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CO-ACTIVE LIFE COACHING AS AN INTERVENTION FOR OBESITY AMONG FEMALE UNIVERSITY STUDENTS

(Spine title: Coaching for Female University Students with Obesity)

(Thesis format: Monograph)

by

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Graduate Program in Health & Rehabilitation Sciences

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of the requirements for the degree of
Master of Science

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ABSTRACT

Purpose: To assess the impact of Co-active life coaching on obese female university students' body mass index (BMI), waist circumference (WC), functional health status, and self-esteem, and conjointly to identify the coaching skills and primary agenda topics that facilitate life coaching's efficacy as an intervention for obesity.

Methods: A multiple-baseline single-subject research design was utilized with five full-time female undergraduate students with BMI ≥ 30kg/m^2. Two Certified Professional Co-active Coaches (CPCCs) provided an average of nine, 35-minute, one-on-one sessions with participants. Measures included BMI, WC, the previously validated Short-Form 36 (SF-36) Health Survey, and Rosenberg Self-Esteem Scale. Visual inspection was used to analyze changes in BMI and WC. Effect sizes were calculated for the SF-36 and Rosenberg Self-Esteem Scale, and were interpreted using Cohen's (1988) rule. Statistical interpretations were supplemented with qualitative information from post-intervention interviews to determine whether a *clinically significant difference* was achieved. Inductive content analysis was conducted on the pre- and post-intervention interview transcripts and on 50% of each participant's coaching session transcripts.

Results: Visual inspection revealed no change in BMI for three, a decrease for one, and a slight increase for one participant. WC decreased for three participants and remained stable for two. A moderate to large increase in self-esteem (Cohen's $d = 0.79$) was found. Qualitatively, two participants spoke specifically of having improved self-esteem at the end of the intervention. A substantial increase in overall health status (Cohen's $d = 0.90$; mental health dimension $d = 0.74$; physical health dimension $d = 0.88$) was found. Qualitatively, one participant spoke specifically of having an enhanced overall health

status at the end of the intervention. During their post-intervention interviews, all five participants spoke of experiencing improved self-acceptance. Collectively, the effect sizes and qualitative statements indicate clinically significant changes (i.e., improvements) in participants' self-esteem, and their physical, mental, and total (overall) health statuses upon completion of the intervention. All participants' primary agenda topics related to achieving enhanced self-acceptance and an improved relationship with themselves. For all participants, *powerful questions* was the skill used most frequently by the coaches, and among those participants for whom a reduction in BMI and/or WC was achieved, *acknowledgement* was the skill used most often.

Conclusions: Coaching was associated with a trend towards a decrease in WC, and with clinically significant increases in participants' self-esteem, and in their mental, physical, and overall health statuses. The predominant coaching skills and primary agenda topics revealed in this study will allow for a future in-depth comparison of similar *help by talking* techniques.

Keywords: Co-active life coaching, body mass index, waist circumference, self-esteem, functional health status.

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"When I find myself fading, I close my eyes and realize my friends are my energy."

(Anon.)

I am incredibly fortunate to have a life filled with such extraordinary friends. You have touched my life in so many ways, and from you I have also learned great lessons.

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CHAPTER 1

Introduction

The number of obese people worldwide has reached 300 million, a statistic that prompted the World Health Organization (2000) to declare obesity a *global epidemic* (Colman, 2001; Jain, 2004). The prevalence of obesity in Canada is reflective of this staggering international trend. The number of obese Canadians has nearly tripled in recent decades, climbing to 23% among those people aged 18 years and older (Statistics Canada, 2006a; Strychar, 2004). Given that 29% of Canadians aged 18-24 years are currently attending university, and that university-educated individuals often become our country's opinion leaders who exercise an influence over social and cultural norms, it is important to focus on the health of this subpopulation of Canadians (Leslie et al., 1999; Statistics Canada 2001, 2003; Stewart-Brown et al., 2000).

For young adults, the years spent attending university are associated with the development of patterns of physical activity, nutrition, and other health-related behaviours that will affect their health later in life (Clement, Schmidt, Bernaix, Covington, & Carr, 2004). It is alarming that the 2004 Canadian Community Health Survey estimated that nearly one quarter of Canadians who have some post-secondary education are obese (Statistics Canada, 2006a). It is critical to examine all intervention and treatment approaches for reducing obesity among university students in order to provide obese students with the best opportunity to become healthy adults. One such intervention is Co-active life coaching (Whitworth, Kimsey-House, Kimsey-House, & Sandahl, 2007).

Purpose

The purpose of this study was to assess the impact of Co-active life coaching on obese female university students' body mass index (BMI), waist circumference (WC), functional health status, and self-esteem, and conjointly to identify the coaching skills and primary agenda topics that facilitate life coaching's efficacy as an intervention for obesity.

Operational Definition of Obesity

Obesity is a condition in which the "...chronic energy imbalance, whereby intake exceeds expenditure..." (Katzmarzky, 2002, p. 1039) results in the accumulation of excess body fat. Based on the guidelines set by the World Health Organization (WHO) and Health Canada, body mass index is the method most frequently used to diagnose obesity (Statistics Canada, 2006b; WHO, 2006). BMI is calculated as weight in kilograms divided by the square of height in meters, and is reported in kg/m^2 (Statistics Canada, 2006a). Individuals with a BMI equal to or greater than 30 kg/m^2 are classified as obese; however this category is further divided into obese classes I, II and III, which correspond to BMIs of 30.00-34.99, 35.00-39.99, and $\geq$ 40.00, respectively (Jain, 2004).

While BMI is a simple index that provides a useful population-level measure of obesity, it does not capture the distribution of body fat (Jain, 2004). Excess body fat accumulated around one's abdomen, or central adiposity, has been associated with an increased risk of obesity-related illness when compared with peripheral adiposity (Katzmarzyk, 2004). Waist circumference measurement is unrelated to height and serves as an indicator of abdominal obesity (Banning, 2005). A waist circumference greater than

102 cm in men and 88 cm in women is classified as obese (Banning). Body mass index and waist circumference will be used throughout the current study to assess obesity.

Rationale and Hypotheses

Although considerable documentation exists about the Canadian obesity epidemic and the associated health and economic consequences, research aimed at critically evaluating obesity interventions targeting university students is lacking. The drastic rise in the prevalence of obesity in recent decades suggests that psychological and behavioural factors may play a more primary role than biological factors in influencing the development and maintenance of obesity (Stice, Presness, & Shaw, 2005). Strychar (2004) recommended that behavioural strategies for weight loss be explored further. According to Douglas and McCauley (as cited in Grant, 2001), life coaching is a behavioural approach aimed at achieving "...sustained cognitive, emotional and behavioral changes..." in service of accomplishing the client's goals (p.2). As summarized in an annotated bibliography by Newnham-Kanas, Gorczynski, Irwin, and Morrow (under review), life coaching has been utilized effectively in ameliorating many health issues, including, but not limited to asthma, poor cardiovascular health, depression, and diabetes. Furthermore, Co-active life coaching has been effective in reducing waist circumference among obese adults, aged 35-55 years (Newnham-Kanas, Irwin, & Morrow, under review). While the study's results suggest that life coaching has potential as an efficacious intervention for obesity among adults, the Co-active coaching process has not yet been examined critically. Co-active coaching, which will hereafter be referred to as *coaching*, is a form of life coaching that is theoretically-grounded in behaviour change theory (Irwin & Morrow, 2005). In order to inform the development and

examination of future research regarding the direct link between coaching and behaviour change, it is imperative that the coaching skills that are critical factors in facilitating behaviour change (i.e., in the treatment of obesity) be identified. To date, no studies have identified the coaching skills and primary coaching-agenda topics that are most pertinent to the method's effectiveness as an intervention for obesity among female university students.

Given that coaching has been deemed a theoretically-grounded behaviour change method and that studies have proposed its value for altering health-related behaviours (Irwin & Morrow, 2005; Vale, Jelinek, & Best, 2002a; Vale, Jelinek, Best, & Santamaria, 2002b), it is hypothesized that, at the end of an average of nine weeks of one-on-one coaching with a Certified Professional Co-active Coach (CPCC), body mass index and waist circumference values will decrease. Furthermore, it is hypothesized that functional health status and self-esteem will increase. Finally, it is hypothesized that the coaching skills that emphasize participants' self-worth (such as acknowledgements and championing) will be mostly impactful in helping participants change behaviours in service of healthy body-weight. This hypothesis is informed by the qualitative findings from Newnham-Kanas et al. (under review), which revealed the participants' appreciation of the coaches' assistance in helping them achieve greater belief in and acceptance of themselves.

CHAPTER 2

Review of Literature

Introduction

This literature review has been organized into five sections: 1) a brief review of obesity literature as it relates to various consequences associated with obesity; 2) a discussion specific to the importance of studying the university student population; 3) a discussion of the modifiable risk factors of obesity as they relate to the university student population; 4) a review of current obesity interventions; and 5) an assessment of the value of coaching as an intervention for obesity among university students.

Obesity Literature

Physical health complications. Obesity is a significant risk factor that can lead to the development and/or exacerbation of many chronic conditions (Colditz, 1999). This fact is reflected in the staggering statistic that 7000 people die annually in Ontario alone as a result of obesity-related diseases (Colman, 2001). An analysis of the 1996-1997 Canadian National Population Health Survey (as cited in Colman) indicated that Canadians with a BMI higher than 30 are "four times as likely to have diabetes, 3.3 times as likely to have high blood pressure..., [and] 56% more likely to have heart disease than individuals with a BMI in the *normal* range [i.e., 18.5-24.9]" (p.7). Obese individuals are also at an increased risk of osteoarthritis; hypertension; stroke; gallbladder disease; and endometrial, breast, prostate, and colon cancers (Jain, 2004). Due to the accumulation of adipose tissue around the chest, obesity commonly has been associated with impaired pulmonary function, which may result in the development of sleep apnea and less commonly in the aggravation of asthmatic symptoms (Jain; Pi-Sunyer, 1991; Stenius-

Aarniala et al., 2000). There is evidence that abdominal obesity escalates one's risk of hyperinsulinaemia (i.e., high blood insulin levels), glucose intolerance, and hypertension to levels greater than that of people with peripheral obesity (Despres, 1993;WHO, 2000). These escalated levels further increase the risk of diabetes mellitus and coronary heart disease (Despres). In addition to increasing general physical functioning, weight loss of five to ten percent of obese individuals' body weight has been demonstrated to improve blood glucose, blood pressure and cholesterol levels; corresponding reductions in risk of diabetes mellitus and cardiovascular disease have been documented (National Task Force on the Prevention and Treatment of Obesity, 2000; Shaw, O'Rourke, Del Mar, & Kenardy, 2007; Strychar, 2004). Weight reduction has also been correlated with improved lung function in obese adults with asthma (Stenius-Aarniala et al.). The length of time for which individuals are obese is an independent risk factor for determining their increased risk of mortality due to obesity-related illnesses (Whincup & Deanfield, 2005). Yet, alarmingly, among obese adults, less than 50% have been advised by physicians to lose weight (Daviglus, 2005; Sciamanna, Tate, Lang & Wing, 2000; Whincup & Deanfield).

Economic cost. In Canada, the annual direct medical care cost attributable to obesity is estimated to be in excess of $4.3 billion and to account for 2.2% of Canada's total health care expenditures (Vanasse, Demers, Hemiari, & Courteau, 2006). A study conducted by Colditz (1992), suggested that this is likely a conservative estimate of the true economic cost of obesity in Canada because it does not account for indirect costs such as wages lost due to obesity-related absenteeism and premature death. In Ontario alone, it has been estimated that obesity-related health conditions account for one million

days of lost job productivity per year (Colman, 2001). These lost days cost the province $1.1-$1.4 billion annually (Colman). The importance of exploring all intervention alternatives for reducing obesity is underscored by the estimation that if all Ontarians had a BMI within the healthy range the province would save approximately $2.5 billion annually in direct and indirect costs associated with obesity (Colman).

Quality of life. Quality of life includes one's physical, social, emotional, psychological, and functional well-being (Jain, 2004; Schwimmer, Burwinkle, & Varni, 2003). Obesity is associated with reduced quality of life in individuals as young as five years of age (Fontaine et al., 1999; Jain; Jia & Lubetkin, 2005; Schwimmer et al.). Therefore, it is not surprising that weight loss has been associated with enhanced quality of life with the largest gains related to physical health and functioning (Fontaine et al.; Jain).

Psychological consequences. Research examining the psychological functioning of obese individuals has yielded inconclusive results (Fabricatore & Wadden, 2003). However, it is difficult to imagine that overweight and obese individuals are not psychologically impacted by such pervasive factors as North American socio-cultural influences (e.g., the media) promoting body size standards that are unreasonable for most individuals (Irwin & Tucker, 2006). According to Aramburu and Drury (2002), the message delivered by North America's multi- faceted media sources is "slim down, tone up and your life will be magical...." (p.554). Within the general population, this might be interpreted to mean that overweight and obese individuals hold less value than thinner people (Aramburu & Drury). In light of North America's strong anti-fat biases and stereotyping (fatism), it has been determined that obesity may be associated with a

variety of psychological consequences, especially among females (Fabricatore & Wadden). Erikson and colleagues (2000) indicated that among girls as young as eight years of age, increased BMI was associated with symptoms of depression. Among adult women, obesity has also been linked with increased risk of major depression as well as suicide attempts and suicide ideation; however, for men, being underweight, rather than overweight or obese, was associated with increased risk of these psychological manifestations (Carpenter, Hasin, Allison, & Faith, 2000; Fabricatore & Wadden).

Stigma and discrimination. Despite the increasing prevalence of obesity, it has been suggested that the stigma and discrimination experienced by obese individuals is increasing (Jain, 2004). A stigmatized individual is "reduced in our minds from a whole and usual person to a tainted, discounted one" (Goffman, 1963, p.3). According to Cramer and Steinwert (1998), even children as young as age three display negative attitudes towards overweight and obese individuals. Reinforced by culturally imposed norms valuing thinness, anti-fat biases continue throughout adulthood (Cramer & Steinwert; WHO, 2000). The results of one American study indicated that university students viewed obese individuals as less favorable mates than embezzlers, cocaine users, and shoplifters (Fabricatore & Wadden, 2003). Obesity discrimination may also result in reduced educational and employment attainment, especially for females (Jain; Pingitore, Dugoni, Tindale, & Spring, 1994). A study conducted by Pingitore et al. (1994) indicated that compared with applicants with a healthy body weight, overweight men and women were recommended for employment less frequently, with the applicant's body weight being the strongest predictor of the hiring decision. Alarmingly, weight discrimination has also been observed among the health professionals who specialize in the treatment of

obesity (Drury & Louis, 2002; Teachman & Brownell, 2001). Researchers found that health care professionals associated obese patients with poor hygiene, dishonesty, overindulgence, laziness, and diminished educational and employment potential (Drury & Louis; Teachman & Brownell). In addition to the psychosocial implications of this stigma, health professionals' biases may also have consequences on obese patients' physical health. There is a positive association between BMI and health care avoidance; obese patients may be at an increased risk for obesity-related illnesses and other medical conditions as a result of avoiding regular physician visits (Drury & Louis).

Self-esteem. Obesity is often associated with reduced self-esteem (Ciliska, 1998; Teachman & Brownell, 2001). Defined as "...a positive or negative attitude toward the self" (Rosenberg, 1965, p. 30), self-esteem is an integral component of an individual's self image (Rubin & Hewstone, 1998). According to Cramer and Steinwert (1998), the attitude with which individuals perceive their body size is a stronger predictor of self-esteem than is actual body size. In light of this, it is alarming that many young adults perceive themselves to weigh more than they actually do (Parkinson, Tovée & Cohen-Tovée, 1998; Tiggemann & Pennington, 1990). Powerful cultural influences, such as multi-faceted media sources, continue to reinforce this trend, thereby increasing the cultural gap between ideal and actual body weights (Ciliska; Irwin & Tucker, 2005). While the direction of causations has not yet been established, reduced self-esteem among obese adults has been linked with depression, food obsession, and compulsive overeating (Ciliska). It is noteworthy in terms of this study that weight loss improves self-esteem among obese individuals (Shaw et al., 2007).

The Importance of Studying University Students

Health and lifestyle behaviours learned during adolescence and young adulthood can influence the development of lifestyle-related illnesses in later life (Buckworth, 2001; von Bothmer & Fridlund, 2005). For many young adults, the years spent attending university serve as their first opportunity to exercise autonomy in making behaviour-related decisions (Miller, Staten, Rayens, & Noland, 2005). Because many university students are still developing the self-management skills required to establish healthy behavioural habits, they are at particular risk of developing a variety of health issues, including: sexually transmitted diseases; unplanned pregnancy; alcohol, drug and tobacco use and abuse; eating disorders; chronic medical problems such as overweight and obesity, meningococcal meningitis, rubella and tuberculosis; as well as a variety of stress-related disorders (Buckworth; Grace, 1997). A study conducted by Bray and Born (2004) reported that the psychological stress experienced by Canadian undergraduate students was significantly greater than that of the country's general adult population. Among university students, failure to cope effectively with the university setting's innate stressors intensifies emotional and physical ailments such as: preoccupation with weight; the development of a negative body image; poor nutrition; physical inactivity; and, among susceptible students, the development of eating disorders – including binge eating and overeating, all of which contribute to the development of overweight and obesity (Grace).

Between 1991 and 1997, the prevalence of obesity increased fastest among individuals aged 18 to 29 years and those with some university education (Huang et al., 2003). Twenty-nine percent of Canadians aged 18-24 currently attend university, and,

alarmingly, nearly one quarter of Canadians with some post-secondary education are obese (Statistics Canada, 2001, 2003, 2006a). In a study of university students conducted by Racette et al. (2005), 69% of students experienced an increase in BMI between the beginning of their first year at university and the conclusion of their second year. The age at which obesity develops is influential in determining an individual's risk of remaining obese (Shaw et al., 2007). Compared with being obese as a child, the development of obesity in late adolescence is more strongly related to remaining obese through adulthood (Miller et al., 2005). At 18 years of age, being obese, compared to having a BMI within the healthy range, has been linked to having an increased risk of mortality in middle adulthood (Jain, 2004). Physical activity and dietary intake are two modifiable risk factors of obesity. Accordingly, it is worrisome that young adults are predisposed to living sedentary lifestyles and making poor nutritional decisions during the transitional period experienced while attending university (Racette et al.).

University Students and the Modifiable Risk Factors of Obesity

University students and physical activity. The pervasiveness of physical inactivity and non-nutritious dietary habits among university students places this population's health at risk and increases the prevalence of overweight and obesity among young adults (Lowry et al., 2000). Defined as "bodily movements produced by the contraction of skeletal muscles that increases energy expenditure above the basal level" (Vuori, 1998, p. S96), physical activity, when engaged in regularly, is associated with reduced: mortality; risk of cardiovascular disease; risk of colon cancer and non-insulin dependent diabetes mellitus; blood pressure and blood cholesterol; symptoms of depression, stress, and anxiety; and an improvement in mood (Bray & Born, 2004; Brisson & Tudor-Locke,

2004). Colman (2001) reported that sedentary Canadians are at a 44% higher risk of being obese when compared with physically active individuals.

