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# **Co-Active Life Coaching as a Treatment for Adults with Obesity**

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### Abstract

This study evaluates the impact of one-on-one coaching on the waist circumference, BMI, self-esteem, self-efficacy, physical activity, and functional health status of adults with obesity. A one-group within-subjects, pre-test post-test study design was used. The study took place at the University of Western Ontario from June-October 2007. A total of 20 men and women aged 35-55, with a BMI  $\geq 30$  participated in the study. Each engaged in six to eight 35-minute sessions with a Certified Professional Co-Active Coach during which they explored desired changes and how to achieve them. Paired t-tests were used to analyse the pre- and post-quantitative data and inductive content analysis was used to assess the qualitative interviews. Significant decreases in waist circumference and increases in self-esteem and functional health status were found. Qualitatively, participants reported an increase in daily physical activity and healthier dietary choices, feelings of optimism, and greater self-acceptance. Thus life coaching shows promise as an obesity intervention, although more research is needed.

Keywords: obesity intervention, life coaching, self-esteem, waist circumference

### Introduction

Obesity is a public health epidemic causing havoc in society and requiring innovative approaches for its long-term reduction (Katzmarzyk, 2002). The incidence, prevalence, and problems associated with the increasing weight of populations in developed and developing countries has received wide-spread attention in both the media and academic publications (Lau et al., 2006). This epidemic is so problematic that practice guidelines have recently been released to help health care providers better manage and prevent obesity among their patients/clients (Lau et al., 2006). Within these guidelines, Lau and his colleagues recommend nutritional therapy, physical activity, and cognitive-behaviour therapy as part of the arsenal for obesity reduction, healthy weight maintenance, and the prevention of weight regain (Lau et al., 2006).

There have been a wide variety of different studies examining methods to decrease obesity and increase healthy bodyweight maintenance. Although a recent meta-analysis by Shaw, O'Rourke, Del Mar, and Kennedy (2007) revealed that a number of psychological interventions have been attempted to help adults who struggle with overweight and obesity, little research has focused specifically on client-centred, supportive counseling approaches. In fact, after reviewing 27 studies focused on weight management using psychological models and behaviour change methods, Hardeman and colleagues (2000) called for the need for more clarity about the particular type of model/method used in service of readers better understanding which methods work better (e.g., group, client-centred, other). Slevin (2004) also

promoted the necessity for additional research, specifically focused on directive versus non-directive counseling for obesity management.

Although additional research is needed on specific types of behavioural counseling for weight management, Shaw and colleagues (2007) reviewed 36 studies and found that when behaviour therapy and cognitive behaviour therapy are effective within obesity interventions, they seem to facilitate weight maintenance by providing clients with coping skills to help manage cues that may interfere with their weight loss, such as eating dinner at a restaurant. Cognitive techniques, such as modifying aversive thinking patterns, when added to behavioural therapy have been reported to increase weight loss and enhance weight maintenance (Cooper & Fairburn, 2001). Within the counseling relationship itself, Foreyt and Poston (1998) espoused the importance of obesity-focused behavioural counselors establishing a supportive alliance with their clients. Regardless of the specific method, using an approach informed by health behaviour theory is important for the potential success of that intervention (Irwin and Morrow, 2005; McKenzie and Smeltzer, 2001). One client-centred and theoretically-grounded approach that may be effective in increasing weight loss may be coaching.

Although most often associated with business executives, life coaching has been utilized within the health field in areas such as mental health (Grant, 2003), fitness (Tidwell et al., 2004), diabetes (Joseph, Griffin, Hall, & Sullican, 2001), attention deficit disorder (ADD) and attention deficit hyperactivity disorder (ADHD) (Ratey, 2002; Ratey & Jaska, 2002), and cancer (Brown, Butow, Boyer, & Tattersall, 1999). To date, health-related studies of coaching have not focused on any specific coaching method. Thus, the reliability and validity of the generic term "coaching" is undetermined. The Co-Active coaching method has been studied from a health-behaviour theoretical basis, but no studies to date have evaluated the behavioural impact of the Co-Active coaching method using a prospective, before and after, research design (Whitworth, Kimsey-house, & Sandahl, 1998; 2007; Irwin & Morrow, 2005). This study was designed to evaluate specifically the impact of one-on-one Co-Active Professional Life Coaching on the waist circumference, BMI, self-esteem, self-efficacy, physical activity, and functional health status of adults with obesity. There are a number of different life coaching schools and as such, it is important to distinguish that the Co-Active coaching model was used for the current study. However, from this point forward the generic term "coaching" will be used.

