physical activity into their daily routine. Two participants also shared during the exit interview that they quit smoking during the treatment. Because smoking cessation can be a very difficult task, it may not have been possible for those participants to concentrate on increasing physical activity at the same time or that rather than increasing physical activity, quitting smoking was their more pressing agenda. Although there was not a statistically significant increase in physical activity, from a practical standpoint, noteworthy increases in metabolic equivalents (METs) on the IPAQ were observed. A 1613.96 total MET mean difference was noted. Therefore, on average, each participant increased his/her physical activity level by 90 METs per week. To put this in perspective, each participant may have increased his/her physical activity level by one 25-minute walk per week. Also, the mean difference of 10-15 minute moderate blocks of physical activity increased by 5.73 blocks. Given the

decrease in “mild” physical activity and the corresponding increase in “moderate” and “strenuous” physical activity, participants were shifting their physical activity patterns in a more healthful manner. Twenty participants were needed to reach statistically significant results. Losing two participants may have been the factor contributing to these non-significant results.

While the lack of statistically significant findings regarding physical activity and nutrition self-efficacy in the current study is understandable, it is important to note that *some* changes in these behaviours did occur. That is, given that the statistically significant decrease in waist circumference can be attributed logically to changes in physical activity and diet, and given participants’ qualitative accounts that these behaviours improved, it is likely that changes in both physical activity and diet occurred (although not statistically significant changes).

Generic quality of life measured by the SF-36 questionnaire increased significantly from pre-to-post treatment. This finding is not surprising, because similar results have been obtained in studies using non-surgical interventions for obesity (Kolotkin, Meter, & Williams, 2001). Individuals seeking treatment for obesity normally have lower health related quality-of-life (HRQOL) than population norms (Kolotkin et al.) and increased HRQOL has been associated with increased weight loss (Teixeira, Going, Sardinha, & Lohman, 2005). Given that participants ended the treatment with increased HRQOL scores, obesity reductions may continue among the study group.

Limitations

There are a number of limitations to the current treatment that should be mentioned. Most notably, the current treatment only included 18 participants, 16 of

whom were female. Due to two dropouts, 18 may not have been enough to realize statistically significant findings. This demographic limits the generalizability of the study. The short duration of the treatment may have also impacted results. The number of coaching sessions participants received ranged between 6 to 8 due to missed appointments and scheduling challenges. Other researchers should consider standardizing the number of coaching sessions. Although having more coaching sessions may have enhanced results, it was not feasible for this study. Despite these limitations, important conclusions and recommendation for future studies can be drawn from this treatment using life coaching as a treatment for obesity.

CHAPTER VI

CONCLUSIONS AND FUTURE DIRECTIONS

Conclusions

The following conclusions can be made from the current treatment:

1. Co-Active life coaching was associated with a statistically significant decrease in waist circumference.
2. Co-Active life coaching was not associated with a statistically significant decrease BMI.
3. Co-Active life coaching was associated with a statistically significant increase in self-esteem and functional health status.
4. Participants felt more optimistic about making healthier choices at the end of the treatment and the majority started including physical activity and healthier eating choices into their daily lives.
5. Co-Active life coaching was not associated with statistically significant increases in physical activity.
6. Co-Active life coaching was not associated with statistically significant increase or decreases in self-efficacy.
7. Participants at the end of the study experienced greater self-acceptance and judged themselves more gently.

Future Directions

This is the first study to examine Co-Active life coaching as a treatment for obesity. There are three main recommendations that can be made for researchers interested in pursuing this coaching treatment. First, to increase the generalizability of the

study, equal numbers of males and females need to be included. The majority of participants in the current study were female.

Second, because qualitative findings pointed to shifts in most participants' physical activity and nutrition behaviours, future studies should be conducted with a larger sample of 35-55 year old adults, for a longer duration of time. This increase in participant numbers and treatment duration is likely to be associated with more statistically significant findings. Also, the nature/content of the coaching sessions should be coded to help interpret findings.