Physical activity guidelines set by the American College of Sports Medicine (ACSM) together with the Centers for Disease Control and Prevention recommend that "every ... adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week" (ASCM, 2000, p. 137). Alarmingly, a systematic literature review conducted by Irwin (2004) found that at least 50% of Canadian university students do not engage in levels of physical activity that satisfy the ACSM's recommendation. The sharpest decline in physical activity frequency occurs between the ages of 18 and 24, a trend reflected in a recent Canadian study which reported that 66.2% of Canadian high school students participated in the recommended amount of weekly vigorous physical activity, whereas only 44.1% of students in their first two months at university met the standard (Bray & Born; Grace, 1997). This percentile may not capture the true extent to which Canadian undergraduate students are sedentary. It has been suggested that physical activity levels decrease as students age (Huang et al., 2003), and therefore the percentage of senior undergraduate students who are sedentary may exceed that of first year students. According to a study conducted by Irwin (2002), the barriers to exercising that were most frequently cited by a sample of Canadian university students included: inadequate on-campus physical activity facilities; social deterrents (i.e., feeling intimidated by the physical appearance of other students while engaging in physical activity); lack of time due to the demanding academic workload; inconvenience of having to carry physical activity equipment all-day (e.g., fresh clothes, running shoes); and inclement weather. Female participants in the study

also cited safety concerns related to walking to and from physical activity facilities on–campus in the evening as a deterrent from being physically active. Reinforcing such barriers and failing to make a habit of engaging in regular physical activity during the years spent at university may have life-long consequences for one's weight and general health. Sparling and Snow (2005) reported that the physical activity behaviours established while attending university are maintained after graduation.

University students and nutrition. Poor nutritional habits are commonplace among many university students (Huang et al., 2003). The relationship between unhealthy dietary habits and chronic conditions such as cardiovascular disease, cancer, diabetes, osteoporosis, and obesity has been well established (Grace, 1997). It is distressing that the years spent attending university are accompanied by unhealthy nutritional decisions (i.e., overeating in buffet-style cafeterias, increased consumption of high fat and high sodium foods and reduced fruit, vegetable and fiber intake, larger portion sizes, and increased alcohol consumption; Grace; Hoffman, Policastro, Quick, & Lee, 2006). The results of one study of 736 university students indicated that the majority (69.4%) of students ate less than 5 servings of fruit and/or vegetables per day (Huang et al.). Grace reported that the prevalence of unhealthy nutritional habits on university campuses is increasing, and overeating, an eating disorder in its own right and one linked to overweight and obesity, receives too little attention. The transitional period associated with attending university has been postulated to affect students' self-efficacy negatively. This is particularly disconcerting because self-efficacy is a strong predictor of both nutritious eating and physical activity participation (Butler, Black, Blue, & Gretebeck, 2004; Gyuresik et al., 2006; Keating, Guan, Pinero, & Bridges, 2005).

Obesity Interventions

Individualized and multifaceted obesity interventions that incorporate behavioural techniques with the intent to improve physical activity and nutrition behaviours have been recommended for the ongoing treatment of obesity among adults (Jain, 2004; Lowry et al., 2000). In fact, in the recently released Canadian obesity guidelines, cognitive-behaviour approaches are strongly recommended as part of effective obesity management (Lau et al., 2007). While short-term weight loss has been demonstrated by a number of current obesity interventions, life-long maintenance of the weight loss has proven to be considerably more difficult to achieve (Jehn, Patt, Appel, & Miller, 2006; Shaw et al., 2007).

A study by Skender et al. (1996) compared weight loss and weight loss maintenance among obese adults randomized into one of three behavioural treatments: diet alone; exercise alone; and a combination of diet and exercise. No significant differences were found among the three treatments' weight loss efficacy. However, at the conclusion of the study's second year follow-up, only the exercise group did not experience weight re-gain. A systematic review conducted by Glenny and colleagues (1997) also examined the effectiveness of obesity interventions in treating obesity and maintaining weight loss. Among obese adults, behavioural and multifaceted interventions appeared moderately useful; however, the methodological limitations of many of the studies precluded definitive conclusions from being drawn. The majority of the studies included in the review did indicate significant weight re-gain during either the initial treatment or follow-up. The results of these studies indicate that it is imperative that

future obesity interventions include skills and strategies to assist individuals in maintaining weight loss.

A systematic review of obesity interventions conducted by Jain (2004) examined the efficacy of surgical, pharmacological, and lifestyle interventions in treating obesity. For the purpose of this thesis research, only lifestyle interventions will be discussed because these are of the strongest relevance to examining coaching's potential as an intervention for obesity. Jain defines lifestyle interventions as those that include "changes in diet, physical activity (or sedentary activity), behaviour therapy...or any combination of the above" (p. 30). The results of this review supported that, for treating obesity among adults in any environment, behavioural counseling is an essential component of obesity interventions, as it helps individuals to make and maintain the physical activity and nutritional changes that facilitate weight loss (Jain). Although coaching is not counseling, it is a behavioural intervention with perceived benefits for exercise and nutritional change adherence.

In a literature review examining psychological interventions for treating overweight and obesity, Shaw et al. (2007) concluded that the greatest reductions in weight were achieved when behavioural therapy (i.e., behavioural and/or cognitive-behavioural approaches) was combined with physical activity and nutrition interventions. However, on its own, cognitive therapy was not an effective adjunct to obesity interventions. This may have been because most of the behaviourally-based interventions utilized strategies such as self-monitoring, acknowledgement, and goal setting, which have been demonstrated to be effective additions to obesity interventions and were absent from the cognitive approaches used (Shaw et al.). However, each of the aforementioned

behavioural strategies is a fundamental component of the coaching method (Whitworth et al., 2007). This fact offers support to the hypothesis that coaching includes skills that will be found to be efficacious in treating obesity among female university students.

Newnham-Kanas and colleagues (under review) conducted a study that utilized a one-group pre-test, post-test research design to evaluate the effectiveness of Co-active life coaching as an intervention for obesity among adults aged 35-55 years who had BMIs of at least 30kg/m^2. Over a period of 8-10 weeks, each of the study's 20 participants participated in 6 to 8, 35-minute telephone coaching sessions with a Certified Personal Co-active Coach (CPCC). A statistically significant reduction in waist circumference, and significant increases in self-esteem and functional health status were among the results ($p < .05$). Qualitatively, after the coaching intervention, participants expressed that they felt better able to make healthy lifestyle choices, had begun to live healthier lifestyles regarding physical activity and nutrition choices, and had greater self-acceptance. These results suggest that Co-active life coaching has potential as an innovative obesity intervention for the general adult population. Thus, it is critical to explore the coaching skills and primary agenda topics that may be related to the method's efficacy as an intervention for obesity among the university-aged population who are developing lifelong health-related lifestyle behaviours.

Health-related research on the university student population is lacking (Gordon, 1995; Stewart-Brown et al., 2000). The majority of the literature documenting lifestyle interventions aimed at university students appears to be focused on improving students' physical activity and/or nutritional behaviours, as opposed to specifically treating obesity (Huang et al., 2003). The intervention that *has* targeted obesity in this sub-population

failed to include the behavioural components that have been identified as influential in determining the effectiveness of obesity interventions aimed at the general adult population (Zou, Tang, & Mo, 2005). The study conducted by Zou and colleagues evaluated the effectiveness of a moderate aerobic exercise program as a treatment for obesity among male undergraduate students. In comparison to the control group, those in the exercise group had significantly reduced BMIs and systolic and diastolic blood pressures at the end of the 18-week intervention. Significant differences were also noted between the control and intervention groups relative to triacylglycerol and high-density lipoprotein cholesterol levels. The long-term maintenance of this reduction in BMI, blood pressure, and body lipids (i.e., total cholesterol and triacylgylcerol) was not examined. As it relates to the current study, the generalizability of this study's results is limited because no female participants or Canadian university students were included in the study's small sample (N=20). Given that the prevalence of obesity among Canadian undergraduate students is increasing, and that there seems to be an absence of research examining behaviourally-based obesity interventions aimed at this population, it is imperative that effective interventions are found to prevent the continuation of the current weight-related trajectory for this vulnerable segment of the population.

Co-Active Life Coaching

Life coaching is a relatively recent approach to enhancing the health of individuals. Inspired by the executive or business-coaching sector, life coaches offer a behavioural intervention through which trained *coaches* mentor their clients toward achieving their goals. An annotated bibliography compiled by Newnham-Kanas et al. (under review) revealed that various schools of life coaching have been utilized

effectively in ameliorating such health issues as asthma, poor cardiovascular health, depression, diabetes, and emotional distress. The bibliography further indicated that life coaching has been used successfully in improving exercise participation, self-determination, and self-efficacy. Thus, life coaching is receiving increased attention as an innovative method for health promotion (Newnham-Kanas et al.). Although the majority of life coaching is considered a-theoretical (Peltier, 2001), Co-active coaching, one particular style of life coaching, has been deemed to be theoretically-grounded in health-behaviour and behaviour-change methodology (Irwin & Morrow, 2005), and an efficacious intervention for obesity among a sample of adults (Newnham-Kanas et al., under review). However, the coaching skills and primary agenda topics that are most impactful, and therefore pertinent to the method's efficacy as an intervention for obesity, have never been directly identified.

Aimed at "...unlocking a person's potential to maximize their own performance" (Whitmore, 1992, p.8), life coaching is therapeutic in nature, but is not the same as counseling (Grant, 2001). Bachkirova and Cox (2005) highlighted that, similar to life coaching, some forms of counseling focus on the client's present and future, rather than the past. However, counseling remains primarily reactive, focusing on curing psychological dysfunction or emotional turmoil (Grant). While emotion is often present during coaching sessions, unlike therapists, coaches do not diagnose nor treat emotional or psychological problems (Whitworth et al., 2007). Instead, coaches work with clients to improve their experiences in life and maintain the resultant changes (Bachkirova & Cox; Grant). As a *help by talking* profession that facilitates self-reflection, as well as personal, relational, and professional growth, it has been suggested that life coaching is merely

"...counseling in disguise..." (Williams & Irving, as cited in Bachkirova & Cox, p.2). Grant proposed that it is the population it supports that most critically differentiates coaching from counseling; coaches work with non-clinical, *normal* populations, whereas psychotherapists work with individuals struggling with psychological and/or emotional dysfunction. The stigma that is often associated with counseling does not extend to coaching, making it attractive to individuals who would not seek out therapy (Bachkirova & Cox). It has been suggested that this is because counseling clients are often conceptualized as in need of *fixing*, whereas coaching clients can be considered an equal partner in the coach-client relationship and be held accountable for changing their lives (Grant; Whitworth et al).

It must be acknowledged that certain elements of the coaching method (e.g., client empowerment, focus on moving the client towards learning and/or action, active listening etc.) are similar to those contained within other models and theories that facilitate behaviour change through talking. For example, Egan's Skilled Helper Model (1997), Self Regulation Theory (Kanfer, 1970), Self Determination Theory (Ryan & Deci, 1985; 2000), and Motivational Interviewing (Miller & Rollnick, 2002) each have attributes that are comparable to those included within the coaching model. However, no other method with an identical combination of cornerstones, principles, and skills has been identified. The current study's aim to identify the Co-active skills that are related to the model's efficacy as an obesity intervention is a necessary step to inform a future, in-depth, comparison of similar *help by talking* techniques.

The current study utilized the Co-active coaching process as developed by Whitworth et al. (2007). This coaching method is rooted in the belief that, as the *experts*

in their own lives, clients have the answers to their questions (Whitworth et al.). In this school of coaching, clients are acknowledged as being *naturally creative, resourceful and whole* (NCRW). This tenet is the first of the four cornerstones that form the foundation of the coaching method. The NCRW belief emphasizes that coaches do not provide their clients with answers, but rather ask questions that elicit the client's self-exploration and self-discovery (Whitworth et al.). The client is in charge of identifying their primary agenda - the *Big A* agenda (i.e., the A/agenda). This is the method's second cornerstone, and refers to the goal of living "a life that is lived from the client's values....[while] balancing the client's priorities [and]...lived fully in each moment" (Whitworth et al., p.130). The client identifies this agenda at the beginning of the coaching relationship, and it is the coach's responsibility to *hold the agenda* (i.e., to make sure that coaching on the topics brought to each session are linked to achieving the client's A/agenda). The third cornerstone is the coach's ability to *dance in the moment.* While the topic and theme of each coaching session is ever-evolving, the coach must be able to adapt and apply coaching skills in service of the client's A/agenda. Finally, the model acknowledges that, because the client's choices are interrelated, *the client's whole life is addressed* in every coaching session (Whitworth et al.). As small as a particular coaching session's topic might be, it always relates to the client's whole life.

The coach-client relationship exists to serve the client's A/agenda, and therefore it is appropriate that a star representing the client's agenda is at the core of the coaching model (Whitworth et al., 2007) –clients are the *stars* of their own lives. Living true to one's agenda is closely linked to the individual's *fulfillment*, *balance*, and *process*, and thus these three elements serve as the fundamental principles of the coaching method

(Whitworth et al.). Coaches use fulfillment, balance, and process coaching to mentor their clients to live in line with their A/agenda (Whitworth et al.). In fulfillment coaching, coaches support their clients in identifying their deepest values and increasing their awareness of the saboteur – the internal voice that encourages the maintenance of the status quo in the client's life – in service of mentoring each client towards "finding and experiencing a life of purpose [in order to reach] one's full potential" (Whitworth et al., p.8). Balance coaching is used when clients express that they are *stuck*, or feel unable to live true to their A/agenda, as a result of seemingly unavoidable circumstances (Whitworth et al.). Balance coaching helps clients to identify their current limiting perspective, experience alternative perspectives, and choose the perspective from which they want to live in order to "restore flow [and]...get clients into action...in a way that brings them ...back in control of their own lives" (Whitworth et al., p.143). While fulfillment and balance coaching are oriented towards moving clients into action, process coaching is used to support the client in experiencing and appreciating the present in service of living "a fully expressed and fully experienced life lived in the moment" (Whitworth et al., p.156).

The principles and skills are used by coaches in a manner that honours the *designed alliance* – the blueprint for the client-coach relationship that is developed during the initial coaching session (Whitworth et al.). The alliance is established to ensure that the client-coach relationship is one that is based on honesty and trust and is most effectively in service of the client. During their training, coaches learn to use the method's contexts - *listening*, *intuition*, *self-management*, and *curiosity* - in each coaching session in order to serve best the client's agenda (Whitworth et al.). A fifth

context represents the outcome of the coach-client relationship; clients are *forwarded into action* and/or have *deepened the learning* in service of living a life that is true to their A/agendas (Whitworth). Unless each coaching session moves the client into a commitment to action (i.e., changing a behaviour) and/or deepens the client's learning, then the coaching is just a pleasant conversation. Thus, the principles, contexts, and skills (e.g., powerful questions, acknowledgements, championing, requests/challenges, accountabilities, inquiries, etc.) allow coaches to work with their clients to forward their clients into some action of their choosing and/or to deepen the client's learning (Whitworth et al.). For a comprehensive description of the coaching skills please refer to Whitworth et al. (2007).

The coaching method was founded on practice and experience, yet it is grounded in at least three well-established theories of behaviour change (Irwin & Morrow, 2005). Many of the constructs contained within the Social Cognitive Theory (SCT; Bandura, 1986), the Theory of Reasoned Action (TRA; Fishbein & Ajzen, 1975), and the Theory of Planned Behaviour (TPB; Ajzen, 1988) are integral components of coaching (Irwin & Morrow). Social Cognitive Theory describes human behaviour as resulting from "...internal personal factors in the form of cognitive, affective, and biological events, behavioural patterns, and environmental influences all operat[ing] as interacting determinants that influence one another bidirectionally" (Bandura, 2001, p.14-15). In particular, at least five of SCT's nine fundamental constructs are identifiable in the coaching model (Irwin & Morrow). According to SCT, behaviour is shaped by *reinforcement* and individual *expectations* regarding the behaviour's probable outcome (McKenzie, Neiger & Smeltzer, 2005). Individual *expectancies* - the subjective value of

the predicted outcome - also influence behaviour (i.e., the greater the value placed on the predicted outcome, the more likely the individual is to perform the behaviour; Bandura, 1986; McKenzie et al.). Coaches are trained to use acknowledgements, accountabilities, challenges, and championing to encourage their clients to live true to their goals and personal values, and thus these skills are used to reinforce behaviours (Irwin & Morrow). Fulfillment coaching supports clients in identifying their personal values, thereby facilitating the recognition of those behavioural outcomes that are of greatest value (Irwin & Morrow; Whitworth et al., 2007). *Self-efficacy*, or the belief that one is competent to perform a desired behaviour and overcome any obstacles that are encountered in the process, is another crucial determinant of human behaviour and health behaviour change (Bandura, 2001). Coaching facilitates the development of self-efficacy with respect to desired behaviours by using championing, a skill through which coaches affirm their clients' strengths and abilities when clients experience self-doubt (Irwin & Morrow; Whitworth et al., 2007). Acknowledgement (not compliments, but rather, affirmations of who the coach sees the client being) of the client's attributes and the accomplishments that are experienced as the client works towards the desired behaviour is another coaching skill that is used to foster self-efficacy (Irwin & Morrow; Whitworth et al.).

The Theory of Planned Behaviour is an extension of the Theory of Reasoned Action (Ajzen, 1988). The TRA was developed to explain voluntary behaviours; therefore those behaviours that are not fully voluntary (e.g., smoking cessation) are left unaddressed (Fishbein & Ajzen, 1975; McKenzie et al.). The TPB serves to explain those behaviours that are not fully volitional (Ajzen). Together, the TRA and TPB propose that behaviour is determined by an individual's: 1) *intention* to perform the desired behaviour;

2) *attitude* towards the behaviour and its outcomes; and 3) credence placed in the *subjective norms* held by those whom the individual respects. *Perceived behavioural control* is similar to the concept of self-efficacy within the SCT, and is a construct within the TPB that "...refers to the perceived ease or difficulty of performing the behaviour and is assumed to reflect past experience as well as anticipated impediments and obstacles" (McKenzie et al., p.154). Accordingly, perceived behavioural control addresses those external obstacles that can impede an individual's pursuit of a desired behaviour (McKenzie et al.). Balance coaching uses *perspectives* to support clients in recognizing that, by examining a situation from a variety of points of view, they are able to move past obstacles and potentially limiting subjective norms and move toward the desired behaviour (Irwin & Morrow). Many of the constructs that were found to be relevant to the consideration of coaching as a method of health-behaviour change (i.e., expectations, expectancies, self-efficacy, reinforcement, and behavioural control), have also been identified as crucial components of obesity interventions aimed at achieving maintained weight loss (Irwin & Morrow; Shaw, et al., 2007). For a complete description of the relevance of these theories to the Co-active coaching technique, refer to Irwin and Morrow (2005).

CHAPTER 3

Methods

Introduction

The following chapter describes the study design and the recruitment processes used, and identifies the study participants. Thereafter, the study procedure, quantitative measures, and the methods of data analysis and interpretation are outlined.