## Methods

This one-group within-subject, pre-test post-test study targeted a sample of 20 English-speaking men and women aged 35-55 whose BMI was  $\geq$  30, recruited via newspaper advertisement (see Table 1 below for details of participants' demographics). A total sample size of 20 individuals was sufficient to detect the hypothesized large effect (r<sup>2</sup>=.25) of a two-level independent variable more than 95 percent of the time, assuming a within-subject correlation of .30.

At baseline, participants signed a consent form and weight and height and waist circumference were measured. The researcher also administered a series of previously validated assessments: the 36-item short-form (SF-36) Functional Health Status Scale (alpha reliability .80) (Jenkinson, Coulter, & Wright, 1993); the Rosenberg Self-Esteem Scale (alpha reliability .77 to .88) (Blascovich & Tomaka, 1993; Rosenberg, 1986; Rosenberg, 1989); the adapted Godin Physical Activity Questionnaire (alpha reliability .87 to .95) (Godin & Shepard, 1986; Irwin, 2007); the International Physical Activity Questionnaire (IPAQ) (validated against accelerometers with "...80% of the estimates showing agreement coefficients of at least 70%...)" (Craig et al., 2003); barriers self-efficacy related to physical activity (alpha reliability .92) (McAuley & Mihalko, 1998); physical activity task self-efficacy (alpha reliability .95) (Mcauley & Mihalko, 1998).

	Total sample $\#$ (n = 18)	
Gender		
Male	2*	
Female	16*	
Participant Age		
35-39	4	
40-44	7	
45-49	3	
50-55	4	
Annual Family Income		
\$0-\$24,999	1	
\$25,000-\$59,999	7	
\$60,000-\$99,000	8	
≥\$100,000	2	
<b>Highest Education Level Completed</b>		
High School	10	
College	4	
University	4	Current
Employment Status		
Part time	4	
Full time	13	
No paid employment	1	
Estimated Number of Years Participants Self-D	escribed as Obese	
1-4	2	
5-9	3	
10-14	2	
≥ 15	11	
Number of Children		
1	4	
2	4	
3	6	
4	2	
None	2	
Parental Status		
Single-Parent	5	
Double-Parent	11	
Common-Law	1	
Ethnicity or Self-Identified Cultural Group		
Caucasian	16	
Italian	2	

# Table 1: Demographic Information of Study Participants

\*Two participants left half way through the intervention (one from each coach), leaving a final sample of 18. Both participants reported having busy lives and were unable to schedule weekly coaching sessions. The two participants who left the intervention were excluded from analysis.

A nutrition self-efficacy questionnaire was devised specifically for this study and was tailored after the physical activity efficacy surveys (alpha reliability .86) (Newnham-Kanas, Irwin, & Morrow, 2007). All participants met with the researcher for a 20-minute one-on-one semi-structured interview to discuss the individual-perceived impact of obesity on their lives. The interviews were audio-taped and transcribed verbatim. Member checking as described by Guba and Lincoln was used after each question to ensure the researcher accurately understood the information presented (Guba & Lincoln, 1989). After this interview, each participant met with an assigned coach for one hour during which any remaining questions about coaching were answered and general information about the participants was collected. Each participant then engaged in weekly telephone sessions with his/her coach. Missed appointments were rescheduled if \$20.00 per session to help ensure their "buy-in" and commitment to the intervention (the fee was returned to them at the end of the study). The coaches in the current study (JDI and DM) hold PhDs in the health sciences with a specialization in obesity, physical activity, and dietary intake behaviours, and their coaching certification was obtained through the Coaches Training Institute.