Third, including a structured physical activity plan and a structured nutrition plan, as suggested anecdotally by participants to the researcher in the exit interview, along with coaching sessions may strengthen results. Specifically, future studies should consider conducting a study that has three treatment groups to assess the individual impact of coaching with a physical activity program, coaching with a nutritional plan, and a combination of all three.

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Appendix A: Advertisement Poster

Life Coaching and the Treatment of Obesity

Researchers with the *University of Western Ontario* will be conducting research to determine the effectiveness of life coaching on the treatment of obesity. The study will run for 10-weeks and will involve one-on-one coaching sessions with a certified professional Co-Active coach (CPCC) (each session lasting approximately 45-minutes)

If you are interested in participating in this research and can answer YES to the following 3 questions, the research team would like to hear from you:

Are you overweight?

Do you speak English fluently?

You are NOT currently seeing your physician for the treatment of any medical ailment?

For more information or to set-up an appointment with the coach, please contact the lead researcher below.

Dr Jennifer D. Irwin, Ph.D., CPCC
The University of Western Ontario
South Valley Building Room 215
London, Ontario
N6A5B9
519-661-2111

Appendix B: Newspaper Advertisement

Are You Overweight?

Dr. Jennifer Irwin and Dr. Don Morrow in the Faculty of Health Sciences at Western are seeking participants for a life coaching and obesity study. Adults between the ages of 35-55, who are obese, speak English fluently, and are not under the care of a physician for a particular ailment, are eligible for this study. Participants receive eight weeks of one-on-one life coaching with a certified life coach.

If you meet the criteria, please contact Courtney Newnham at 519-661-2111

Appendix C: Eligibility Questionnaire

Sex: Male Female

Age: _____ years

How tall are you? _____ feet _____ inches OR _____
m/cmHow much do you weigh? _____ lbs OR _____
kgAre you currently seeing your physician for the treatment of an existing medical
ailment/co-morbidity (e.g., diabetes)? YES NO

Is English your first language spoken? YES NO

For researcher use only:

BMI: _____

Eligible to participate in the study: Yes No

Appendix D: Ethics Approval Form

09/09/2005 11:08 FAX 519 850 2466

UWO RESEARCH ETHICS

09/09/05



Office of Research Ethics

The University of Western Ontario
 Room 00045 Dental Sciences Building, London, ON, Canada N6A 5C1
 Telephone: (519) 661-3036 Fax: (519) 850-2466 Email: ethics@uwo.ca
 Website: www.uwo.ca/research/ethics

Use of Human Subjects - Ethics Approval Notice

Principal Investigator: Dr. J.D. Irwin

Review Number: 11612E

Revision Number:

Protocol Title: Obesity treatment through life coaching, a pilot study

Department and Institution: Faculty of Health Sciences, University of Western Ontario

Sponsor:

Ethics Approval Date: September 8, 2005

Expiry Date: September 30, 2006

Documents Reviewed and Approved: UWO Protocol, Letter of Information & Consent, Advertisement

Documents Received for Information:

This is to notify you that The University of Western Ontario Research Ethics Board for Health Sciences Research Involving Human Subjects (HSREB) which is organized and operates according to the Tri-Council Policy Statement and the Health Canada/CH Good Clinical Practice Practices Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted expedited approval to the above named research study on the approval date noted above. The membership of this REB also complies with the membership requirements for REB's as defined in Division 5 of the Food and Drug Regulations.

This approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the HSREB's periodic requests for surveillance and monitoring information. If you require an updated approval notice prior to that time you must request it using the UWO Updated Approval Request Form.

During the course of the research, no deviations from, or changes to, the protocol or consent form may be initiated without prior written approval from the HSREB except when necessary to eliminate immediate hazards to the subject or when the change(s) involve only logistical or administrative aspects of the study (e.g. change of monitor, telephone number). Expedited review of minor change(s) in ongoing studies will be considered. Subjects must receive a copy of the signed information/consent documentation.