Study Design

Study design rationale. This study utilized a multiple-baseline single-subject research design. This methodology is an experimentally effective and reliable method for assessing behaviour change, and yet underutilized in behaviour change studies (Hayes, 1981; Kazdin, 1982). In the application of this quasi-experimental design, researchers and clinicians are able to examine experimentally the consistency, frequency, and trend of two or more behaviours in one client, or of a similar behaviour across two or more clients (Backman & Harris, 1999; Hayes). Single-subject research methodology allows for an evaluation of an intervention's effectiveness by using subjects to serve as their own controls (Backman & Harris). The ability for subjects to act as their own controls reinforced the appropriateness of this research design for the present study. Because the purpose of the study was to identify the coaching skills and primary agenda topics that make coaching an effective obesity intervention, the study was unable to include a control group; a comparable intervention, but yet one that did not include any of the integral attributes of coaching, could not be identified. The researcher's ability to define the study's independent (coaching) and dependent (obesity, defined by BMI and WC) variables, and to measure reliably the dependent variables, further indicated that a single-

subject research design was appropriate for this study's research focus (Backman & Harris).

Single-subject research design methodology necessitates that the length of the baseline assessment period be varied arbitrarily across study participants in order to strengthen the internal validity of this research design (Hayes, 1981). This variation controls for alternative explanations (e.g., history, maturation) for any behaviour change that occurs when an intervention is introduced (Backman & Harris, 1999; Hayes). Accordingly, the multiple-baseline single-subject methodology allows for the efficacy of innovative interventions (i.e., coaching as an intervention for obesity among female university students) to be examined based on a small sample of individuals prior to the intervention's application to a larger population (Hayes). Although widespread generalizations cannot be made on the basis of this multiple-baseline single-subject research design (Kazdin, 1982), this study's inclusion of both qualitative and quantitative measures will inform the development of future research that examines not only coaching as an intervention for obesity among the general population, but also will determine which of the coaching skills and primary agenda topics are most responsible for the method's hypothesized effects.

Recruitment

To initiate recruitment for this study, posters (Appendix A) were situated in popular locations on-campus at the University of Western Ontario (e.g., the University Community Center, cafeterias in the Social Science Building, Health Sciences Building, Natural Science Building, and university residences). A newspaper advertisement in the student newspaper, *The Gazette*, was also used for participant recruitment (Appendix B).

Participants

Studies using multiple-baseline methodology to examine behaviour across two or more individuals have included as few as four participants (Kazdin, 1982). Accordingly, a sample of five full-time female undergraduate students at the University of Western Ontario was recruited to participate in this study. Recruiting five participants ensured that the sample size would remain sufficient in the event of attrition. Interested individuals contacted the researcher who determined each participant's eligibility for the study. Participants were eligible to participate in the study if they: were female; were between the ages of 17 and 24; were currently enrolled in full-time undergraduate study at the University of Western Ontario; had a self-reported height and weight that produced a BMI value of 30 or greater; had a self-reported steady body weight over the past six months (i.e., body weight had not fluctuated by more than five pounds); spoke English fluently; and were not under a physician's care for any co-morbidities (e.g., diabetes). These seven considerations were determined over the phone during the researcher's initial contact with the potential participant (Appendix C), and the nature of the study and of coaching was explained. The researcher also informed potential participants of the coaching fee of five dollars per session. The coaching model necessitates that an investment be made by clients to encourage their buy-in to the coaching process, thereby ensuring that they will be punctual for each coaching session, will be committed to the full duration of the study, and will be dedicated to doing the required work between sessions (Whitworth et al., 2007). The typical fee per coaching session is $80 to $120. In light of the financial constraints experienced by many university students, the per session fee was set at five dollars because this amount was thought to be sufficiently substantial

to elicit the participants' buy-in, but not so costly that it would serve as a barrier to participation. Participants paid the coaching fee in full at their initial meeting with the researcher. Unbeknownst to the participants at the time of payment, the sum of their investment was returned to them at the study's conclusion, accompanied by a letter explaining the researcher's reasons for establishing the fee in the first place (Appendix D).

Twenty individuals contacted the researcher to participate in this study. Of these, 11 individuals met the study's eligibility requirements; the first five of those who confirmed their interest in participating became the study participants. Accordingly, each participant was assigned a participant number (i.e., the first enrolled was identified as participant one, the second participant was deemed participant two, etc.). Once participant involvement was confirmed, the participants were assigned randomly to their coach; the coaches were labeled *A* and *B* based on the alphabetical order of their last names, and the first, third and fifth confirmed participant was assigned to *coach A*, and participants two and four were assigned to *coach B*. To assess the demographic profile of the sample, the study participants completed a demographic questionnaire at their initial meeting with the researcher (Appendix E). Ethical approval was received from the University of Western Ontario's Office of Research Ethics (Appendix F).

Participant Profiles

Participant one. Participant one was a 20-year-old, white female in her third year of undergraduate study, majoring in Media Theory and Production. She lived off-campus with one housemate, and held a part-time job while attending university.

Participant two. Participant two was a 22-year-old, white female in her fifth year of an honours degree in biochemistry and cell biology. She lived off-campus with three housemates, and held a part-time job while attending university.

Participant three. Participant three was a 21-year old, white female in her fifth year of a degree specializing in biology and majoring in psychology. She lived off-campus with one housemate, and held a part-time job while attending university.

Participant four. Participant four was a 22-year-old, white female in her fourth year of an honours degree specializing in Health Sciences. She lived off-campus with one housemate, and held a part-time job while attending university.

Participant five. Participant five was a 19-year-old, white female in her second year of a science degree, specifically focused in animal physiology and applied math. She lived off-campus with three housemates, and held a part-time job while attending university.

Procedure

Once participant eligibility was confirmed, individual introductory meetings were scheduled with the researcher. During this meeting, each participant came to a pre-determined room in the Health Sciences Building at the University of Western Ontario where she was greeted by the researcher who: explained the nature of the intervention study; provided the participant with a letter of information (Appendix G) and consent form (Appendix H); and measured the height, weight, and WC of the participant. Once the participants' obesity status (via BMIs) was verified, they completed the 36-item Short-Form (SF-36) Health Survey (Ware, 1997; Appendix I), and the Rosenberg Self-Esteem Scale (Rosenberg, 1989; Appendix J). This served as the first baseline assessment

for all participants. To limit the influence of social desirability (Zerbe & Paulhas, 1987) on survey completion and coaching participation, the researcher –who did not reveal the assessment information to the coaches during the study- administered all of the assessments. Honesty demands whereby participants were informed of the importance and necessity that they answer all assessment and interview questions honestly, were also used to encourage accurate reporting (Bates, 1992). Participants were also told that their comments would not be revealed to their coaches, but would be presented as simply coming from participants in this study. At the conclusion of the introductory meeting, the researcher interviewed each participant for approximately 20 minutes using a semi-structured interview guide (Appendix K). The purpose of the interview was to gather qualitative data that provided the researcher with insight into each participant's experiences of being obese. The six primary questions that were designed to address this purpose were:

- What is it like being you?
- What does your weight represent?
- What would you have to say yes and no to, to make your ideal weight come true?
- What is the story you tell yourself about your weight?
- How would you describe your overall well-being?
- What is your relationship with yourself?

To ensure the integrity of the information obtained, the researcher used *member checking* (Guba & Lincoln, 1989), or paraphrasing, throughout the interview to ensure the accurate interpretation of the participants' comments. At the end of the interview, the

next baseline assessment was scheduled. In accordance with multiple-baseline methodology, participants were required to complete a different number of baseline assessments (Hayes, 1981). Repeated baseline measurements of the issue under examination (i.e., obesity, as assessed according to BMI and WC) allowed for estimates of the issue's trend and stability to be captured for each participant prior to implementing the coaching intervention. These served as a basis for comparison for the researcher, against which treatment effects may be seen (Hayes). It is unlikely that a trend across data points would occur by chance, and therefore repeated measures –during both the baseline and intervention phases of the study– also served to enhance the validity of the study's results (Backman & Harris, 1999). Participant one had her initial coaching session after four baseline assessments, while participants two and three completed three baseline assessments, and participants four and five underwent two baseline assessments, with baseline measurements spaced one week apart. The researcher asked the participants not to alter their behaviour during the pre-intervention period so that an accurate portrayal of the stability, trend, and level of each participant's height, weight, and WC could be documented prior to receiving coaching. At each assessment, participants had their height, weight, and WC measured.

Two Certified Professional Co-active Coaches (CPCCs), who completed their training and certification through the Coaches' Training Institute, donated their time for this study. In addition to their work in coaching, both CPCCs were university professors with PhDs in the health sciences with a research focus on obesity and physical activity. The CPCCs were not involved in the introductory meeting, or in the data collection or analysis phases of this study. The participants' first session with their coach was the only

in-person meeting. During this encounter, the coach answered any of the client's remaining questions, explained the nature of coaching, and collaborated with the client to create the *designed alliance* for their coach-client relationship, and determine the client's primary agenda. After this first session, the researcher contacted each participant to schedule the remaining weekly 30-minute telephone sessions with the CPCC. The average number of total coaching sessions received was 9 (range 5-10), and missed sessions were re-scheduled when possible. For each coaching session, the participant called the coach and identified what she wanted to focus on for that particular session. The coach's role was to help the participant explore what she wanted to achieve and/or what actions should be taken in pursuit of her goal. The topics that were discussed and the skills used within each session varied widely dependent upon each individual's needs. All coaching sessions were audio-recorded to allow for inductive content analysis to be performed on the data in order to identify the prominent coaching skills and primary agenda topics in each participant's sessions. There was no difficultly in obtaining participant consent to audio record the coaching sessions. During the study period, participants returned to the Health Sciences Building every week to have their height, weight, and WC measured. Throughout the study, the researcher provided the participants with e-mail reminders one day prior to each assessment and coaching appointment. Following the completion of the intervention, and prior to discussing study findings, each coach provided the researcher with a reflection paragraph outlining their perception of each client's primary agenda topic and priorities in, and commitment to, the coaching process.

At the conclusion of the study, the body composition, functional health status, and

self-esteem assessments were conducted to identify any changes that occurred by the end of the coaching intervention. Participants also had a second in-person, semi-structured interview with the researcher. Prior to beginning the interview, the researcher again communicated honesty demands to the participants, emphasizing that there were no right or wrong answers to the interview questions, and the importance of the participants' accurate reporting. During the final interview, open-ended questions aimed at assessing whether the experience of being obese had changed for any of the participants, and providing the researcher with insight into the participants' experiences of being coached, were asked (Appendix K). The six primary questions asked during the post-intervention interviews were:

- What is it like being you now compared to the beginning of the intervention?
- What have you learned from your coaching experience?
- What has changed since the beginning of the intervention?
- What actions have you taken?
- How do you see what you have learned impacting you in the near future?
- What other feedback do you have with regard to the coaching process?

Quantitative Measures

BMI is the most frequently used method for diagnosing obesity at the population-level (Statistics Canada, 2006b; WHO, 2006). As previously stated, BMI is calculated by dividing weight in kilograms by squared height in meters (Statistics Canada, 2006a). BMI does not capture the increased risk of obesity-related illnesses associated with abdominal obesity (Katzmarzyk, 2004), and therefore weekly WC measurements also were recorded. Waist circumference serves as an indicator of abdominal obesity, and captures

the elevated risk of cardiovascular disease and diabetes that is related to central obesity (Banning, 2005). The researcher calculated BMI by inserting the participants' height and weight, measured using the same digital scale each week, into an online BMI calculator (National Health Institutes, no date). Waist circumference was measured weekly; participants lifted their shirts slightly to expose their navels, ensuring the researcher's accurate placement of the measuring tape.

The Short-Form 36 (SF-36) Health Survey is regarded as a valid and reliable method for assessing functional health status and well-being among the general population (Ware, 2000). The SF-36 has been shown previously to have an alpha reliability coefficient of greater than 0.85 (Brazier, et al., 1992). The tool is divided into eight scales and includes a total of 36 questions (e.g., "In general, would you say your health is: Excellent/ Very good/ Good/ Fair/ Poor"; "During the past 4 weeks", 1) "How much did pain interfere with your normal work [including both work outside the home and housework]?"; and 2) "How much of the time has your physical health or emotional problems interfered with your social activities [like visiting with friends, relatives, etc.]?)". The SF-36 has been used effectively to estimate the burden of disease for over 130 conditions (Ware, 2000). The survey's 36 items have pre-assigned values for scoring purposes (Ware, 1997). The items for each of the survey's eight scales were summed independently, and a raw score for each scale was calculated. The scales' raw scores were then independently transformed into a 0 to 100 scale using the formula provided by Ware (1997). The eight scales were then condensed, using an Excel program designed by Kalantar-Zadeh, Kopple, Block and Humphreys (2001) based on established scoring guidelines, into two summary measures, representing the mental and physical dimensions

of health (Ware, 1997; 2000). The total SF-36 score, which is equal to the average of the eight subscale scores, was also calculated for each participant (Kalantar-Zadeh, et al.). For the eight scale-scores, the summary measure scores, and the total SF-36 score, a higher score indicated a more positive health status (Ware, 1997).

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) is a validated and reliable self-report measure of global self-esteem. The tool has been found previously to have an alpha reliability coefficient ranging between 0.77 and 0.88 (Blascovich & Tomaka, 1993; Rosenberg, 1986). The scale's 10 items are answered on 4-point Likert scales, with responses ranging from *strongly agree* to *strongly disagree*. Examples of the scale's questions include: "I feel that I'm a person of worth, at least on an equal plane with others"; and "On the whole, I am satisfied with myself". A value of one through four was assigned to each item, with the highest score assigned to the most positive response (Rosenberg, 1965). The ratings assigned to each item were summed to calculate the scale's overall score (Rosenberg, 1965). A higher score reflected more positive self-esteem (Rosenberg, 1965).

Data Analysis and Interpretation

Quantitative measures. Due to this study's small sample size, it would be difficult to demonstrate statistically significant changes in BMI, WC, functional health status, and self-esteem. Accordingly, BMI and WC values for each participant's baseline and intervention assessments were graphed and analyzed using *visual inspection* (Kazdin, 1982). Visual inspection is the primary method of data analysis for single-subject studies and is used to make a "...judgment about the reliability or consistency of intervention effects" by visually examining the intervention effects at different points during the study

period (Kazdin, p. 232). When visually inspecting data, particular attention must be paid to: 1) changes in mean and level; and 2) changes in trend and latency of the change, which are, respectively, characteristics of "...the magnitude of the change across phases and the rate of these changes" (Kazdin, p. 233). These factors were each considered independently and each participant's data were analyzed separately. Examining the data for *changes in the mean* reflects whether participants' average BMI and WC values differed across the baseline and intervention phases. This analysis was used to determine whether the coaching intervention was associated with consistent changes in BMI and/or WC. Examining the graphic data for *changes in level* (i.e., whether participants' BMI and/or WC shifted between the last baseline assessment and the first coaching session) is necessary in order to assess whether the intervention had a reliable effect (Kazdin). The slope of each participant's data during the baseline and intervention phases was examined for the presence of *changes in trend.* A change in trend indicates whether there was a systematic increase or decrease in BMI and/or WC values when coaching was implemented (Kazdin). Finally, the *latency of the change* was examined by visually inspecting the data to determine the length of time, after the onset of coaching, before a treatment effect (i.e., changes in BMI and/or WC) was observed (Kazdin).

Results of the pre and post SF-36 Health Survey and the Rosenberg Self-Esteem Scale were assessed for evidence as to whether a *clinically significant difference* was achieved. Clinical significance "refers to the practical value or importance of the effect of an intervention – that is, whether it makes any real difference to the clients..." (Kazdin, 2001, p.455). This method for evaluating an intervention's efficacy considers tests of statistical comparison (e.g., effect size), as well as the client's subjective interpretation of

the importance of the intervention's effects (Kazdin 1999; 2001). It is imperative that the client's perspective be taken into account when evaluating a clinically significant change because large treatment effects, demonstrated statistically, do not necessarily reflect a change that is of perceived importance to the client (Jacobson & Truax, 1991; Kazdin, 1999, 2001). Evidence of *actual* change (i.e., the results of a statistical comparison) was used to validate the *perceived* change (i.e., the clients' subjective experiences), in determining whether a clinically significant change was achieved (Kazdin, 1999). Cohen's (1988) rule for interpreting effect size, a statistical method for examining the magnitude of an intervention's effect on dependent variables, was used to evaluate objectively participants' pre-post health status and self-esteem scores for evidence of actual change. Cohen operationally defined *small* (d=0.2), *medium* (d=0.5), and *large* (d=0.8) effects as follows: a small effect is one that is not noticeable to the human eye; a medium effect is noticeable to the unaided eye of a trained researcher/clinician; and a large effect is noticeable to the unaided eye of an untrained observer (e.g., study participant). In the current study, it was determined that evidence of a *large* effect on participants' health status and/or self-esteem would best support the conclusion that a clinically significant change had occurred, as this would represent a change that was noticeable to the study participants. The results of this statistical interpretation were supplemented with qualitative information obtained through the participants' post-intervention interviews, during which they were given the opportunity to speak about the relative importance of the changes that resulted from their participation in the intervention. Accordingly, statistical evidence of a *medium* effect on participants' health status and/or self-esteem, when coupled with strong qualitative statements as to the

importance of the change, was also deemed sufficient to support the conclusion that a clinically significant change had occurred.

Individual interviews. Each interview was recorded and transcribed verbatim by a research assistant. Inductive content analysis (Patton, 1987) was used to analyze the information collected at the pre and post-intervention participant interviews. The researcher and a second research assistant, who was not involved in the study, independently analyzed the transcripts, gaining a comprehensive understanding of the experiences shared by participants and identifying pertinent themes in the responses. Next, the researcher and research assistant met to compare the identified themes, and determined which most accurately represented the participants' experiences of being obese and their experiences in being coached. Nvivo software was used to code the transcripts and aid in the analysis and identification of common themes. Confirmability of the identified themes (as described by Guba & Lincoln, 1989) was achieved through this triangulated review process thereby controlling researcher bias and promoting the accurate assessment of the qualitative data.

Coaching transcripts. Each coaching session was recorded to allow for inductive content analysis, which would inform the identification of the coaching skills and primary agenda topics used in coaching each client. Fifty-percent of each participant's sessions were chosen randomly for analysis, and transcribed verbatim by a research assistant. Data saturation was reached during the analysis of these transcripts, and therefore the remaining transcripts were not transcribed. Inductive content analysis, as described by Patton (1987), and informed by the list of skills within the coaching method, was conducted. The researcher and a trained Co-active coach, who was not involved in

the study, independently analyzed the coaching transcripts to gain a comprehensive understanding of the comments made and to identify the pertinent themes (i.e., agenda topics) in each participant's sessions. The specific skills used in the coaching sessions were also identified for the purpose of naming the three to four skills that were used with the greatest frequency in coaching each participant (Appendix L). Next, the researcher and the external coach met to compare the identified coaching skills and primary agenda topics. The researcher later reviewed the coaches' reflections for each coach-client dyad to further verify the accuracy of the identified coaching skills and agenda topics. Confirmability (Guba & Lincoln, 1989) of the identified skills and agenda topics was again achieved through this triangulated review process. Each participant's transcripts were analyzed independently. This allowed for the coaching skills and primary agenda topics of participants whose anthropometrics decreased to be compared with those identified among participants whose measurements did not show desirable changes. Nvivo software was used to the code transcripts to aid in the analysis and identification of frequently used coaching skills and primary agenda topics.

CHAPTER 4

Results

Introduction

The following chapter presents the results of: 1) the visual inspection of participants' BMI and WC; 2) an assessment of clinically significant changes in participants' self-esteem and functional health status; 3) the common themes for the pre and post-intervention interviews, and; 4) the primary agenda topics and most frequent coaching skills used in coaching each client.