During these sessions, participants phoned the coach and addressed any issues about which they wanted to focus. It should be noted that participants determined the agenda of each coaching session and could focus directly on obesity-related issues or indirectly on family, career, or other issues. This may seem unusual for an obesity-related intervention; however, a basic premise of the coaching model used, as well as a variety of other supportive behaviour change approaches, is that improvements in one aspect of an individual's life infuse other aspects (Egan, 1997; Whitworth et al., 1998; 2007). It must be acknowledged that there are elements of the coaching model such as client empowerment, forwarding action, choice, and others that are shared with other models and theories used to facilitate behaviour change. Irwin and Morrow (2005) provided a review of theoretical constructs from three different wellestablished theories that are utilized via this coaching approach. This coaching approach also seems to share elements with Egan's Shared Helper Model (Egan, 1997), Self-Regulation Theory (Kanfer, 1970), Social Determination Theory (Rvan & Deci, 2000), and motivational interviewing (Miller & Rollnick, 2002) to name a few. Montpetit and Bergeman's (2007) discussion of the commonality among various labeled constructs identified the lack of *pure* originality of any behavioural approach (e.g., self-efficacy within Social Cognitive Theory is similar to perceived behavioural control within the Theory of Planned Behaviour). Even though there are constructs of well-established theories and pieces of popular behaviour change models that are shared with the coaching model used in this study, we have not been able to find another model that utilizes the full collection in the same way as is done this coaching approach.

Throughout the sessions, the coaches mainly asked questions, and the majority of questions were unscripted and open-ended tailored to each individual. As per the model's key principle, the coach's role was to help clients access their own answers using a variety of techniques. Some of those techniques included: designing a supportive alliance with the client, asking powerful questions that require the client to think deeply, champion the client's efforts, re-frame and reflect back sentiments shared by the client, acknowledge who the client is being throughout their process, challenge the client to reach for their goals, and hold accountabilities for the client (full details of the Co-Active coaching technique are given in Whitworth et al., 1998; 2007). Participants came to the University bi-weekly to have their weight measured. The two coaches in this study were not privy to data collection during the study and the researcher was not privy to the content of the coaching sessions - participants were told this at the beginning of the intervention to help decrease potential social desirability.

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

## Results

Paired t-tests using SPSS version 11.0 (SPSS Inc., 2001) were used to analyse the quantitative data and inductive content analysis as described by Patton was utilized to assess the qualitative interviews (Patton, 1987). In the latter regard, main themes that emerged from participants' experiences with the coaching intervention were identified. The researcher and another CPCC, who was not in any way associated with the current study, analysed the transcripts to enhance confirmability, as advised by Guba and Lincoln (Guba & Lincoln, 1989).

## Anthropometric Outcomes

Waist Circumference was measured by placing the measuring tape at the midpoint between the bottom of the ribs and the iliac crest along the axillary line (Heart and Stroke Foundation, 2006) using the same measuring tape for every participant pre- and post- intervention. A statistically significant decrease in waist circumference was observed [t(17) = 2.34, p = 0.032] from pre-test (M = 118.73, SD = 17.18) to post-test (M = 115.27, SD = 15.91).

Body Mass Index was calculated using the Centers for Disease Control and Prevention's (CDC) online BMI calculator (Centres for Disease Control and Prevention, 2006). The same digital weigh scale was used throughout the study. Overall, a slight decrease in BMI was noted but was not statistically significant [t(17) = 1.42, p = 0.172] from pre-test (M = 40.83, SD = 6.48) to post-test (M = 40.38, SD = 6.02).

## Psycho-social Measures

The Rosenberg Self-Esteem Scale was scored by summing the ratings assigned to each item, making sure to reverse score the positive items (Rosenberg, 1989). A statistically significant increase in self-esteem was observed [t(17) = -2.94, p = 0.01] from pre-test (M = 20.67, SD = 6.79) to post-test (M = 23.83, SD = 6.44).

For all three of the self-efficacy questionnaires, participant scores were tabulated by summing the percentages given to each question, then dividing by the total number of questions, as described by McAuley and Mihalko (1998). Barriers to physical activity self-efficacy increased and was not significant [t(17) = -1.33, p = 0.20] from pre-test (M = 47.20, SD = 20.43) to post-test (M = 52.38, SD = 18.32). Physical activity-related task self-efficacy decreased but was not significant [t(17) = 2.02, p = 0.06] from pre-test (M = 72.08, SD = 25.48). Nutrition self-efficacy increased but was not statistically significant [t(17) = -0.48, p = 0.64] from pre-test (M = 70.46, SD = 13.36) to post-test (M = 72.02, SD = 14.65).