Investigators must promptly also report to the HSREB:

- changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study,
- all adverse and unexpected experiences or events that are both serious and unexpected,
- new information that may adversely affect the safety of the subjects or the conduct of the study

If these changes/adverse events require a change to the information/consent documentation, and/or recruitment advertisement, the newly revised information/consent documentation, and/or advertisement, must be submitted to this office for approval.

Members of the HSREB who are named as investigators in research studies, or declare a conflict of interest, do not participate in discussion related to, nor vote on, such studies when they are presented to the HSREB.

Chair of HSREB: Dr. Paul Harding

Deputy Chair: Susan Hoddinott

Ethics Officer to Contact for Further Information			
<input type="checkbox"/> Karen Kueneman	<input type="checkbox"/> Janice Sutherland	<input type="checkbox"/> Susan Underhill	<input type="checkbox"/> Jennifer McEwen

This is an official document. Please retain the original in your files.

cc: CRE #46

UWO HSREB Ethics Approval
 2005-07-04 (HS-EXP)

11612E

Filed Y/N

Page 1 of 1

*Appendix E: Consent Form**Life Coaching Consent Form*

I have read the letter of information, and I have had the nature of this study explained to me. I have been given the opportunity to ask questions. All questions have been answered to my satisfaction.

Representatives of The University of Western Ontario Health Sciences Research Ethics Board may require access to your study-related records or may follow up with you to monitor the conduct of the research.

I agree to participate in the study.

Date

Participant's Name

Participant's Signature

Date

Researcher's Name

Researcher's Signature

*Appendix F: Information Letter***Obesity Treatment through life coaching; a pilot study***Investigators*

Dr. Jennifer Irwin, Ph.D., Faculty of Health Sciences, University of Western Ontario
Dr. Don Morrow, Ph.D., Faculty of Health Sciences, University of Western Ontario
Courtney Newnham-Kanas, M.A. (Candidate), Faculty of Health Sciences, University of Western Ontario

Background

Investigators at the University of Western Ontario are conducting research to determine the effectiveness of life coaching for treating obesity. If you are 18 years of age or older, have a body mass index greater than 30, and are not currently being treated by a physician to treat existing medical ailments (e.g., diabetes), the researcher would like you to participate in the study. There will be a total of 20 participants in the study.

What will happen in this study?

If you agree to participate, you will receive 8-weeks of one-on-one coaching with a Certified Co-Active Professional Coach (i.e., 8 x 45-minute sessions). The foundation of the Co-Active coaching method is that participants have the answers to their own questions and the coach helps them to access these answers through the use of a variety of techniques. At the beginning of the study you will be contacted to complete a series of questionnaires and will be requested to complete these questionnaires again at the end of the study.

As a participant, you will be requested to attend a one hour meeting to complete a twenty-minute one-on-one interview with the researcher, two questionnaires (requiring approximately 15 minutes each) and to meet the coach. The study will run for 8-weeks following the completion of the introductory meeting and during the 9th week you will be requested again to respond to a series of questionnaires and return weekly for body composition measurements. The purpose of the study is to determine if Co-Active life coaching is an effective method to treat obesity.

Alternatives and your right to withdraw from the study

Your participation in this study is voluntary. You may refuse to participate, refuse to answer any questions, or withdraw from the study at any time.

Possible benefits and risks to you for participating in the study

There are many physical, psychological, and physiological benefits that are attainable by decreasing body mass indices and increasing functional health status. There are no known risks due to participation in the study.

Confidentiality

The research team will keep your identity, comments, written data, and questionnaire responses confidential and secure. No names will appear on any documents published as a result of this study, all results will be presented in aggregate form.

Costs and compensation

There is no cost to you for participating in the study

When the results of the study are published, your name will not be used. If you would like to receive a copy of the overall results of the study, please put your name on a blank piece of paper and give it to the researcher.

Contact Person (should you have any further questions about the study):

Dr. Jennifer Irwin, University of Western Ontario.