Visual Inspection

Body Mass Index

Participant one's mean BMI decreased from a baseline mean of 30.5 kg/m^2 to 29.65 kg/m^2 during the intervention phase. The level decreased 0.2 kg/m^2, from a baseline level of 30.4 kg/m^2 to 30.2 kg/m^2 in the intervention phase. The baseline slope of -0.02 increased to -0.13 in the intervention phase. BMI decreased consistently throughout the study period. After using visual inspection, there appeared to be a decrease in participant one's BMI across the baseline and intervention phases. BMI data for participant one is presented in Figure 1.

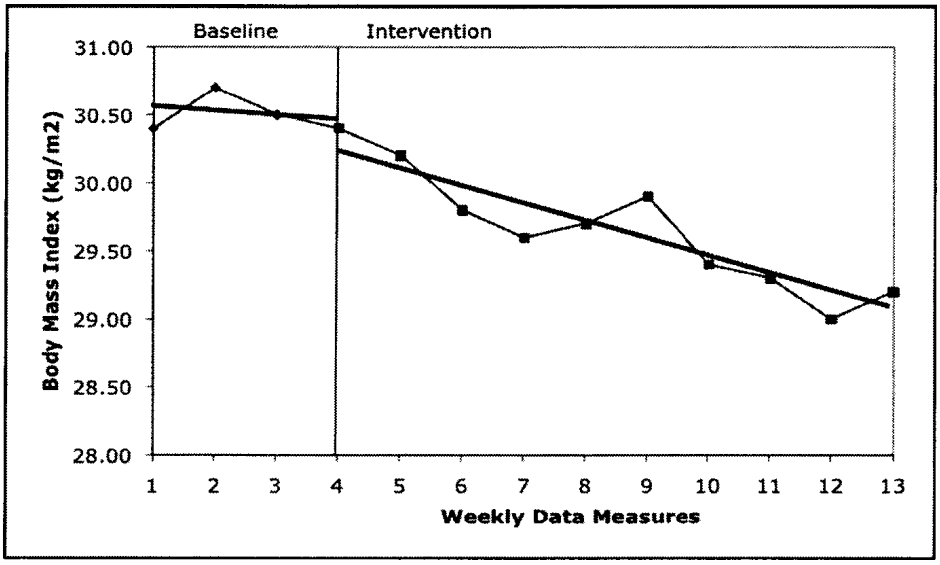

Figure 1. Body Mass Index Measurements for Participant One.

Participant two's mean BMI increased from a baseline measure of 32.07 kg/m^2 to 32.44 kg/m^2 during the intervention phase. The level was 0 kg/m^2, the baseline level of 32.4 kg/m^2 remained at 32.4 kg/m^2 in the intervention phase. The baseline slope of +0.02 decreased to +0.007 in the intervention phase. BMI fluctuated throughout the study period. The use of visual inspection did not indicate that there was a change in participant two's BMI across the study periods. BMI data for participant two is presented in Figure 2.

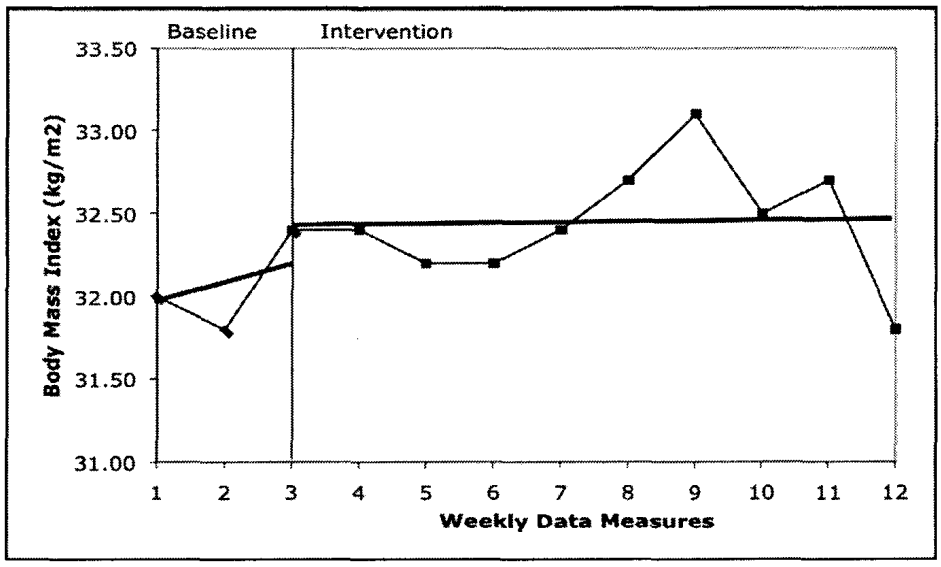

Figure 2. Body Mass Index Measurements for Participant Two.

Participant three's mean BMI increased from a baseline measure of 35.83 kg/m^2 to 36.82 kg/m^2 during the intervention phase. The level increased 0.8 kg/m^2, from a baseline level of 35.7 kg/m^2 to 36.5 kg/m^2 in the intervention phase. The baseline slope of -0.1 increased to +0.19 in the intervention phase. BMI increased relatively consistently throughout the intervention phase. After using visual inspection, there appeared to be an increase in participant three's BMI across the baseline and intervention phases. BMI data for participant three is presented in Figure 3.

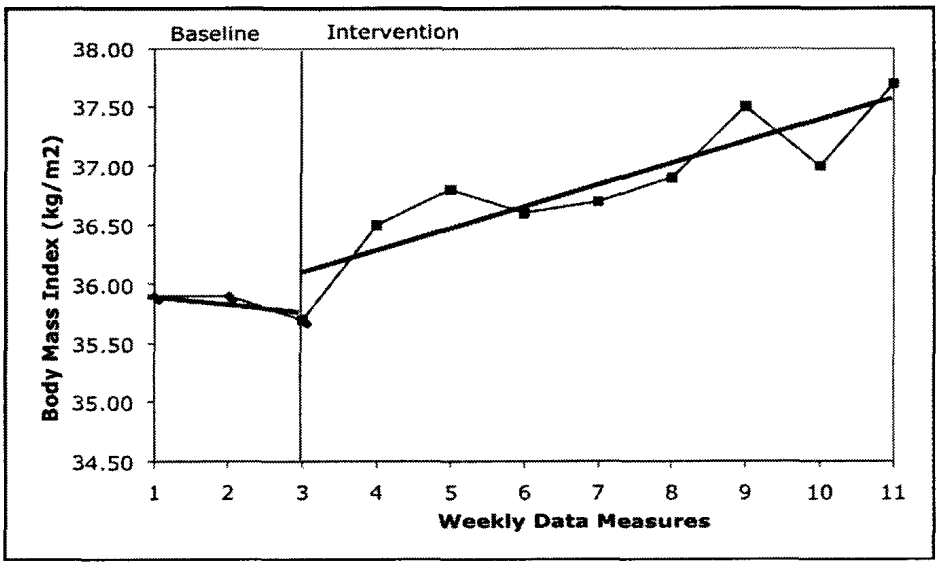

Figure 3. Body Mass Index Measurements for Participant Three.

Participant four's mean BMI increased from a baseline measure of 34.75 kg/m^2 to 34.80 kg/m^2 during the intervention phase. The level decreased 0.2 kg/m^2, from a baseline level of 35.0 kg/m^2 to 34.8 kg/m^2 in the intervention phase. The baseline slope of +0.5 decreased to +0.02 in the intervention phase. BMI fluctuated considerably throughout the intervention phase. It must be acknowledged that participant four's baseline mean and/or slope may have been skewed as a result of including only two data points (Kazdin, 1982). The use of visual inspection did not indicate that there was a change in participant four's BMI across the study periods. BMI data for participant four is presented in Figure 4.

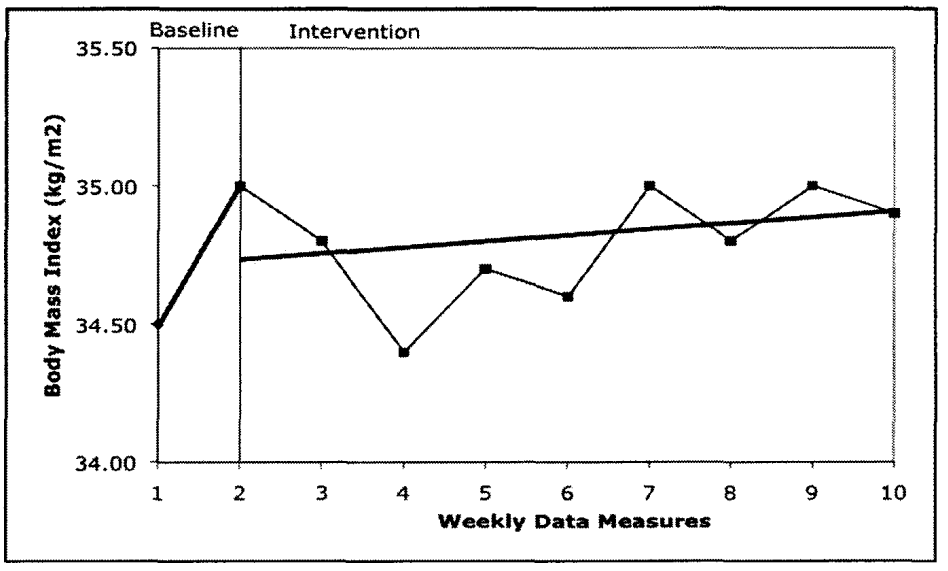

Figure 4. Body Mass Index Measurements for Participant Four.

Participant five's mean BMI increased from a baseline measure of 39.6 kg/m^2 to 39.73 kg/m^2 during the intervention phase. The level increased 0.3 kg/m^2, from a baseline level of 39.4 kg/m^2 to 39.7 kg/m^2 in the intervention phase. The baseline slope of -0.4 decreased to +0.01 in the intervention phase. BMI fluctuated throughout the intervention phase. The small number of baseline data points may have skewed the baseline mean and/or slope (Kazdin, 1982). After using visual inspection, there did not appear to be a change in participant five's BMI across the baseline and intervention phases. BMI data for participant five is presented in Figure 5.

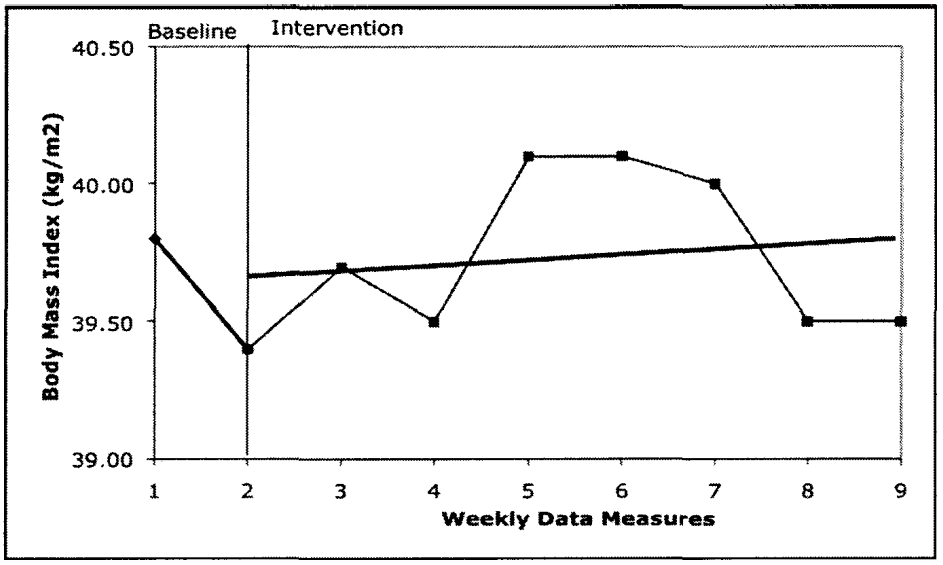

Figure 5. Body Mass Index Measurements for Participant Five.

To summarize, BMI decreased for participant one, increased for participant three, and remained stable for participants two, four, and five. Therefore, a consistent intervention effect was not detected.

Waist Circumference

Participant one's mean WC decreased from a baseline measure of 101.12 cm to 95.06 cm during the intervention phase. The level decreased 3.17 cm, from a baseline level of 100.33 cm to 97.16 cm in the intervention phase. The baseline slope of +0.57 increased to -0.97 in the intervention phase. WC decreased consistently throughout the intervention phase. After applying visual inspection, there appeared to be a decrease in participant one's WC across the baseline and intervention phases. WC data for participant one is presented in Figure 6.

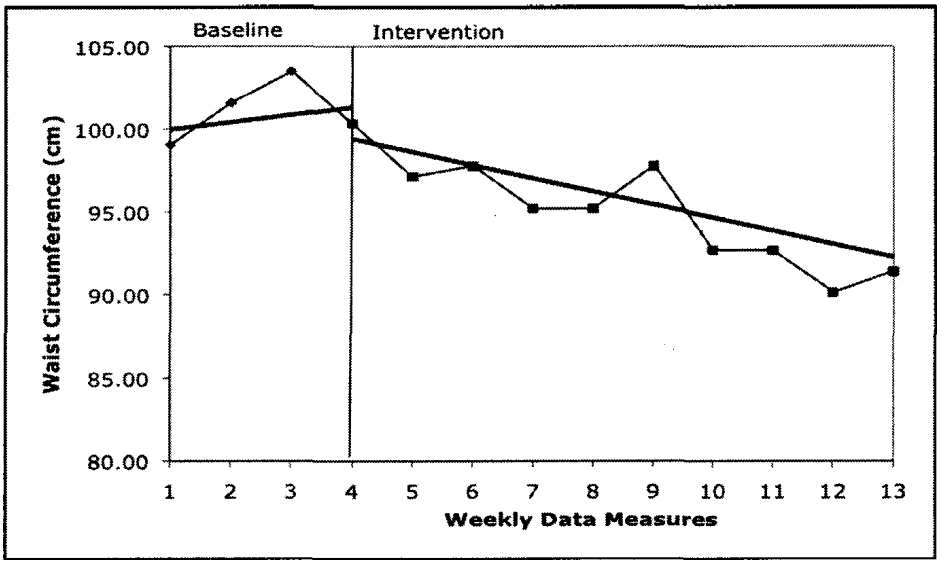

Figure 6. Waist Circumference Measurements for Participant One.

Participant two's mean WC increased from a baseline measure of 103.29 cm to 104.01 cm during the intervention phase. The level increased 5.08 cm, from a baseline level of 101.6 cm to 106.68 cm in the intervention phase. The baseline slope of -1.91 decreased to -0.15 in the intervention phase. WC fluctuated throughout the intervention phase. After applying visual inspection, there did not appear to be a change in participant two's WC across the baseline and intervention phases. WC data for participant two is presented in Figure 7.

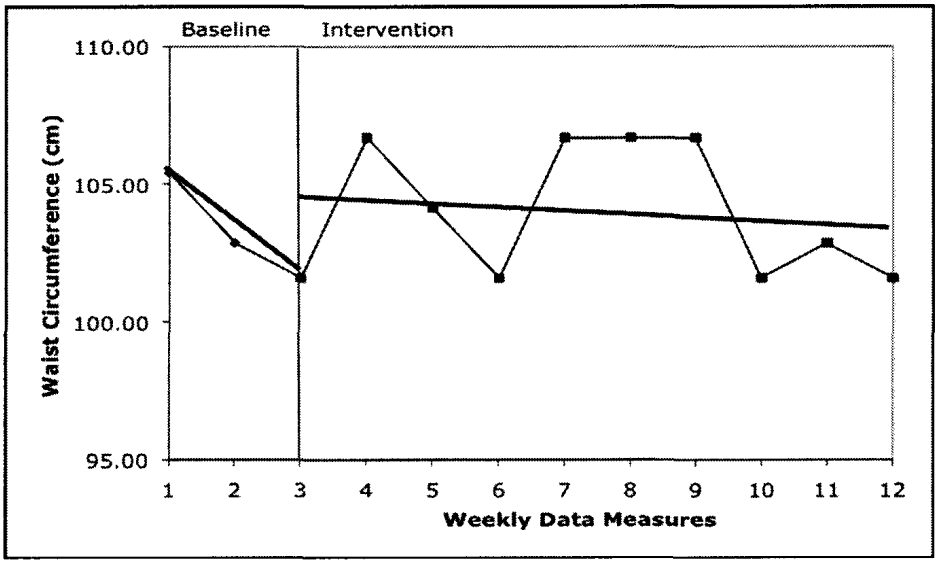

Figure 7. Waist Circumference Measurements for Participant Two.

Participant three's mean WC decreased from a baseline measure of 107.95 cm to 102.31 cm during the intervention phase. The level increased 1.27 cm, from a baseline level of 102.87 cm to 104.14 cm in the intervention phase. The baseline slope of -3.81 decreased to +0.08 in the intervention phase. After applying visual inspection, there did not appear to be a change in participant three's WC across the baseline and intervention phases. Waist circumference data for participant three is presented in Figure 8.

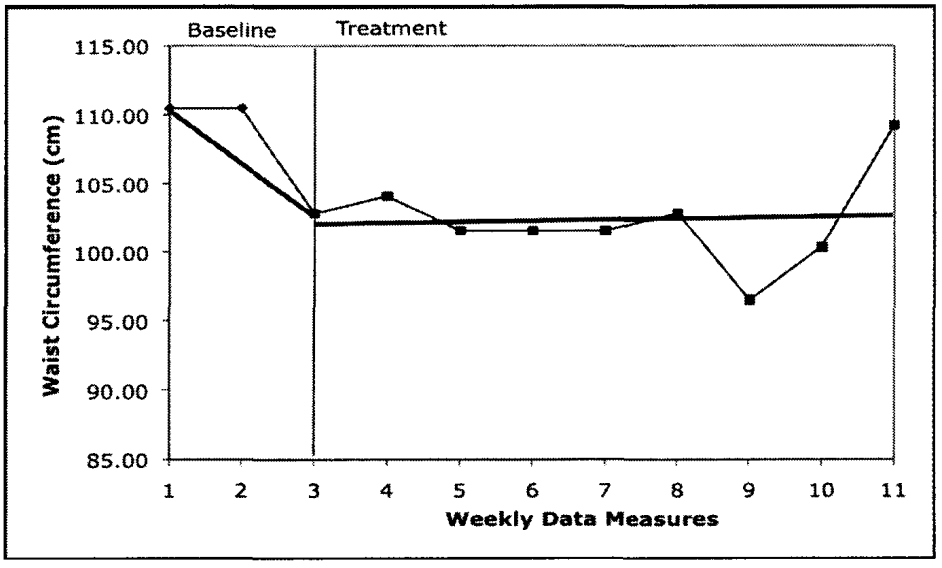

Figure 8. Waist Circumference Measurements for Participant Three.

Participant four's mean WC decreased from a baseline measure of 108.90 cm to 105.20 cm during the intervention phase. The level decreased 5.08 cm, from a baseline level of 109.22 cm to 104.14 cm in the intervention phase. The baseline slope of +0.64 decreased to -0.31 in the intervention phase. It should again be acknowledged that the small number of baseline data points might have skewed the baseline mean and/or slope (Kazdin, 1982). Participant four's WC fluctuated throughout the intervention phase; however after applying visual inspection, participant four's WC appeared to decrease across the baseline and intervention phases. WC data for participant four is presented in Figure 9.