The SF-36 Functional Health Status Scale comes with pre-assigned values to each question. Once the SF-36 scale was completed, questions were grouped into eight categories and the average was taken for each category. Functional health status increased significantly [t(17) = -2.89, p = 0.01] from pre-test (M = 66.33, SD = 19.13) to post-test (M = 75.28, SD = 16.04).

# Physical Activity

The IPAQ overall total physical activity scores were computed by summing the metabolic equivalents (METS) per week for each type of physical activity (Craig et al., 2003). An increase in IPAQ scores was observed but was not statistically significant [t(17) = -1.12, p = 0.28] from pre-test (M = 3347.58 MET's, SD = 3169.92) to post-test (M = 4961.54 MET's, SD = 6844.02).

For the Adapted Godin Leisure Time Activity Questionnaire the number of minutes and the number of days in which participants engaged in mild, moderate, and strenuous physical activity were recorded by simple summation (Godin & Shepard, 1985; Irwin, 2007). The number of days per week a participant engaged in **mild** physical activity decreased and was not significant [t(17) = 0.37, p = 0.72] from pre-test (M = 4.0, SD 2.99) to post-test (M = 3.67, SD = 3.18). The number of days per week participants engaged in **moderate** and **strenuous** physical activity increased but was not statistically significant [t(17) = -1.50]. p = 0.15] and [t(17) = -1.67, p = 0.11] from pre-test (M = 2.92, SD = 2.28) and (M = 1.08, SD = 1.65) to post-test (M = 4.06, SD = 2.65) and (M = 2.06, SD = 2.65), respectively. The number of mild 10-15 minute blocks of physical activity decreased and was not statistically significant [t(17) = 0.39, p = 0.71]from pre-test (M = 6.94, SD = 11.31) to post-test (M = 5.53, SD = 8.18). The number of **moderate** and strenuous 10-15 minute blocks of physical activity increased and was not statistically significant [t(17) =-1.18, p = 0.25 and [t(17) = -1.45, p = 0.17 from pre-test (M = 4.69, SD = 6.25) and (M = 1.00, SD = 0.17) 3.56) to post-test (M = 10.42, SD = 19.84) and (M = 4.17, SD = 11.77), respectively. The number of mild 30 blocks of physical activity decreased and was not statistically significant [t(17) = 1.52, p = 0.15] from pre-test (M = 4.22, SD = 5.08) to post-test (M = 1.94, SD = 2.88). The number of moderate and strenuous 30 minute blocks of physical activity did increase; neither was statistically significant [t(17) =-1.33, p = 0.20] and [t(17) = -1.01, p = 0.33] from pre-test (M = 2.53, SD = 3.10) and (M = 2.03, SD = -1.33) and (M = 2.33) and (M 3.23) to post-test (M = 3.94, SD = 5.30) and (M = 3.06, SD = 4.58), respectively.

In the post-intervention interview, participants were asked to describe what they learned from the coaching intervention, what actions have been taken since the beginning of the intervention, and anything else they would like to report about the experience. At the end of the intervention, considerable changes were reported in the way participants viewed themselves. The main themes revolved around feeling more optimistic about making healthy choices, experiencing greater self-acceptance, engaging in healthful actions, and experiences of engaging in the coaching intervention. Illustrative comments that exemplify the majority of participants' responses for each theme are presented in Table 2 below.

# Table 2: Quotes supporting each qualitative theme from participant interviews

### Feeling more optimistic about making healthier choices

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

"I feel like I can make better choices about myself, about the way I feel about myself and that I think I have a better, a little better tools than I had before."

## Experiencing greater self-acceptance

"The coaching made me think more about my insides rather than my whole outside package. So it was all about being happy on the inside...And eventually you'll love yourself enough, you'll be choosing the right healthy foods."

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

"[I have learned to] view myself as a better person and that it's okay to stumble. And, it's okay to make mistakes. It's just when you repeat those mistakes over and over, that's where the real problem is."