Dr. Don Morrow, University of Western Ontario.

Courtney Newnham-Kanas, University of Western Ontario

- If you have any further questions regarding your rights as a study participant, please contact the Director of the Office of Research Ethics at 661-3036.

This letter is for you to keep. You will also be given a copy of the consent form once it has been signed.

Appendix G: SF-36 Functional Health Status Scale

This survey asks for your views about your health. This information will help keep track of how you feel and how well you are able to do your usual activities.

Please answer these questions by “check-marking” your choice. Please select only one choice for each item.

1- In general, would you say your health is:

1. Excellent 2. Very good 3. Good 4. Fair 5. Poor

2- Compared to ONE YEAR AGO, how would you rate your health in general NOW?

1. MUCH BETTER than one year ago.
2. Somewhat BETTER now than one year ago.
3. About the SAME as one year ago.
4. Somewhat WORSE now than one year ago.
5. MUCH WORSE now than one year ago.

3- The following items are about activities you might do during a typical day. **Does your health now limit you** in these activities? If so, how much?

Activities	1. Yes, Limited A Lot	2. Yes, Limited A Little	3. No, Not Limited At All
a) <u>Vigorous activities</u> , such as running, lifting heavy objects, participating in strenuous sports?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
b) <u>Moderate activities</u> , such as moving a table, pushing a vacuum cleaner, bowling, or playing golf?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
c) Lifting or carrying groceries?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all

d) Climbing several flights of stairs?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
e) Climbing one flight of stairs?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
f) Bending, kneeling or stooping?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
g) Walking more than a mile ?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
h) Walking several blocks?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
i) Walking one block?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all
j) Bathing or dressing yourself?	1. Yes, limited a lot	2. Yes, limited a little	3. No, not limited at all

4- During the **past 4 weeks**, have you had any of the following problems with your work or other regular activities *as a result of your physical health*?

	Yes	No
a) Cut down on the amount of time you spent on work or other activities?	1. yes	2. No
b) Accomplished less than you would like?	1. yes	2. No
c) Were limited in the kind of work or other activities?	1. yes	2. No
d) Had difficulty performing the work or other activities (for example it took extra effort)?	1. yes	2. No

5. During the **past 4 weeks**, have you had any of the following problems with your work or other regular daily activities **as a result of any emotional problems** (such as feeling depressed or anxious)?

	Yes	No
a) Cut down on the amount of time you spent on work or other activities?	1. yes	2. No
b) Accomplished less than you would like?	1. yes	2. No
c) Didn't do work or other activities as carefully as usual?	1. yes	2. No

6. During the **past 4 weeks**, to what extent has your physical health or emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?

1. Not at all 2. Slightly 3. Moderately 4. Quite a bit 5. Extremely

7. How much **bodily pain** have you had during the **past 4 weeks**?

1. None 2. Very mild 3. Mild 4. Moderate 5. Severe 6. Very severe

8. During the **past 4 weeks**, how much did **pain** interfere with your normal work (including both work outside the home and housework)?

1. Not at all 2. A little bit 3. Moderately 4. Quite a bit 5. Extremely

9. These questions are about how you feel and how things have been with you **during the past 4 weeks**. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the **past 4 week** ...

	1	2	3.	4	5.	6.
	. All of the time	. Most of the time	A good bit of the time	. Some of the time	A little of the time	None of the time
a) Did you feel full of pep?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
b) Have you been a very nervous person?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
c) Have you felt so down in the dumps that nothing could cheer you up?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
d) Have you felt calm and peaceful?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time

e) Did you have a lot of energy?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
f) Have you felt downhearted and blue?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
g) Do you feel worn out?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
h) Have you been a happy person?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time
i) Did you feel tired?	1. All of the time	2. Most of the time	3. A good bit of the time	4. Some of the time	5. A little of the time	6. None of the time

10. During the **past 4 weeks**, how much of the time has your **physical health or emotional problems** interfered with your social activities (like visiting with friends, relatives, etc.)?