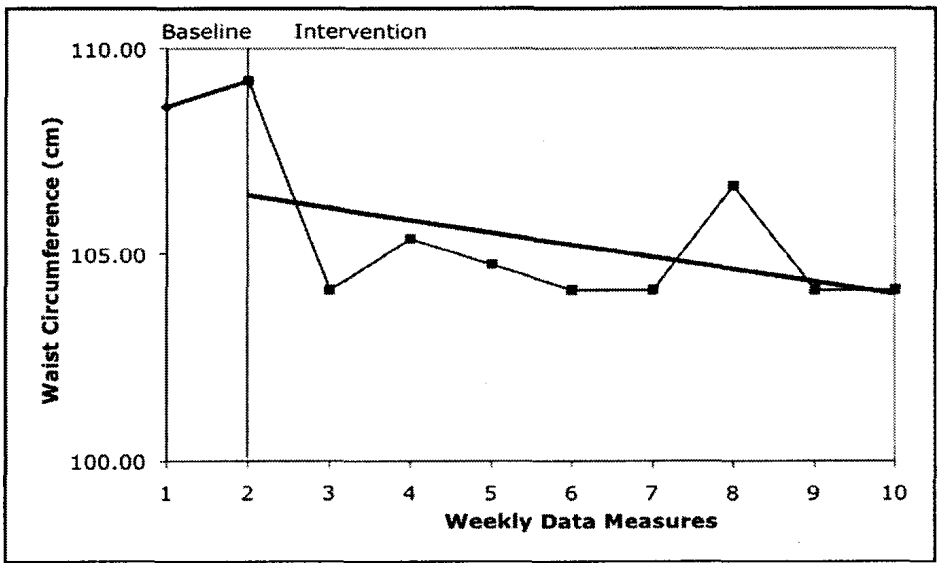

Figure 9. Waist Circumference Measurements for Participant Four.

Participant five's mean WC decreased from a baseline measure of 120.65 cm to 113.98 cm during the intervention phase. The level decreased 5.08 cm, from a baseline level of 119.38 cm to 114.3 cm in the intervention phase. The baseline slope of -2.54 decreased to -0.65 in the intervention phase. The small number of baseline data points may have skewed the baseline mean and/or slope (Kazdin, 1982). Participant five's WC fluctuated throughout the intervention phase. After applying visual inspection, there

appeared to be a trend towards a slight decrease in participant five's WC across the baseline and intervention phases. WC data for participant five is presented in Figure 10.

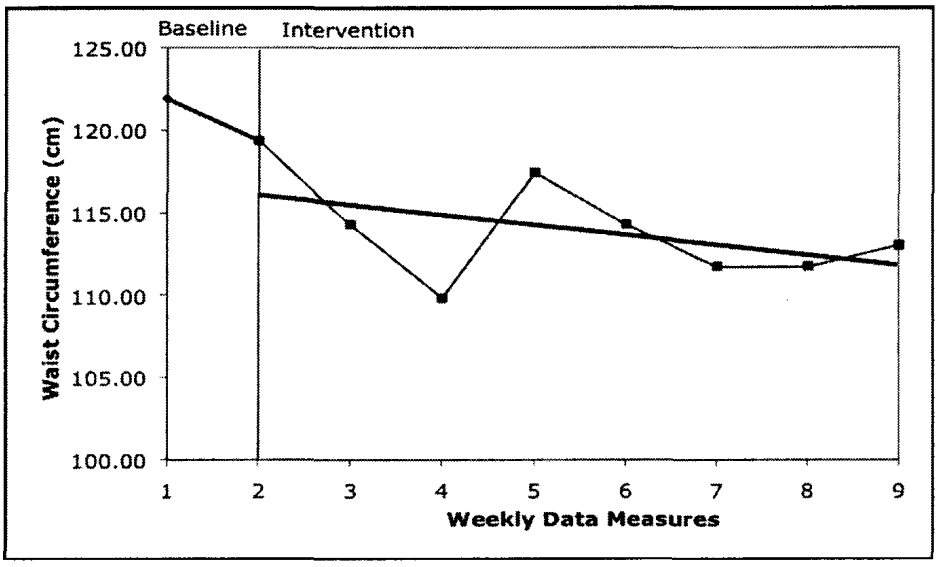

Figure 10. Waist Circumference Measurements for Participant Five.

To summarize, WC decreased for participants one, four, and five, and remained stable for participants two and three. This constitutes a trend towards a reduction in WC.

Clinical Significance

The qualitative data collected from the coaching session transcripts was "...important in building an understanding of the theory underlying the relationships revealed in the quantitative data" (Dooley, 2002, p.345). Accordingly, pre-post changes in self-esteem and functional health status were evaluated for clinical significance by assessing: 1) statistical change through an examination of effect size using Cohen's *d*; and 2) qualitative comments made during the participants' post-intervention interviews with the researcher.

Self-Esteem

Participants' scores on the Rosenberg Self-Esteem Scale revealed a moderate to large increase in self-esteem (Cohen's $d = 0.79$). This represents a border-line large

effect size between pre-post scores, where a large effect, as defined by Cohen (1988), is $d \geq 0.8$. Practically speaking, a large effect is one that is perceptible not only to the researcher, but also to the untrained eye of the participants (Cohen).

Qualitatively, two participants, one who experienced a reduction in WC and the other whose anthropometric measurements remained stable, spoke specifically to improved self-esteem during their post-intervention interviews with the researcher. When asked what, if any, impact coaching had on her well-being, one participant responded, "Self-esteem for sure because I'm happier with myself now." All five participants spoke of improved self-acceptance. One participant said, "...it's just... realizing that even if somebody doesn't like me for who I am, that doesn't matter because I like who I am." Another participant reported no longer feeling like she needed to change to please those around her. She said, "...throughout the whole day I won't feel bad about myself, I won't feel that I have to change anything, I just am and I'm happy, and it's good." Collectively, the effect size and qualitative statements indicate a clinically significant change (i.e., improvement) in participants' self-esteem upon completion of the coaching intervention.

Functional Health Status

Participants' scores on the physical health dimension of the SF-36 revealed a considerable increase in physical health status (Cohen's $d = 0.88$). This represents a large effect size between participants' pre-post scores, and one that should be noticeable to the untrained eye of participants (Cohen, 1988). Participants' scores on the mental health dimension of the SF-36 revealed a moderate improvement in mental health status (Cohen's $d = 0.74$). This represents a medium effect size between participants' pre-post scores, and by Cohen's definition, a change that should be noticeable to the researcher,

but not to the participants. Finally, participants' total SF-36 scores revealed a substantial increase in overall health status (Cohen's $d = 0.90$). This represents a large effect size between participants' pre-post total SF-36 scores.

Qualitatively, one participant specifically spoke of perceiving an enhanced overall health status after the coaching intervention. She said, "I feel that my...overall health has gotten better. And not just my [physical] health,...speaking about physical, emotionally, psychologically,...I feel better." At the end of the intervention, four participants spoke of making their physical health a priority, reporting an increased regularity of physical activity participation, and one participant indicated making strives to eat more healthily. As previously discussed, all five participants reported increased self-acceptance at the end of the intervention. Further, when asked what had changed since the beginning of the intervention, one participant responded, "It's not as much pressure to be perfect." In response to the same question, two participants reported improved productivity. One said, "...[I am] a lot more focused because I'm not...thinking about little stuff about myself,...[coaching] did help me to focus on things that are important, like school...I think it's nice not having my brain clouded." Collectively, the effect sizes and qualitative statements indicate a clinically significant change (i.e., improvement) in participants' physical, mental, and total (overall) health status upon completion of the coaching intervention.

Qualitative Results

Pre-Interviews

To gain insight into the their experiences of being obese, participants were asked to describe their relationship with themselves and their weight; their overall well-being;

and what they would have to change to reach their ideal weight, during their initial interview with the researcher. The main themes that were apparent in the participants' responses were that they: 1) struggled with a number of barriers to losing weight; 2) experienced pressure from family members to lose weight; 3) felt their weight negatively impacted their relationship with themselves; 4) felt remorse for gaining weight and making unhealthy lifestyle choices; and 5) were self-conscious about their weight.

1) Barriers to losing weight. Participants emphasized being too busy or tired to consistently exercise; feeling uncomfortable exercising at the gym; and frustration with their lack of weight-loss progress as their key challenges in losing weight. One participant stated, "I'd go [to the gym] when I could, but I didn't make it...part of my daily or weekly schedule...I kind of went when I could and I couldn't always make it...." Another participant echoed:

> I do actually make it to the gym once a week maybe and then...I don't know, afterwards and the next day I'm like "ok I'm going to go, I'm going to go", and then I'm just like "oh I'm too tired" and then I won't [go].

When speaking about exercise, three participants expressed their discomfort in exercising at a gym. One said, "I need to find a fat people gym or an old people gym. I just go to the Athletic Club during the day because that's when all the retirement home people come and then I don't feel so bad...." Another participant answered similarly, stating, "...when I go to the gym, I feel like...some people are so buff and I look stupid when I go...." Three participants also expressed frustration with the absence of noticeable results from previous attempts to lose weight. One participant said, "...I worry that [losing weight] will be the one struggle that I will have for my life...." While another expressed,

"...I'm really trying to get [the weight] off. I'm eating better, but it's not coming off -it's not getting off as fast as I hoped it would."

All five participants expressed an awareness of the lifestyle choices they would have to make to reach a healthier weight. When asked what they would have to say *yes* to and *no* to achieve their ideal weight, one participant responded:

> I would have to say yes to changing my habits, I would definitely have to start packing my lunch and preparing my food at home....I would have to...say no to watching TV all the time, and say yes to going to the gym.

Another participant emphasized the importance of planning, saying that she would have to do "...more planning of what I eat for the day and making sure I have time to go to the gym several times a week...."

2) Familial pressure to lose weight. Three participants described experiencing pressure from family members to lose weight. For one participant this began early in her childhood. She said:

> ...when I was in grade 6, my grandpa was like "oh you should go to Weight Watchers". It was always...a stress in the back of my mind and even though my dad was like, "no no no, don't worry"... my grandpa said that and it impacted me.

For two participants, their mother's own struggle with weight appeared to be the underlying source of pressure to lose weight. One stated, "...my mom keeps trying to put a lot of pressure [on me]. She's overweight too and she tries to make me feel like I let her down by putting [the weight] all on...." Another explained:

> ...my mom had weight problems, so she's always nagging me about...you know, "I should be watching what I eat". Or "Are you sure you want to eat that?" "Why

don't you go to the gym?" "Did you go to the gym today?"...And just...always nagging me about that stuff and it's never in a positive way.

Two participants who had experienced family pressure to lose weight spoke of their conviction to lose weight for themselves, as opposed to satisfying the demands of those around them. One participant stated, "...it has to be...myself telling me to do it, and not somebody else saying, "you should do this"." Another participant, who had not experienced familial pressure to lose weight, expressed a similar point of view, explaining, "I think that sometimes...you don't think it's for other people, but it is, and now I realize that the other people don't matter, it's about me and about my life and I want to be healthy as a person."

3) Relationship with self. While the majority of participants acknowledged having positive personal attributes during the pre-intervention interview, four participants recognized having a reduced view of themselves as a result of their weight. One participant said, "I feel like I do good in my life. I try to help others as much as I can...I try to help the individuals I support at work. I just feel like I'm a caring person overall." However, she later expressed, "I feel like I'm a confident person..., but my weight makes me feel unconfident." Another participant made a similar comment, stating, "It makes me feel like less than I am because of my weight." For three participants, losing weight was viewed as a way to enhance their life experience. One participant explained, "...I feel like...I have a good understanding of myself and spirit... I feel ...I would be better if I lost weight...like that would be the third aspect of it, and everything would all come together". Another stated, "I feel like if I were like slim *and* I did well in my work I'd...[be] more popular...or [have] more opportunities."

4) Remorse about their weight and lifestyle choices. Four participants indicated feeling bad about reaching their current weight and making unhealthy lifestyle choices. One participant stated, "...when I was younger I told myself that if I ever got overweight I'd...I don't know...I was always, "no way, no way" -I don't know how it happened so I feel badly about that." Another participant indicated, "I just beat myself up for what I eat, when I don't exercise, when I don't do things that I should have done that I know are good for me...." Similarly, a third participant stated, "...it makes me angry because I always say I'm going to go to the gym...and then I don't go, then I feel really guilty that I don't go because I know I should have gone...."

5) Self-conscious about weight. All five participants indicated that they avoid social activities as a result of feeling self-conscious about their weight. When asked about how she sees herself, one participant responded, "...there's things I'd like to do but I don't do because of my weight, like I'd really like to go dancing...and I don't do that because of my weight." Another echoed this experience, stating, "...I'm not as outgoing as I would like to be. I turn down a lot of social things because I feel uncomfortable about myself, and I like going to bars sometimes, but I also don't because I feel very self-conscious...." When asked how her weight has impacted her life, one participant indicated, "I think I have...fewer friends than I would have otherwise...." For three participants, self-consciousness was tied to feeling judged by those around them. When asked about the appeal of avoiding activities to not draw attention to herself, one participant responded, "...I'm conscious of how people view me sometimes [and] that's why I'm kind of paranoid of how people look at me. So if I'm not drawing attention to

myself people aren't criticizing me...." Another stated, "...I always feel like everyone is like judging me, regardless of if they are or not...."

Post-Interviews

During the post-intervention interviews, questions were asked to gain insight into whether the participants' experiences of being obese had changed, as well as their experiences of being coached. Accordingly, the resultant themes could be separated into two main groups: relationship with self; and feedback about the coaching experience. The main themes apparent regarding participants' relationship with themselves were that they: 1) had an enhanced self-acceptance; 2) were living a healthier lifestyle; and 3) were now making themselves a priority. The main themes apparent regarding the participants' experiences in being coached were that they: 4) found specific coaching skills to be particularly influential; and 5) appreciated being treated as the expert in their lives; and 6) would have preferred to be coached in-person.

1) Improved self-acceptance. By the end of the intervention, all five participants reported having an enhanced self-view. One participant described:

> I mean even just looking at myself in the mirror and saying, "I like what I see" was very difficult [in the beginning]. I had a hell of a time doing that....[My coach] and I worked on different things that would help me to either remember it or say it a couple of times a day. And...I guess the more I did it, the easier it got.

Another participant said, "...it's just... realizing that even if somebody doesn't like me for who I am, that doesn't matter because I like who I am." One participant reported no longer feeling like she needed to change to please those around her. She said, "...throughout the whole day I won't feel bad about myself, I won't feel that I have to

change anything, I just *am* and I'm happy, and it's good." For most participants, their improved self-acceptance resulted in improved optimism about future opportunities and enhanced social participation. One participant explained:

> In the beginning of the study I didn't think that I could ever get into Dental or Medical school and now I feel like there is a good chance that if I do the DAT and MCAT again there is a good chance that I could get in somewhere. I have more confidence in what I can do in life.

Yet another participant said:

> ...when I went to certain things I was always like, "oh I don't want to do that" or I didn't like to go to parties....I feel more confident. I feel like I can go hang out with [the] types of people that I want to. I can go to the bars...I feel like I have confidence.

2) Living a healthier lifestyle. All five participants indicated that they were making consistent efforts to live healthier lifestyles. Four participants reported being more physically active. When asked what impact, if any, the coaching had on her overall well-being, one participant responded, "...I'm actually going to the gym now, whereas before I had a membership and I was just like 'Yeah, I'll go tomorrow'." Another stated:

> ...it ended up being that I actually enjoyed, like, going to the gym, and...after I leave I feel so good....I sort of...made excuses why I couldn't go, like, "Well I need to go home instead", or like "I'm too tired today", and so I definitely...make sure that I'm there twice a week now....

One participant, who had not included physical activity into her lifestyle, was "hoping to incorporate exercise in second term, when I am a little bit less busy." She spoke about her

concentrated effort to eat more healthily. She said, "...I'm eating better, I'm taking better care of myself and I'm feeling better." She later elaborated:

> I have been taking an hour a night to...put all that food together, to make sure that I have vegetables. I will make myself a sandwich, something that is tasty that I will like, so that I will actually eat it the next day. It's been working really well actually.

3) Making self a priority. During the study period, all five participants had taken steps towards making themselves a priority in their own lives. One participant said, "... I think that it is good that I am finally putting myself first...." Another participant described making an effort to find time for herself amidst her busy academic and extra-curricular schedule. She said, "[I'm] focusing on doing things for myself not just everything else that I do, but making time and making myself a priority too."

4) Impactful coaching skills. When asked what they liked most about the coaching intervention, *accountabilities*, *perspective*-work, and *requests/challenges* were the coaching skills named by several participants. For three participants, being accountable to their coach supported them in following through with the commitments made to themselves during the coaching process. One participant said:

> ...the first week, [going to the gym] was my [homework] assignment...so...I had to do it, and then email [my coach] when I did do it. And so...I was forced to do it then, and it was... good because I had been sort of...going, but...just whenever I felt like I had the time or the energy. And then that one week when I was forced to go, even though it was a busy week I would go. After, when I was done at the

> gym, I had more energy to do what I should be doing anyways, so now I do it all the time.

Another participant emphasized the learning that had come as a result of being held accountable with her coach. She stated, "...from the accountability...I've built the skills and the time management that I need to continue." One participant emphasized the effectiveness of exploring different perspectives when faced with challenges in her life. She said:

> I really liked the perspective stuff that I learned because I used to always be like, "oh I'm in a rut I can't really change anything now" or "I am having a bad day or a bad week and I'm not even going to try." Now I have learned to try to turn it around and use different perspectives so I can keep going.

For another participant, the weekly challenges she designed with her coach helped to keep her motivated during the process. She said, "I liked the challenges each week...." When asked what, specifically, she liked about the challenges, the participant explained:

> ...after the phone call, [the challenges] made me actually go out there and think how I was going to do it...I like being challenged. I take them on whole-heartedly. So I liked...that challenge....I [would] think about it throughout the day and it would kind of be on my mind the rest of the week so I wouldn't just forget it.

Two participants, who did not specifically name coaching skills, both expressed that having a coach who was unbiased, and unattached to their lives contributed to making coaching an effective process. One participant said:

> I liked that it was really easy just to open up to [my coach]...I think it was easier for me to talk to [my coach] because [the coach] was a stranger to my life, so she was just kind of looking in and knew what I told her rather than seeing me day to day interacting with people. Plus then it's another way for me to explain the problems that are going on in my life and she doesn't already know them and [has not] formed her own opinions.

5) Client as expert. Three participants expressed their appreciation for, and the impact, of being viewed as the expert in their life by their coach. When asked what she liked most about her coaching experience, one participant said:

> Most would be...when I gave an answer like "I don't know"...[my coach] didn't just [say] "ok next thing"....[My coach] really like tried to pull it out of me and I think that's the only way that I learned the stuff that I did.

Another participant stated, "...when I was talking to [my coach], [the coach] didn't so much point out things that I didn't know, but it was just bringing things that I did know to my attention." For these participants, being in control of choosing the agenda for each coaching session further reinforced that they had the expertise in their lives. While she indicated that choosing a weekly agenda topic was sometimes a struggle, one participant acknowledged the appropriateness that this be her responsibility, saying, "...obviously I have to think of the issues, because it's coaching for *me*...."

6) Preference for in-person coaching. When asked what would be their recommendations for future programs like the current intervention, all five participants responded that it would be advantageous if all coaching sessions were in-person, as opposed to over the phone. One participant explained:

> Part of me, as much as I like the phone calls, I am more of a personal person…Like even though the phone was flexible sometimes,…I would rather go talk to someone. Especially about that kind of [personal] stuff. I feel like it could have been better person-to-person rather than over a phone call.

Another participant echoed, "…I guess it was just a little weird doing it over the phone and not meeting in person." By contrast, one participant felt that she was able to be more open because she was being coached over the phone, but acknowledged that this approach came with challenges. She said:

> …sometimes it was difficult with what was going on in [my] house. That was a problem and that has nothing to do with coaching. But for me, sometimes there [were] things going on in my house that I couldn't change, and so they were distracting.

Anecdotally, one participant suggested that the study's duration be lengthened, while another recommended that a nutritional program be included.

During the post-interviews, participants were also encouraged to share with the researcher anything else about their coaching experience and involvement in the study that was not discussed in direct response to the interview questions. All five participants expressed gratitude for having the opportunity to participate in the intervention.

For two participants, being vulnerable with their coach was a challenging, yet rewarding experience. One person stated:

> It was scary at first, because I'd been so used to my shell and it's something I've held tight. It's a security blanket kind of. It's always there, but it was freeing to kind of let someone in behind it.

Another participant credited her coaching experience with being the catalyst for finding answers she had inside herself. She said:

> ...these strategies that I'm using to effectively communicate or trust people. I would have never thought of on my own...I mean these were answers I had inside myself, but they would have never surfaced...even though these are my solutions...[my coach] helped me realize them....

One participant spoke of the learning that came as a result of her coaching experience. She explained:

> The biggest thing that I have learned is to keep going past the bumps in the road because normally in my diet if I ate something bad, I would eat bad for the rest of the day. And I would be like, "whatever, I've lost it." And the biggest thing I learned is to just keep going and to try. You know you made one mistake, but just keep going and you will do better next time. The next meal is a different chance.

Another participant spoke of the attributes of coaching that differentiate it from other *help by talking* professions. She said:

> I've been to...a psychiatrist before and it's very different... I've been to a social worker before, and [coaching is] more positive... when I'm going to talk to [my coach],... you think of it more positively. Like "oh, this will be a good time to talk", and you feel good about it. Where,...I remember going to a psychiatrist or a social worker,..."oh I don't want to go" - you have to deal with...repressed feelings. Where this is more positive, it's about...now, and...it was just a really positive experience.

Four participants spoke of the challenges faced in participating in all aspects of this study, and in following through with the commitments they made to themselves during the coaching process. For two participants, finding time amidst their busy academic and extra-curricular schedules posed the greatest challenge. One participant explained:

> It's just hard finding time when you are in school. And for a lot of people to give up that time and know that they have to come in like every week and get a weigh-in and have a phone call for half an hour,...some people just don't do it.

For the other two participants who identified challenges, they, at times, found it difficult to actively talk about, and deal with, issues in their lives. One participant stated, "...sometimes its easier to ignore issues than deal with them...So...one of the challenges [was] to deal with the issues..., and not ignore it."

Overall, participants expressed that they were grateful to have had a coach with whom to talk. Most participants expressed that they had learned a great deal about themselves, and were feeling an enhanced optimism about their futures.

Coaching Agenda Topics and Coaching Skills

Participant one. Visual inspection of participant one's obesity measures indicated a considerable decrease in BMI and WC across the baseline and intervention phases.

Inductive content analysis of participant one's coaching sessions revealed her primary (A/agenda) agenda to be, "...see[ing] myself as who I am and not as a view I put up of who I am", and "...[gaining a] stronger sense of being comfortable with who I am." The reflection provided by participant one's coach confirmed the researcher's accurate identification of the A/agenda. The four coaching skills that were used with the highest frequency in coaching this participant were: *powerful questions* (e.g., "What do you

imagine would need to change for you to have what you want?"); *clarifying* (e.g., "What I hear from you is that you value doing a job well done."); *acknowledgement* (e.g., "...I want to acknowledge you,...you've maintained an absolute, unwavering commitment to yourself and to coming out of your shell and even when it's hard and it feels vulnerable, your commitment to you has been crystal clear."); and *accountabilities* (e.g., "When do you want to send me the first update?"). A glossary of the coaching skills that were used most often in coaching the participants is provided in Appendix L (Whitworth et al, 2007). According to the coach's notes, by the end of the coaching intervention, participant one's coach "...felt confident that [the client] was more comfortable being herself with others, felt better about who she is, and learned that it was important for her to treat herself well."

Participant two. Visual inspection of participant two's obesity measures indicated a stable BMI and WC across the baseline and intervention phases.

Inductive content analysis of participant two's coaching sessions revealed her primary agenda to be, "...hav[ing] balance in my life." The reflection provided by participant two's coach confirmed the researcher's accurate identification of the A/agenda. The four coaching skills that were used with the highest frequency in coaching this participant were: *powerful questions* (e.g., "What serves you by doing this behaviour...?"); *perspectives* (e.g., "...what might be the *synchro swimming coach* perspective on getting things done?"); *reframing* (e.g., "...suppose we said, rather than 'I haven't studied enough', 'what could I do to prepare myself in time in order to write these with some degree of confidence'?"); and *requesting* (e.g., "...at the start of your day will you put on your Ipod and play one piece of music that...really motivates you

before you start anything in your day…?"). According to the coach's reflection, participant two did not seem fully committed to the coaching process, in that she missed one session, was late for a number of others, and did not always follow-through with her homework requests. It was her coach's opinion that, "If there is a readiness factor for coaching, [this participant] was barely at the bar of readiness…Perhaps she needed a longer period of coaching and more alliances or help in making changes in her life."

Participant three. Visual inspection of participant three's obesity measures indicated an increase in BMI and a stable WC across the baseline and intervention phases.

Inductive content analysis of participant three's coaching sessions revealed her primary agenda to be, "…having a more positive mindset about myself." The reflection provided by participant three's coach confirmed the accurate identification of the A/agenda. The three coaching skills that were used with the highest frequency in coaching this participant were: *powerful questions* (e.g., "What's it like being your own friend?"); *acknowledgement* (e.g., "What I acknowledge you for is for embracing, loving yourself and really letting *you* come out in the world."); and *intuiting* (e.g., "I'm not sure where this is coming from, so tell me if this feels accurate for you, the word that pops into my mind as I hear you talk…is *freedom*."). According to the coach's reflection, frequent acknowledgements were used purposefully to build the participant's trust in the coach-client relationship, in service of supporting the client in doing the work necessary to improve her self-view. By the end of the coaching intervention, participant three's coach "…felt confident [that this participant] learned and experienced a new, more positive way to experience her life."

Participant four. Visual inspection of participant four's obesity measures indicated a stable BMI and a decrease in WC across the baseline and intervention phases.

Inductive content analysis of participant four's coaching sessions revealed her primary agenda to be, "...to have a better understanding about how I feel about my self-image." The reflection provided by participant four's coach confirmed the researcher's accurate identification of the A/agenda. The four coaching skills that were used with the highest frequency in coaching this participant were: *powerful questions* (e.g., "...what would it take to help you do that?"); *perspectives* (e.g., "...what would [your boyfriend]'s perspective be on your stressors?"); *acknowledgement* (e.g., "...I really want to commend you for how much work you have done in the past seven or eight weeks. You have really worked hard on seeing yourself..., so good for you!."); and *structures* (e.g., "...that's a structure - the ring- what I want you to do,...when you start to get stressed, when you get this sense of [being] overwhelm[ed],...touch the ring,...look at the ring,...what the ring immediately reminds you of...is breath."). According to the coach's reflection, participant four "...responded well to coaching and...was absolutely committed to herself in the coaching".

Participant five. Visual inspection of participant five's obesity measures indicated a stable BMI and a decrease in WC across the baseline and intervention phases.

Inductive content analysis of participant five's coaching sessions revealed her primary agenda to be, "...connecting with myself." The reflection provided by participant five's coach confirmed the accurate identification of the A/agenda. The three coaching skills that were used with the highest frequency in coaching this participant were: *powerful questions* (e.g., "How do you want your days to be?"); *acknowledgement* (e.g.,

"...I really want to acknowledge you for embracing this permission...to experience the positive...and that you are not just thinking about your life long goals, you are living them...."); and *intuiting* (e.g., "...one of the things I hear is that you miss your brother. Does that feel accurate for you?"). According to the coach's reflection, participant five "...resisted getting to know and learning about herself...although she did engage in some exercises to address her agenda during some sessions."

CHAPTER 5

Discussion

The purpose of this study was to assess the impact of Co-active life coaching on obese female university students' body mass index (BMI), waist circumference (WC), functional health status, and self-esteem, and conjointly to identify the coaching skills and primary agenda topics that facilitate life coaching's efficacy as an intervention for obesity.

Visual inspection of participants' BMI and WC revealed several results. Body mass index decreased for participant one; remained relatively stable for participants two, four, and five; and increased for participant three. Overall, a decrease in BMI was not observed at the conclusion of the coaching intervention. This result may, in part, be explained by the study's relatively short intervention period (range 5 to 10 weeks). In a literature review examining psychological interventions for treating overweight and obesity, Shaw et al. (2007) concluded that longer behavioural interventions result in significantly greater weight loss than those of shorter durations. Douketis, Macie, Thabane, and Williamson (2005), drew a similar conclusion in their systematic review of studies examining methods of weight-loss among obese adults. The researchers found that dietary/lifestyle interventions for treating obesity result in < 5 kg of weight loss after a 2 – 4 year treatment period. If the current study's intervention period had included a greater number of coaching sessions over a longer period of time, a larger and more inclusive reduction in BMI may have been observed. In addition, while BMI reflects progress made through nutrition-based programs with reasonable accuracy, when exercise is also adopted –as was the case for the majority of the current study's

participants- BMI tends to underrate fat-loss (Prentice & Jebb, 2001). Accordingly, the present study's WC results should be given greater clinical value than those for BMI, because WC's depiction of body fatness is less skewed by the impact of physical activity on lean tissue and fat mass (Prentice & Jebb).

Waist circumference decreased for participants one, four, and, five, and remained relatively stable for participants two and three between the baseline and intervention phases. Overall, a trend towards a decrease in WC was observed at the conclusion of the coaching intervention. This result is very important because, in addition to the fact that WC is less biased by physical activity participation than is BMI (Prentice & Jebb, 2001), WC has also been demonstrated to be a better forecaster of weight-related health problems (Zhu et al., 2002), predicting central as well as peripheral adiposity (Janssen, Katmarzyk, & Ross, 2004). According to a paper by Douketis, Paradis, and Keller (2005), in which the clinical application of the Canadian guidelines for body weight classification in adults was discussed, WC "...provides an independent estimate of health risk beyond that determined by the BMI" (p. 995). Individuals with a BMI within the normal range, who have a WC outside the healthy range, would therefore still be at elevated risk of health problems as a result of elevated levels of abdominal fat. The current study's findings suggest that coaching is a behavioural intervention that supports the reduction of obese individuals' WCs, thereby reducing their risk of weight-related health problems.

The coaches' reflections on their sessions with the study participants echoed the findings of the qualitative analysis of the coaching transcripts; all five participants' primary agenda for their coaching experiences related to achieving enhanced self-

acceptance and an improved relationship with themselves. This result is not surprising, as many researchers believe that supporting obese individuals in changing their thinking, attitudes, and relationships with themselves is necessary to facilitate maintainable weight-loss (Foreyt, & Poston II, 1998; Kausman & Bruere, 2006). This may be because internal motivation, supported by a positive self-view, is a necessary catalyst for sustained behaviour change (Kausman & Bruere). Further, in the post-intervention interviews, a number of participants expressed the value of having control over choosing the agenda for the coach-client relationship. Providing obese individuals with the opportunity to learn about themselves and their weight, and empowering them to be in charge of finding their own solutions have been recognized as critical elements of weight-loss programs (Kausman & Bruere). These approaches are included within the cornerstones of the coaching model (i.e., the client is naturally creative, resourceful and whole) (Whitworth et al., 2007).

An analysis of the coaching-session transcripts revealed that, for all five participants, *powerful questions* was the skill used most frequently by the coaches. Open-ended, unscripted, powerful questions elicit introspection, and serve as a basis upon which many other coaching skills and techniques are built (Whitworth et al., 2007). This result is reflective of the coaching model's accurate application in the current study. The importance of empowering clients to do the work to find their own answers is further emphasized by Kausman and Bruere (2006), who indicated that actively listening to clients is critical to facilitating successful weight loss because "if we [(i.e., coaches, clinicians, medical practitioners)] take the position of merely telling people what to do...we risk disempowering our [clients] and preventing them from finding solutions that

actually work" (p.573). The predominant inclusion of powerful questions within the coaching method *likely* contributed to not only the reductions in anthropometric measurements that were experienced by some participants, but also to the increases in participants' psychosocial variables.

Among those participants for whom a reduction in BMI and/or WC was achieved, *acknowledgement* was the common skill that was used with the highest frequency. Acknowledgements emphasize an individual's self-worth, and according to Irwin and Morrow (2005), acknowledging an individual's strengths and accomplishments serves to promote self-efficacy. A construct within Social Cognitive Theory (Bandura, 2001), self-efficacy reflects an individual's belief in her competence to perform a desired behaviour and address obstacles that may be encountered in the process. Given that all five participants' primary focus for their coaching experience was in the realm of achieving enhanced self-acceptance and an improved relationship with themselves, rather than on specifically reducing their obesity, it is not surprising that acknowledgements were spoken frequently in coaching most participants, including one participant whose BMI and WC did not show improvements. Supporting clients in increasing their self-efficacy in their ability to achieve and maintain an improved relationship with themselves could facilitate a shift in the participants' thinking and attitudes, which would allow greater weight loss to come as an eventual result (Kausman & Bruere, 2006).

It is interesting to note that, during the post-intervention interviews, participants did not identify powerful questions or acknowledgements as among the coaching skills they found to be most influential. A possible reason for this observation may be that those skills that were named by participants (i.e., accountabilities, perspectives, and

requests/challenges) are more tangible, and require more work on behalf of the participants outside of the coaching session than do powerful questions and acknowledgements. As a result, the participants may not have been aware that the powerful questions and acknowledgements they received were, in fact, concrete skills within the coaching method, and these skills may have been what participants interpreted as the unbiased and supportive attributes they enjoyed about coaching.

An analysis of participants' self-esteem before and after the coaching intervention revealed a clinically significant improvement in self-esteem at the end of the study period. Contributing to this finding were qualitative statements from the post-intervention interviews, during which two participants spoke specifically to experiencing enhanced self-esteem, and all five participants indicated having improved self-acceptance. This result is congruent with Newnham-Kanas et al.'s (under review) finding that coaching facilitates significant increases in self-esteem among obese adults. Self-esteem is a critical element of an individual's self image, as it represents one's positive or negative self-view (Rosenberg, 1965; Rubin & Hewstone, 1998). According to Leary (1999), self-judgment is one determinant of self-esteem, and therefore the clients' work towards achieving self-acceptance, and thereby reducing negative self-judgments, might have facilitated the observed increase in self-esteem. High self-esteem has been suggested to support goal attainment (Leary), and targeting self-esteem by way of self-acceptance, as opposed to weight loss, has been suggested as a potential, non-dieting approach to reducing obesity and maintaining weight loss (Foreyt & Poston II, 1998; Wadden, Brownell, & Foster, 2002). Had the study duration been longer, a larger reduction in the

participants' anthropometric measurements may have been observed as a byproduct of their improved self-acceptance and self-esteem.

An analysis of participants' health statuses before and after the coaching intervention revealed clinically significant improvements in their mental, physical, and overall health statuses at the conclusion of the study period. A previous study which examined coaching's efficacy as an intervention for obesity among adults, aged 33-55 years, also demonstrated improvements in participants' overall health status at the end of a coaching intervention (Newnham-Kanas et al., under review). Canadian undergraduate university students experience significantly greater psychological stress than the country's general adult population (Bray & Born, 2004), and stress has been linked to poor nutritional choices and reduced physical activity participation (Ng & Jeffery, 2003). In light of this, the current study's finding that participants' mental health status had improved at the end of the coaching intervention suggests that coaching may help to increase individuals' abilities to cope with stress and other sources of mental distress, and thereby facilitate the adoption and maintenance of healthful lifestyle choices. This conclusion is supported by the fact that, during the post-intervention interviews, all five participants spoke of making healthier lifestyle choices. Consequently, they were making their physical health a priority. Researchers have found reduced quality of life to be associated with obesity in individuals as young as five years of age (Jia & Lubetkin, 2005; Schwimmer et al., 2003), and to be a negative predictor of weight loss success (Teixeira et al., 2005). Given that participants' overall health statuses had increased by the conclusion of the coaching intervention, a greater reduction in BMI and/or WC may have been observed if the duration of the coaching period had been longer.

Limitations

There are a number of limitations to the current study that warrant discussion. Most notably, the length of the coaching intervention may have impacted the study's results. Due to cancelled and missed sessions, participants received between 5 and 10 coaching sessions. Future researchers should consider lengthening the duration of the coaching intervention, since the findings of the current study suggest that a longer period of coaching may be required to further reduce obesity. Ensuring that participants have an equal number of coaching sessions would allow for a more concrete estimate to be made as to the number of coaching sessions that are required to positively impact the study variables, and this should also be a priority in future research. While it would have been advantageous to increase and standardize the number of coaching sessions in the current study, this was not possible because the span of the study period (i.e., the recruitment, baseline, and intervention phases, collectively) was limited by the length of the academic term.

While extensive recruitment techniques were used in an effort to recruit a diverse sample, the study's self-selected participants cannot be assumed to be representative of the entire obese, female, undergraduate university student population at the University of Western Ontario. This, in addition to the study's use of a multiple-baseline, single-subject research design, and the nature of qualitative research limit the generalizability of the current study's results.

Although the participants' weekly weigh-ins with the researcher may have served as part of the intervention experience, this is unlikely in the current study. Participants were not shown the scale values, and during their post-intervention interviews none

referred to the weigh-ins as an attribute of the intervention that they found valuable. Further, two participants reported anecdotally finding these weekly appointments to be among the least beneficial parts of their experience.

Participant readiness may have been another factor that affected their receptivity to the coaching experience and therefore, the BMI and WC results in the current study. In particular, one participant's seeming lack of readiness to commit to the coaching process was noted in her coach's reflection, and interestingly, this individual was one of two participants who did not experience desirable changes to her anthropometric measurements. While nearly one quarter of Canadians with post-secondary education are obese (Statistics Canada, 2006a), and, on average, 60% of female university students are constantly attempting to lose weight (Killen et al., 1993), a number of researchers have concluded that age (i.e., being older), having a long history of weight-loss attempts, and high levels of internal motivation are critical factors for facilitating and maintaining weight loss (Ogden, 2000; Elfhag & Rossner, 2005; Kausman & Bruere, 2006). During their post-intervention interviews with the researcher, a number of participants also indicated that finding time to commit to the coaching process was a challenge due to their demanding academic schedules. Despite these limitations, a number of conclusions and recommendations can be drawn from the information provided in the current study as to the attributes of coaching that are most pertinent to its effectiveness as an intervention modality for obesity among female university students.