1. All of the time
2. Most of the time.
3. Some of the time
4. A little of the time.
5. None of the time.

11. How TRUE or FALSE is **each** of the following statements for you?

	1.	2	3.	4	5.
	Definitely true	. Mostly true	D on't know	. Mostly false	Definitely false
a) I seem to get sick a little easier than other people?	1. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. Definitely false
b) I am as healthy as anybody I know?	1. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. Definitely false

c) I expect my health to get worse?	1. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. Definitely false
d) My health is excellent?	1. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. Definitely false

Appendix H: The Rosenberg Self-Esteem Scale

BELOW IS A LIST OF STATEMENTS DEALING WITH YOUR GENERAL FEELINGS ABOUT YOURSELF. IF YOU **STRONGLY AGREE**, CIRCLE **SA**. IF YOU **AGREE** WITH THE STATEMENT, CIRCLE **A**. IF YOU **DISAGREE**, CIRCLE **D**. IF YOU **STRONGLY DISAGREE**, CIRCLE **SD**.

		1. STRONGLY AGREE	2 AGREE	3. DISAGREE	4. STRONGLY DISAGREE
1.	I feel that I'm a person of worth, at least on an equal plane with others.	SA	A	D	SD
2.	I feel that I have a number of good qualities.	SA	A	D	SD
3.	All in all, I am inclined to feel that I am a failure.	SA	A	D	SD
4.	I am able to do things as well as most other people.	SA	A	D	SD
5.	I feel I do not have much to be proud of.	SA	A	D	SD
6.	I take a positive attitude toward myself.	SA	A	D	SD
7.	On the whole, I am satisfied with myself.	SA	A	D	SD
8.	I wish I could have more respect for myself.	SA	A	D	SD

9.	I certainly feel useless at times.	SA	A	D	SD
10.	At times I think I am no good at all.	SA	A	D	SD

Appendix I: Adapted Godin Leisure Time Activity Questionnaire

Considering a 7-Day period (a week), on how many **days** per week on the average do you do the following kinds of physical activity for **30 minutes or more** (all at once or in 10 or 15 minute blocks) during your **free time** (write on each line the appropriate number)?

For example, if a person walks her dog twice per day for 15 minutes each time on Mondays, Wednesdays and Fridays, she would indicate moderate activity on 3 days per week and a total of six (6) 10-15 min 'blocks' and zero (0) 30 minute continuous 'blocks'. If, however, she walks her dog once per day for 30 minutes each time on Mondays, Wednesdays and Fridays, she would indicate moderate activity on 3 days per week and a total of three (3) 30 min 'blocks' and zero (0) 10-15 minute 'blocks'. If she walks her dog twice on Mondays for 15 minutes each time, and for 30 continuous minutes on Wednesdays and Fridays, she would indicate 3 days per week and a total of two (2) 10-15 minute 'blocks' and two (2) 30 minute continuous 'blocks'.

	Days per Week	Approx. # of 10-15 min blocks per week	Approx. # of 30 min continuous blocks per week
<p>STRENUOUS PHYSICAL ACTIVITY (heart beats rapidly and breathe heavily for time you are active) (i.e., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling)</p>			
<p>MODERATE PHYSICAL ACTIVITY (not exhausting – similar to how you feel when you are walking as if you were going somewhere) (i.e., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing, weight training)</p>			
<p>MILD PHYSICAL ACTIVITY (minimal effort) (i.e., yoga, archery, fishing from river bend, bowling, horseshoes, golf, snowmobiling, easy walking)</p>			

Appendix J: Short Form International Physical Activity Questionnaire (IPAQ)

INTERNATIONAL PHYSICAL ACTIVITY QUESTIONNAIRE

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

No vigorous physical activities

➔ *Skip to question 3*

2. How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

3. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

No moderate physical activities

➔ *Skip to question 5*

4. How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**
 _____ **minutes per day**
 Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you might do solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ **days per week**
 No walking → *Skip to question 7*

6. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**
 _____ **minutes per day**

Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**
 _____ **minutes per day**
 Don't know/Not sure

This is the end of the questionnaire, thank you for participating.