CHAPTER 6

Conclusions and Future Directions

Conclusions

The following conclusions can be made from the current intervention:

1. Coaching was associated with a trend towards a decrease in waist circumference.
2. A consistent intervention effect on participants' BMI was not apparent.
3. Coaching was associated with clinically significant increases in participants' self-esteem, and in their mental, physical, and overall health statuses.
4. At the study's conclusion, participants experienced enhanced self-acceptance, were making strides towards living a healthier lifestyle with regards to physical activity participation and nutritional choices, and were making themselves a priority in their lives.
5. Participants' primary agendas for their coaching experiences related to achieving enhanced self-acceptance and an improved relationship with themselves, as opposed to specifically reducing obesity.
6. *Powerful questions* was the skill used most frequently by the coaches in working with all participants.
7. Among those participants for whom a reduction in BMI and/or WC was achieved, giving meaningful *acknowledgement* was the common skill that the coaches used with the highest frequency.

Future Directions

This was the first study to examine the attributes within the Co-active coaching model that facilitate its efficacy as an intervention for obesity. Based on the study's results, the following three recommendations are suggested for future research examining coaching as a modality for behaviour change. First, it is recommended that future studies aimed at examining coaching's efficacy as an intervention for obesity include a control group, to allow for the experimental evaluation of whether it is the coaching, or some other factor (e.g., Hawthorne effect), that is responsible for improvements in participants' anthropometric and psychosocial measurements. The current study used a quasi-experimental research design to open the *black box* of coaching, identifying a total of nine skills of Co-activity that were especially paramount to the method's effectiveness. The attributes of coaching which participants found to be most powerful were also identified. As a result, future researchers can be reasonably certain that the influential elements of coaching would not be included incidentally in a comparable control intervention. While the current study examined the frequency at which the coaching skills were applied, future studies should examine the context in which the skills are used (i.e., how and when coaches integrate the skills into fulfillment, balance, and process coaching in service of forwarding their clients into action and/or deepening their clients' learning), as this would further complement the current study's assessment of the skills' impact. Moreover, an analysis of the skills' integration would provide an additional dimension that would qualify the coaches' proficiency. During their post-intervention interview with the researcher, participants suggested that incorporating a nutrition-plan into the program and allowing participants to be coached in-person would strengthen future, similar

research studies. Ideally, future studies should consider including intervention groups that would allow for a comparison of the impact of: 1) coaching in-person, coaching via telephone, and a comparable control intervention; and 2) coaching-only, coaching plus a nutritional program, coaching plus a physical activity program, a combination of all three program components, and a comparable control intervention.

Second, to enhance the generalizability of future studies, a larger and more representative sample of the obese, university student population should be included. The multiple-baseline single-subject methodology used in the current study allowed for an examination of coaching's efficacy as an innovative intervention for obesity among female university students, based on a small sample of individuals. The study's results suggest that coaching may facilitate improvements in waist circumference, self-esteem, and functional health statuses among obese, female undergraduate university students. A larger study should be conducted in which tests of statistical significance are used and conclusions that are generalizable to the entire target population can be made. Also, the length of the coaching intervention should be extended, as this, in combination with the increased sample size, may better identify the impact of coaching.

Finally, the current study's identification of the predominant coaching skills and primary agenda topics used in treating obesity will allow for a future in-depth comparison of similar *help by talking* techniques. The coaching method used in the current study contains certain attributes that are similar to those contained within other models and theories for facilitating behaviour change (Miller & Rollnick, 2002; Egan, 1997; Ryan & Deci, 1985; 2000; Kanfer, 1970), however, no other method with an identical combination of skills has been found. Future researchers should consider conducting a

study that would critically compare the influential coaching skills with those that are at the crux of similar behaviour change approaches.

REFERENCES

American College of Sports Medicine. (2000). *ACSM's guidelines for exercise testing and prescription.* (6th ed.). Philadelphia, PA: Lippincott, Williams & Wilkins.

Ajzen, I.. (1988). *Attitudes, personality, and behaviour.* Chicago: Dorsey Press.

Bachkirova, T., & Cox, E.. (2004). A bridge over troubled water: Bringing together coaching and counseling. *International Journal of Mentoring and Coaching, 2(1),* 2-9.

Bandura, A.. (1986). *Social foundations of thought and action: A social cognitive theory.* New Jersey: Prentice-Hall, Inc.

Bandura, A.. (2001). Social Cognitive theory: An agentic perspective. *Annual Review of Psychology, 52,* 1-26.

Banning, M.. (2005). Obesity: Pathophysiology and treatment. *The Journal of the Royal Society for the Promotion of Health, 125(4),* 163-167.

Bates, B.. (1992). The effect of demands for honesty on the efficacy of the Carleton Skills-Training Program. *International Journal of Clinical and Experimental Hypnosis, 40(2),* 88-102.

Blascovich, J., & Tomaka, J.. (1993). Measures of self-esteem. In J.P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds). *Measures of personality and social psychological attitudes* (pp. 115-160). 3rd ed. Ann Arbor: Institute for Social Research.

Bray, S. R., & Born, H.A.. (2004). Transition to university and vigorous physical activity: Implications for health and psychological well-being. *Journal of American College Health, 52(4),* 181-188.

Brazier, J. E., Harper, R., Jones, N. M. B., O'Cathain, A., Thomas, K. J., Usherwood, T., et al.. Validating the SF-36 health survey questionnaire: New outcome measure for primary care. (short form 36). *British Medical Journal, 305(6846),* 160-165.

Brisson, T., & Tudor-Locke, C.. (2004). The health benefits of physical activity and the role of step counters. *Canadian Journal of Dietetic Practice and Research, 65(1)*, 26A.

Buckworth, J.. (2001). Exercise adherence in college students: Issues and preliminary results. *QUEST, 53*, 335-345.

Butler, S.M., Black, D.R., Blue , C.L., & Gretebeck, R.J.. (2004). Change in diet, physical activity, and body weight in female college freshman. *American Journal of Health Behaviour, 28(1)*, 24-32.

Carpenter, K. M., Hasin, D. S., Allison, D. B., & Faith, M. S.. (2000). Relationships between obesity and DSM-IV major depressive disorder, suicide ideation, and suicide attempts: Result from a general population study. *American Journal of Public Health, 90(2)*, 251-257.

Ciliska, D.. (1998). Evaluation of two nondieting interventions for obese women. *Western Journal of Nursing Research, 20(1)*, 119-135.

Clement, J. M., Schmidt, C. A., Bernaix, L. W., Covington, N. K., & Carr, T. R.. (2004). Obesity and physical activity in college women: Implications for clinical practice. *Journal of the American Academy of Nurse Practitioners, 16(7),* 291-299.

Cohen, J.. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.) Hillsdale, New Jersey: Lawrence Erlbaum.

Colditz, G. A.. (1992). Economic costs of obesity. *American Journal of Clinical Nutrition, 55*, 503S-507S.

Colditz, G. A.. (1999). Economic costs of obesity and inactivity. *Medicine & Science in Sports & Exercise, 31(11)*, S663-S667.

Colman, R.. (2001). *Cost of obesity in Ontario*. Retrieved February 17, 2007, from the GPIAtlantic Web site: http://72.14.205.104/u/GPIAtlantic?q=cache:KJ_qyj0D4rwJ:www.gpiatlantic.org/pdf/health/obesity/on-obesity.pdf+cost+of+obesity+in+ontario&hl=en&ct=clnk&cd=1&ie=UTF-8.

Cramer, P., & Steinwet, T.. (1998). Thin is good, fat is bad: How early does it begin?. *Journal of Applied Developmental Psychology, 19(3)*, 429-451.

Daviglus, M. L.. (2005). Health care costs in old age are related to overweight and obesity earlier in life. *Health Affairs, 24*, R97-R101.

Despres, J. P.. (1993). Abdominal obesity as important component of insulin-resistance syndrome. *Nutrition, 9(5),* 452-459.

Dooley, L. M.. (2002). Case study research and theory building. *Advances in Developing Human Resources, 4(3)*, 335-354.

Douketis, J. D., Paradis, G., & Keller, H.. (2005). Canadian guidelines for body weight classification in adults : Application in clinical practice to screen for overweight and obesity and to assess disease risk. *Canadian Medical Association Journal, 172(8)*, 995-997.

Douketis, J. D., Maciel C., Thabane, L., & Williamson, D. F.. (2005). Systematic review of long-term weight loss studies in obese adults: Clinical significance and applicability to clinical practice. *International Journal of Obesity, 29*, 1153 – 1167.

Drury, C. A. A., & Louis, M.. (2002). Exploring the association between body weight, stigma of obesity, and health care avoidance. *Journal of the American Academy of Nurse Practitioners, 14(12)*, 554-561.

Egan, G.. (1997). *The Skilled Helper: A Problem-Management Approach to Helping* (6th ed.). Pacific Grove: Brooks/Cole Publishing Company.

Elfhag, K., & Rossner, S. (2005). Who succeeds in maintaining weight loss? A conceptual review of factors associated with weight loss maintenance and weight regain. *Obesity Reviews, 6*, 67-85.

Erikson, S. J., Robinson, T. N., Haydel, K. F., & Killen, J. D. (2000). Are overweight children unhappy?: Body mass index, depressive symptoms, and overweight concerns in elementary school children. *Archives of Pediatrics & Adolescent Medicine, 154*, 931-935.

Fabricatore, A. N., & Wadden, T. A.. (2003). Psychological functioning of obese individuals. *Diabetes Spectrum, 16(4)*, 245-252.

Fishbein, M., & Ajzen. I.. (1975). *Belief, Attitude, intention and behaviour : An introduction to theory and research.* Reading, MA : Addison-Wesley.

Fontaine, K. R., Barofsky, I., Andersen, R. E., Bartlett, S. J., Wiersema, L., Cheskin, L. J., et al.. (1999). Impact of weight-loss on health-related quality of life. *Quality of Life Research, 8*, 275-277.

Foreyt, J. P., & Poston II, W. S. C.. (1998). The role of the behavioral counselor in obesity treatment. *Journal of the American Dietetic Association, 98(10)*, S27-S30.

Glenny, A. M., O'Meara, S., Melville, A., Sheldon, T. A., & Wilson, C.. (1997). The treatment and prevention of obesity: a systematic review of the literature. *International Journal of Obesity, 21*, 715-737.

Goffman, E.. (1963). *Stigma: Notes on the management of spoiled identity*. Englewood Cliffes, NJ: Prentice-Hill.

Gordon, K. A.. (1995). College health in the national blueprint for a healthy campus 2000. *Journal of American College Health, 43,* 273-275.

Gordon-Larsen, P., Adair, L. S., Nelson, M. C. & Popkin, B. M.. (2004). Five-year obesity incidence in the transition period between adolescence and adulthood: the National Longitudinal Study of Adolescent Health. *The American Journal of Clinical Nutrition, 80*, 569-575.

Grace, T. W.. (1997). Health problems of college students. *Journal of American College Health, 45(6)*, p.243-251.

Grant, A. M.. (2001). *Towards a Psychology of Coaching*. Retrieved 18 August 2007, from www.psych.usyd.edu.au/psychcoach/Coaching_review_AMG2001.pdf.

Guba, E. G., & Lincoln, Y. S.. (1989). *Fourth generation evaluation*. London: Sage.

Hayes, S. C.. (1981). Single Case Experimental Design and Empirical Clinical Practice. In A.E. Kazdin (Ed.), *Methodological Issues & Strategies in Clinical Research* (2nd ed.). Washington, DC: American Psychological Association.

Hill, J. O., & Peters, J. C.. (1998). Environmental contributions to the obesity epidemic. *Science, 280*, 1371-1374.

Hoffman, D. J., Policastro, P., Quick, V., & Lee, S-K.. (2006). Changes in body weight and fat mass of men and women in the first year of college: a study of the "Freshman 15". *Journal of American College Health, 55(1)*, 41-45.

Huang, T. T-K., Harris, K. J., Lee, R. E., Nazir, N., Born, W., & Kaur, H.. (2003). Assessing overweight, obesity, diet and physical activity in college students. *Journal of American College health, 52(2),* 83-86.

Irwin, J. D.. The Physical Activity Maintenance Questionnaire (PAM-Q); A reliable and valid tool to assess the prevalence and correlates of maintaining moderate level physical activity among university students. *Doctoral Dissertation.* University of Waterloo, Dept. of Health Studies and Gerontology, Waterloo, Ontario, January, 2002.

Irwin, J.D.. (2004). Prevalence of university students' sufficient physical activity: A systematic review. *Perceptual and Motor Skills, 98,* 927-943.

Irwin, J. D., & Morrow, D.. (2005). Health promotion theory in practice: An analysis of Co-active coaching. *International Journal of Evidence Based Coaching and Mentoring, 3(1)*, 29-38.

Irwin, J. D., & Tucker, P.. (2005). Through another looking glass: Gender, social issues, and the media impact on body image. In E. Singleton & A. Varpalotai (Eds.), *Stones in the Sneaker: Active Theory for Secondary School Physical and Health Educators*. London, On: The Althouse Press.

Jacobson, N. S., & Traux, P.. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychoogy, 59(1)*, 12-19.

Janssen, I., Katzmarzyk, P., & Ross, R.. (2004). Waist circumference and not body mass index explains obesity-related health risk. *The American Journal of Nutrition, 79*, 374-384.

Jain, A.. (2004). What works for obesity?: A summary of the research behind obesity interventions. *BMJ Clinical Evidence*, 1-57.

Jehn, M. L., Patt, M. R., Appel, L. J., & Miller, E. R.. (2006). One year follow-up of overweight and obese hypertensive adults following intensive lifestyle therapy. *Journal of Human Nutrition and Dietetics,19*, 349-354.

Jia, H., & Lubetkin, E. I.. (2005). The impact of obesity on health-related quality-of-life in the general adult US population. *Journal of Public Health, 27(2)*, 156-164.

Kalantar-Zadeh, K., Kopple, J. D., Block, G., & Humphreys, M. H.. (2001). Association among SF36 quality of life measures and nutrition, hospitalization, and mortality in hemodialysis. *Journal of the American Society of Nephrology, 12*, 2797-2806.

Kanfer, F. H.. (1970). *Self-regulation: Research, issues, and speculation. In Behavior modification in clinical psychology* (C. Neuringer, & J.L. Michael, Eds.) New York: Appleton-Century-Crofts.

Katzmarzyk, P. T.. (2004). Waist circumference percentiles for Canadian youth 11-18y of age. *European Journal of Clinical Nutrition, 58*, 1011-1015.

Kausman, R. R., & Bruere, T. T.. (2006). If not dieting, now what?. *Australian Family Physician, 35(8)*, 572-575.

Kazdin, A. E.. (2001). Almost clinically significant ($p<.10$): Current measures may only approach clinical significance. *Clinical Psychology: Science and Practice, 8(4)*, 455-462.

Kazdin, A. E.. (1999). The meanings and measurement of clinical significance. *Journal of Consulting and Clinical Psychology, 67(3)*, 332-339.

Kazdin, A. E.. (1982). *Single-Case Research Designs: Methods for Clinical and Applied Settings*. New York: Oxford University Press.

Keating, X. D., Guan, J., Pinero, J. C., & Bridges, D. M.. (2005). A meta-analysis of college students' physical activity behaviours. *Journal of American College Health, 54(2)*, 116-125.

Killen, J. D., Taylor, C. B., Hammer, L. D., Litt, I., Wilson, D. M., Rich, T., et al.. (1993). An attempt to modify unhealthful eating attitudes and weight regulation practices of young adolescent girls. *International Journal of Eating Disorders, 13*, 369–384.

Lau D. C. W., Douketis J. D., Morrison K. M., Hramiak I. M., Sharma A.M., et al.. (2007). 2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children. *Canadian Medical Association Journal*; *176*(Suppl. 8): 1-13.

Leary, M. R.. (1999). Making sense of self-esteem. *Current Directions in Psychological Science, 8(1)*, 32-35.

Leslie, E., Owen, N., Salmon, J., Bauman, A., Sallis, J. F., & Kai Lo, S.. (1999). Insufficiently active Australian college students: Perceived personal, social, and environmental influences. *Preventive Medicine, 28,* 20-27.

Lowry, R., Glauska, D. A., Fulton, J. E., Wechsler, H., Kann, L., & Collins, J. L.. (2000). Physical activity, food choice, and weight management goals and practices Among U.S. College Students. *American Journal of Preventive Medicine, 18(1)*, 18-27.

McKenzie, J. F., Neiger, B. L., & Smeltzer, J. L.. (2005). *Planning, Implementing & Evaluating Health Promotion Programs: A primer* (4th ed.). New York, NY: Benjamin Cummings.

Miller, W. R., & Rollnick, S.. (2002). *Motivational Interviewing: Preparing People for Change* (2nd ed.). New York, NY: The Guilford Press.

Miller, K., Staten, R. R., Rayens, M. K., & Noland, M.. (2005). Levels and Characteristics of physical activity among a college student cohort. *American Journal of Health Education, 36(4)*, 215-220.

National Health Institutes Obesity Education Initiative. (n.d.). BMI Calculator. Retrieved May 1, 2007, from http://www.nhlbisupport.com/bmi/bmicalc.htm.

National Task Force on the Prevention and Treatment of Obesity. (2000). Dieting and the development of eating disorders in overweight and obese adults. *Archives of Internal Medicine, 160*, 2581-2589.

Newnham-Kanas, C. E., Gorczynski, P., Irwin, J. D., & Morrow, D.. (2006). *Annotated Bibliography of Life Coaching and Health Research.* Manuscript in preparation, The University of Western Ontario, London, Ontario, Canada.

Newnham-Kanas, C. E., Irwin, J. D., & Morrow, D.. (under review). *Co-Active Life Coaching as a Treatment for People with Obesity.* Manuscript submitted for publication, The University of Western Ontario, London, Ontario, Canada.

Ng, D. M., Jeffery, R. W.. (2003). Relationships between perceived stress and health behaviors in a sample of working adults. *Health Psychology, 22*, 638–642.

Ogden, J.. (2000). The correlates of long-term weight loss: A group comparison study of obesity. *International Journal of Obesity, 24*, 1018-1025.

Patton, M.. (1987). *How to Use Qualitative Methods in Evaluation.* Sage: London.

Parkison, K, M., Tovée, M. J., & Cohen-Tovée, E. M.. (1998). Body shape perceptions of preadolescent and young adolescent children. *European Eating Disorder Review, 6*, 126-135.

Peltier, B.. (2001). *The psychology of executive coaching.* Hove: Brunner-Routledge.

Pingitore, R. Dugoni, B. L., Tindale R. S., & Spring, B.. (1994). Bias against overweight job applicants in a simulated employment interview. *Journal of Applied Psychology, 79(6)*, 909-917.

Pi-Sunyer, F. X.. (1991). Health implications of obesity. *American Journal of Clinical Nutrition, 53*, 1595S-1603S.

Prentice, A. M., & Jebb, S. A.. (2001). Beyond body mass index. *Obesity Reviews, 2*, 141-147.

Racette, S. B., Deusinger, S. S., Strube, M. J., Highstein, G. R., & Deusinger, R. H.. (2005). Weight changes, exercise and dietary patterns during freshman and sophomore years of college. *Journal of American College Health, 53(6),* 245-251.

Rosenberg, M.. (1965). *Society and the Adolescent Self-Image.* Princeton, New Jersey: Princeton University Press.