Appendix K: Nutrition Self-Efficacy

Overcoming Barriers to Nutrition

Please indicate below how confident you are that you can successfully carry out each of the activities listed below using the following scale.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No Confidence at All				Somewhat Confident						Completely
Confident										

How certain are you that you could overcome the following barriers?

I can manage to stick to eating a well-balanced diet with predominately healthful foods, and reduced junk food...

1. ...even if I need a long time to develop the necessary routines _____
2. ...even if I have to try several times until it works _____
3. ...even if I have to rethink my entire way of nutrition _____
4. ...even if I do not receive a great deal of support from others when making my first attempts _____
5. ...even if I have to make a detailed plan _____
6. ...even if I am traveling _____
7. ...even if it means bringing my meal to work _____
8. ...even if I am eating at a restaurant _____
9. ...even if I am going to a friends house for a meal _____
10. ...even if the healthful meal is more expensive _____
 ...even if junk food is more available than healthful food _____

Appendix L: Barriers Efficacy

Overcoming Barriers to Physical Activity

The items below reflect common reasons preventing people from participating in physical activity programs or, in some cases, dropping out or quitting the program altogether. Using the scale below, please indicate how confident you are that you could be physically active in the event that any of the following circumstances were to occur.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No Confidence at All						Somewhat Confident				Completely Confident

For example, if you have *complete confidence* that you can continue to be physically active, even if you are bored by the activity, you would record 100% in the space provided. However, if you are absolutely sure that you *could not* be physically active if you failed to make or continue make progress you would record 0% in the space provided.

I believe that I can be moderately physically active 5 times per week if:

1. The weather is very bad (hot, humid, rainy, snow, cold) _____
2. I was bored by the program or activity _____
3. I was on vacation _____
4. I felt pain or discomfort when being active _____
5. I had to be active alone _____
6. Physical activity was not enjoyable or fun _____
7. It became difficult to get to the activity location _____
8. I didn't like the particular activity program I was doing _____
9. My work schedule conflicted with my activity program _____
10. I felt self-conscious about my appearance when active _____
11. The class instructor did not offer me any encouragement _____
12. I was under personal stress of some kind _____

Appendix M: Tasks Efficacy

Achieving Tasks in Physical Activity

Please indicate below how confident you are that you can successfully carry out each of the activities listed below using the following scale.

0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
No Confidence at All			Somewhat Confident				Completely Confident			

For example, if you have *complete confidence* that you can complete 15-minutes of continuous moderate intensity activity each day, you would record 100% in the space provided. However, if you are *not very confident* that you could complete 30-minutes of continuous moderate intensity activity each day, you would record a number closer to 0% in the space provided.

I believe that I can be moderately physically active 5 times per week...

1. For 3 bouts of activity, each lasting 10 consecutive minutes _____
2. For 2 bouts of activity, each lasting 15 consecutive minutes _____
3. For 1 bout of activity, lasting 30 consecutive minutes _____
4. For 1 bout of activity, lasting more than 30 consecutive minutes _____

Appendix N: Pre-Interview Questions

1. What is it like being you?
2. In your wildest dreams, what would your life look like? In what way would it be different from now?
3. What does your weight represent?
4. What would you have to say yes and no to, to make your ideal weight come true?
5. What is the story you tell yourself about your weight?
 - What does the voice in your head say?

Post-Treatment Interview Questions

1. What is it like being you now compared to the beginning of the intervention?
2. What have you learned from your coaching experience?
3. What has changed since the beginning of the intervention?
4. What actions have you taken and do you attribute those actions to coaching?
5. How do you see what you have learned impacting you over the next six months?
6. Is there anything else you would like to tell me regarding your participation in the study?