Rosenberg, M.. (1989). *Society and the Adolescent Self-Image.* (Rev. ed.). Middletown, CT: Wesleyan University Press.

Rubin, M., & Hewstone, M.. (1998). Social identity theory's self-esteem hypothesis: A review and some suggestions. *Personality and Social Psychology Review, 2(1),* 40-62.

Ryan, R. M., & Deci, E. L.. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68-78.

Schwimmer, J. R., Burwinkle, T. M., & Varni, J. W.. (2003). Health-related quality of life of severely obese children and adolescents. *The Journal of the American Medical Association, 289(11),* 1813-1819.

Sciamanna, C. N., Tate, D. F., Lang, W., & Wing, R. R.. (2000). Who reports receiving advice to lose weight? Results from a multistate survey. *Archives of Internal Medicine, 160,* 2234-2339.

Shaw, K., O'Rourke, P., Del Mar C., & Kenardy, J.. (2007). Psychological interventions for overweight or obesity (review). *Cochrane Database of Systematic Reviews.* Issue 2. Art No.:CD003818. DOI 10.1002/14651858.CD003818.pub2.

Skender, M. L., Goodrick, G. K., Del Junco, D. J., & Reeves, R. S.. (1996). Comparison of 2-year weight loss trends in behavioural treatments f obesity: Diet, exercise and combination interventions. *Journal of the American Dietetic Association, 96(4),* 342-349.

Sparling, P. B., & Snow, T. K.. (2002). Physical activity patterns in recent college alumni. *Research Quarterly for Exercise and Sport*, 7, 200-205.

Statistics Canada.. (2001). 2001 Census – Age and sex for population, for Canada, provinces, territories, census metropolitan areas and census agglomerations.

Statistics Canada.. (2003). CANSIM, Cross-classified tables 00580701, 00580702.

Statistics Canada. (2004). *The Daily – Canadian community health survey.* Accessed on February 1, 2007 from, http://www.statcan.ca/Daily/English/040615/d040615b.htm.

Statistics Canada.. (August, 2006a). *Health Reports* (Catalogue no. 82-003-XPE, 17(3)). Ottawa, Ontario, Canada: Health Statistics Division.

Statistics Canada.. (November, 2006b). *Healthy Today, Healthy Tomorrow? Findings from the National Population Health Survey: Trends in Weight Change Among Canadian Adults: Evidence from the 1996/1997 to 2004/2005 National Population Health Survey.* (Catalogue no. 82-618-MIE 2(1)) Ottawa, Ontario, Canada: Orpana, H.M., Tremblay, M.S. & Fines, P.

Stenius-Aarniala, B., Poussa, T., Kvarnstorm, J., Gronlund, E-L., Ylikahri, M., & Mustajoki, P.. (2000). Immediate and long term effects of weight reduction in obese people with asthma: Randomised controlled study. *British Medical Journal. 320,* 827-832.

Stewart –Brown, S., Evans, J., Patterson, J., Petersen, S., Doll, H., Balding, J., et al.. (2000). The health of students in higher education: An important and neglected public health problem. *Journal of Public Health Medicine, 22 (4),* 492-499.

Stice, E., Presnell, K. & Shaw, H.. (2005). Psychological and behavioural risk factors of obesity onset in adolescent girls: A prospective study. *Journal of Consulting and Clinical Psychology, 73(2),* 195-202.

Strychar, I.. (2004). Fighting obesity: A call to arms. *Canadian Journal of Public Health 95(1),* 12-14.

Teachman, B. A., & Brownell, K. D.. (2001). Implicit anti-fat bias among health professionals: Is anyone immune?. *International Journal of Obesity, 25*, 1521-1531.

Teixeira, P. J., Going, S. B., Sardinha, L. B., & Lohman, T. G.. (2005). A review of psychosocial pre-treatment predictors of weight control. *Obesity Reviews, 6*, 43-65.

Tiggemann, M., & Pennington, B.. (1990). The development of gender differences in body-size dissatisfaction. *Australian Psychology, 25(3)*, 306-313.

Vanasse, A., Demers, M., Hemiari, A., & Courteau, J.. (2006). Obesity in Canada: Where and how many? *International Journal of Obesity, 30*, 667-683.

Vale, M. J., Jelinek, M. V., & Best, J. D.. (2002a). How many patients with coronary heart disease are not achieving their risk-factor targets? Experience in Victoria 1996-1998 versus 1999-2000. *The Medical Journal of Australia, 176,* 211-215.

Vale, M. J., Jelinek, M. V., Best, J. D., & Santamaria, J. D.. (2002b). Coaching patients with coronary heart disease to achieve the target cholesterol : A method to bridge the gap between evidence-based medicine and the real world – the randomized controlled trial. *Journal of Clinical Epidemiology, 55*, 245-252.

Von Bothmer, M. I. K., & Fridlund, B.. (2005). Gender differences in health habits and in motivation for a healthy lifestyle among Swedish university students. *Nursing and Health Sciences, 7*, 107-118.

Vuori, I.. (1998). Does physical activity enhance health? *Patient Education and Counseling, 33,* S95-S103.

Wadden, T. A., Brownell, K. D., & Foster, G. D.. (2002). Obesity: Responding to the global epidemic. *Journal of Consulting and Clinical Psychology, 70,* 510-525.

Ware, J. D.. (1997). *SF-36 Health Survey: Manual & Interpretation Guide.* The Medical Outcomes Trust: Boston, MA.

Ware, J. D.. (2000). SF-36 health survey update. *Spine, 25(24),* 3130-3139.

Whincup, P., & Deanfield, J.. (2005). Childhood obesity and cardiovascular disease: The challenge ahead. *Clinical Practice Cardiovascular Medicine*, 2, 432-433.

Whitmore, J.. (1992). *Coaching for performance.* London: Nicholas Brealey.

Whitworth, L., Kimsey-House, K., Kimsey-House, H., Sandahl, P.. (2007). *Co-Active Coaching: New Skills for Coaching People Toward Success in Work and Life* (2nd ed.). California: Davies-Black Publishing.

Williams, D. I., & Irving, J. A.. (2001). Coaching: An unregulated, unstructured and (potentially) unethical process. *The Occupational Psychologist, No 42*, British Psychological Society.

World Health Organization.. (2000). *Obesity: preventing and managing the global epidemic: a report of a WHO consultation,* (NLM Classsification: WD 710). Geneva, Switzerland.

World Health Organization (September, 2006). Obesity and Overweight. Accessed on February 4, 2007, from http://www.who.int/mediacentre/factsheets/fs311/en/print.html.

Zerbe, W. J. and Panlhus, D. L.. (1987). Socially desirable responding in organizational behavior: A reconception. *Academy of Management Review, 12(2)*, 250- 264.

Zhu, S., Wang, Z., Heshka, S., Heo, M., Faith, M. S., & Heymsfield, S. B.. (2002). Waist circumference and obesity-associated risk factors among whites in the third National Health and Nutrition Examination Survey: Clinical action thresholds. *American Journal of Clinical Nutrition, 76*, 743-749.

Zou, W. G., Tang, J. J., & Mo, Q. H.. (2005). Exercise prescription for improving the body composition of undergraduates with simple obesity. *Chinese Journal of Clinical Rehabilitation, 9(48)*, 143-145.

Appendix A: Recruitment Poster

Life Coaching and the Treatment of Obesity Among Female University Students

Researchers with the *University of Western Ontario* will be conducting research to determine the effectiveness of life coaching on the treatment of obesity among university students. The study will run for 16-weeks and will involve one-on-one coaching sessions with a Co-active coach (certified by the Coaches' Training Institute). Each session will last approximately 30 to 45-minutes.

If you are interested in participating in this research and can answer YES to the following 6 questions, the research team would like to hear from you:

Are you overweight?
Are you a full-time undergraduate student at U.W.O.?
Are you female?
Are you between the ages of 17 and 24?
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
Health Sciences Building Room 215
London, Ontario
519-661-2111

Dr. Jennifer Irwin Ph.# 661-2111 xxxxx@uwo.ca
Dr. Jennifer Irwin Ph.# 661-2111 xxxxx@uwo.ca
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Dr. Jennifer Irwin Ph.# 661-2111 xxxxx@uwo.ca

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. Female, full-time undergraduate students between the ages of 17-24, who are overweight, speak English fluently, and are not under the care of a physician for a particular ailment, are eligible for this study. Participants receive twelve weeks of one-on-one life coaching with a Co-active life coach certified by the Coaches' training Institute.

If you meet the criteria, please contact Melissa van Zandvoort at 519-661-2111.

Appendix C: Participant Eligibility Questionnaire (Administered over the Phone)

Sex: Male Female

Age: _____ years

How tall are you? _____ feet _____ inches OR _____ m/cm

How much do you weigh? _____ lbs OR _____ kg

Has your weight been steady for the past six months? YES NO

Are 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: Participant Debriefing Letter

Co-Active Life Coaching as an Intervention for Obesity among University Students

Dear Participant,

As you know, we have collected payment from you for the coaching sessions that you received during this study. You were required to pay $5 for each coaching session (total $60) because research has shown that when participants pay fees they are more committed to a program and are more likely to accomplish their goals. We did not tell you that we would be returning the payment to you because that may have reduced the desired effect of increasing participants' commitment to their coaching sessions. Now that the study is complete, we are returning the funds to you in full.

Thank you for your participation.

Jennifer Irwin, PhD.
Don Morrow, PhD.
Melissa van Zandvoort, M.Sc. (candidate)

Appendix E: Demographic Questionnaire

Sex: Male Female

Age: _____ years

How tall are you? _____ feet _____ inches OR _____ m/cm

How much do you weigh? _____ lbs OR _____ kg

Are 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

Do you live in a University Residence? YES NO

How many roommates, or housemates, do you have? _____

Do you have a campus meal-plan? YES NO

Do you use the Campus Recreation facilities? YES NO

How many children do you have? _____

To Which ethnic or cultural group do you belong?

- ☐ White
- ☐ Chinese
- ☐ Japanese
- ☐ Black
- ☐ Filipino
- ☐ Latin American
- ☐ Arab
- ☐ West Asian (e.g., Afghan, Iranian, etc.)
- ☐ South Asian (e.g., East Indian, Pakistani, Sri Lankan)
- ☐ Korean
- ☐ Southeast Asian (e.g.,, Cambodian, Indonesian, Laotian, Vietnamese, etc.)
- ☐ Other (please specify): _____

Do you have a job while attending university? YES NO

↳☐ part-time

☐ full-time

Current year of university enrolment: 1st 2nd 3rd 4th 5th

Program of Enrolment/Major: _____

For researcher use only:

BMI: _____

Eligible to participate in the study: Yes No

Appendix F: HSREB Approval Form

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: 13404E **Review Level:** Expedited
Review Date: July 11, 2007

Protocol Title: Co-Active Life Coaching as a Treatment for Obesity among University Students
Department and Institution: Faculty of Health Sciences, University of Western Ontario
Sponsor:
Ethics Approval Date: August 10, 2007 **Expiry Date:** September 30, 2008
Documents Reviewed and Approved: UWO Protocol, Letter of Information & Consent, Advertisement, Debriefing Letter
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: Ethical Conduct of Research Involving Humans and the Health Canada/ICH Good Clinical Practice Practices: Consolidated Guidelines; and the applicable laws and regulations of Ontario has reviewed and granted approval to the above referenced 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.

The ethics approval for this study 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:

a) changes increasing the risk to the participant(s) and/or affecting significantly the conduct of the study;
b) all adverse and unexpected experiences or events that are both serious and unexpected;
c) 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. John W. McDonald
Deputy Chair: Susan Hoddinott

Ethics Officer to Contact for Further Information		
☐ Jennifer McEwen (jmcewen4@uwo.ca)	☒ Denise Grafton (dgrafton@uwo.ca)	☐ Ethics Officer (ethics@uwo.ca)

cc: ORE File

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

Appendix G: Letter of Information

Treatment for University Students with Obesity through life coaching

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
Melissa van Zandvoort, M.Sc. (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 female, a full-time undergraduate student at the University of Western Ontario, between 17-24 years of age, have a body mass index equal to or greater than 30, and are not currently being treated by a physician to treat existing medical ailments (e.g.,, diabetes), the researcher would like to invite you to participate in the study. There will be a total of 5 participants in the study.

What will happen in this study?

If you agree to participate, you will receive 12-weeks of one-on-one coaching with a Certified Co-active Coach (i.e.,, 12 x 45-minute sessions) trained by the Coaches' Training Institute. 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. The coaching sessions will be audio-recorded for the purpose of identifying the Co-active skills and predominant coaching-agenda topics that facilitate Co-active life coaching's efficacy as a treatment for obesity among female undergraduate university students. At the beginning of the study you will be contacted to complete up to three weekly baseline body composition measures and two questionnaires. You will be requested to return weekly for the body composition measurements and to complete the questionnaires again at the end of the study.

As a participant, you will be requested to attend a 40-minute meeting to complete a twenty-minute one-on-one interview with the researcher and two questionnaires (requiring approximately 5 minutes each). The study will run for approximately 12-weeks following the completion of the introductory meeting and baseline period (up to three weeks in length). During the 13th week you will be requested to again respond to the questionnaires and to attend a second interview with the researcher. The purpose of the study is to identify the Co-active skills and predominant coaching-agenda topics that facilitate Co-active life coaching's efficacy as a treatment for obesity among female undergraduate university students.

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 with no effect on your status at UWO. Because the data (i.e., surveys, body composition measurements, coaching session and interview transcripts) will be de-identified immediately following their collection, you will be unable to withdraw your data from the study.

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

To preserve confidentiality, all data obtained will be kept in secured computer files and locked filing cabinets located in the Arthur and Sonia Labatt Health Sciences Building. All computer data will be accessible to only the study's lead investigator and co-investigators. In order to maintain participant confidentiality during the process of data analysis and disseminating the study's results, participants will be numbered one through five and each will be assigned a pseudonym. The participant number/pseudonym linking the participant to

the data will be held separately from the data and participant identifiers (i.e., name, date of birth, email address, telephone number) will be shredded immediately upon the completion of data collection. No names will appear on any documents published as a result of this study, all results will be presented in aggregate form. Participant number and pseudonym rather than participant name will be used to identify all audio recordings and verbatim transcripts. Data will be retained for five years after the study results have been published, at which time all data and audio recordings will be destroyed, all computer data will be erased and all written/paper data will be shredded.

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.

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.

Costs and compensation
Research has shown that when participants pay fees they are more committed to a program and are more likely to accomplish their goals. Therefore, there is a cost of $5 per coaching session (totaling $60.00) for you to participate in the study.

Contact Person (should you have any further questions about the study):
Dr. Jennifer Irwin, University of Western Ontario. Phone: (519) 661-2111

- If you have any questions about your rights as a research participant or the conduct of the study you may contact the Director of the Office of Research Ethics at (519) 661-3036, ethics@uwo.ca.

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

Appendix H: Consent Letter

Co-Active 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.

I agree to participate in the study.

_____	_____	_____
Date	Participant's Name	Participant's Signature

_____	_____	_____
Date	Researcher's Name	Researcher's Signature

Appendix I: 36-Item Short-Form (SF-36) Health Survey

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) **Vigorous activities,** 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) **Moderate activities,** 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, kneeing 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. 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
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. Definitely true	2. Mostly true	3. Don't know	4. Mostly false	5. 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 J: 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 K: Pre and Post-Intervention Interview Questions

Pre-Intervention Interview Questions

1. What is it like being you?
   - What is the impact of that on your life? (i.e., social life)

2. What does your weight represent?
   - How has your weight impacted your life?

3. What would you have to say yes and no to, to make your ideal weight come true?

4. What is the story you tell yourself about your weight?
   - What does the voice in your head say?

5. How would you describe your overall well-being?
   - What impact, if any, does your weight have on your well-being?

6. What is your relationship with yourself?
   - How would you describe your view of yourself (i.e., self-esteem)
   - What is your relationship with your body?

Post-Intervention Interview Questions

1. What is it like being you now compared to the beginning of the intervention?
   - What impact, if any, has your coaching experience had on your self-esteem?
   - What impact, if any, has your coaching experience had on your overall well-being?

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?
   - To what extent do you attribute those actions to coaching?
   - What, if anything, prevented you from taking further action or impeded your progress?

5. How do you see what you have learned impacting you in the near future?
   - Beyond the next six months, how do you see what you have learned impacting you (i.e., your behaviour)?

6. What other feedback do you have with regard to the coaching process?
    - What did you like most/least and why?
    - What was your experience of being coached over the phone?
    - Was the coaching experience what you had expected? (e.g., you setting the agenda for each session rather than the coach determining the focus?;the coaching agenda's focus or lack of focus on weight).

Appendix L: Coaching Skills Glossary

These skills are those that were identified as being most prevalent in the five participants' coaching sessions. The definitions have been taken verbatim from the skills glossary provided in: *Co-Active Coaching: New Skills for Coaching People Toward Success in Work and Life* (2nd ed.) (Whitworth et al., 2007, p.295-302). For a complete glossary of all the Co-active coaching skills, please refer to this reference.

Accountability. Accountability is having your clients account for what they said they were going to do. It stems from three questions: 1) What are you going to do?; 2) When will you have this done by?; 3) How will I know? Accountability does not include blame or judgment. Rather, the coach holds clients accountable to their vision or commitment and asks them to account for the results of their intended actions. If need be, holding clients accountable includes defining new actions to be taken.

Acknowledgement. Acknowledgement addresses the self and who clients had to be in order to accomplish the action they took or the awareness they achieved. It is the articulation of your deep knowing of the other.

Clarifying. When clients are unable to articulate clearly what they want or where they are going, the coach clarifies their experience. Clarification may be used in response to the client's vague sense of the desired outcome, confusion, or uncertainty. This skill represents a synergistic application of questioning, reframing, and articulating what is going on. It is particularly useful during the discovery process.

Intuiting. Intuiting is the process of accessing and trusting one's inner knowing. Intuition is direct knowing, unencumbered by the thinking mind. The process of intuiting is nonlinear and non-rational. Sometimes the information received through intuiting does not make logical sense to the coach; however, it is usually quite valuable to the client. Intuiting involves taking risks and trusting your gut.

Perspectives. Perspective is one of the gifts that the coach brings to the coaching relationship – not the "right" perspective, but simply other points of view. Part of coaching is inviting clients to see their lives or certain issues from different angles. When clients see things from only one perspective, they are less resourceful and may be victimized by their circumstances. When they are able to reexamine their viewpoints, look at their lives or certain issues from different angles, they are able to see possibility and change.

Powerful questions. A powerful question evokes clarity, action, discovery, insight, or commitment. It creates greater possibility, new learning, or clearer vision. Powerful questions are open-ended questions that do not elicit a yes or no response. They are derived from holding the client's agenda and either forwarding the client's action or deepening the client's learning.

Reframing. With reframing, the coach provides clients with another perspective by taking the original information and interpreting it in a different way.

Requesting. One of the most potent coaching skills is that of making a request of the client. The request, based on the client's agenda, is designed to forward the client's action. The request includes a specific action, conditions of satisfaction, and a date or time for completion. There are three possible responses to a request: 1) yes; 2) no; or 3) counteroffer.

Structures. Structures are devices that remind clients of their vision, goals, or purpose, or the actions they need to take immediately. Collages, calendar's, messages on voicemail, and alarm clocks can serve as structures.