## Engaging in healthful actions

"I'm more aware of what I eat and physical activity that I do each day and, trying to get my family to do the same. To do a little more exercise and to eat healthy."

"For lunch, instead of having a sandwich and fries, I'll have a sandwich and a salad....[I am also] buying healthy snacks for me to snack on, [and] recognizing true hunger."

"I've maintained my workout schedule. This was a very, very busy time, so definitely I think that was because of the coaching."

"I didn't tell everybody [researcher/coaches] in the beginning [of the treatment] that my husband and I both quit smoking. And we both haven't smoked for six weeks....It's a big thing for us."

## Experience of coaching treatment

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

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

### **Discussion and Conclusions**

Life coaching was associated with a statistically significant decrease in waist circumference and a statistically significant increase in self-esteem and functional health status. And at the end of the study participants felt more optimistic about making healthier choices and experienced greater self-acceptance. No changes were observed with BMI or self-efficacy.

Reduction in waist circumference may have resulted from the increases in physical activity and healthier eating habits that participants reported in their exit interview. Waist circumference is considered a good predictor of abdominal and non-abdominal fat and is directly associated with all-cause mortality in middle-aged men and women (Bigaard et al., 2005; Janssen, Katzmarzyk, & Ross, 2004). Therefore, the reduction in waist circumference observed in the current study is particularly noteworthy.

We were not surprised that BMI did not change over the duration of this study because such changes typically require much more time than the 10-12 week duration of the current study (Douketis et al., 2005). If the intervention ran for a longer period of time, greater decreases in BMI might be expected.

During the exit interview, participants mentioned that the weigh scale recordings did not accurately represent the progress that was made on their self-growth. Statistically significant increases in participants' self-esteem support this statement. Many researchers believe that building healthy self-esteem is a lifelong process and certain steps are integral in improving self-esteem (Burns, 1990; Donnelly, Eburne, & Kittleson, 2001). Many of the steps proposed by Burns (1990) to improve self-esteem are components of the coaching model used in the current intervention (e.g., self-acceptance, exploring values, self acknowledgement, risk taking, and avoiding self-judgment). These elements are embedded within the coaching process and likely contributed to the increased self-esteem experienced by participants.

The statistically significant increase in functional health status is not surprising because similar results have been obtained in studies using non-surgical interventions for obesity (Donnelly et al., 2001). Individuals seeking treatment for obesity normally have lower health related quality-of-life (HRQOL) than population norms and increased HRQOL has been associated with increased weight loss (Donnelly et al., 2001; Kolotkin, Meter, Williams, 2001). Given that participants ended the intervention with increased HRQOL scores, obesity reductions may continue among the study group.

Although there was not a statistically significant increase in physical activity, from a practical standpoint, noteworthy increases in metabolic equivalents (METS) on the IPAQ were observed. A 1613.96 total MET mean difference was noted. Therefore, on average, each participant increased his/her physical activity level by 90 METS per week. To put this into practical terms, each participant may have increased his/her physical activity level by the equivalent of one 25-minute walk per week. Also, the mean difference of 10-15 minute moderate blocks of physical activity increased by 5.73 blocks per week. Given the decrease in "mild" physical activity and the corresponding increase in "moderate" and "strenuous" physical activity, participants shifted their physical activity patterns in a more healthful manner. Twenty participants were needed to reach statistically significant results. Losing two participants may have been the factor contributing to these non-significant results concerning physical activity.

With regard to physical activity barriers self-efficacy, researchers have found that when support is available to individuals trying to make changes to their physical activity behaviours, self-efficacy is enhanced (Bandura, 1977; Teixeira et al., 2005). Because a non-significant increase was observed and because participants reported that they felt better prepared to engage in physical activity, increasing the number of coaching sessions may be the support needed to overcome significantly physical activity barriers self-efficacy.

A trend decrease in physical activity-related task efficacy similar to that found by McAuley and colleagues was observed (McAuley & Mihalko, 1998). Their study concluded that a decrease in task self-efficacy might have resulted because participants at the beginning of the intervention were not aware of how difficult it would be to start participating in physical activity. Also, participants in both studies were administered self-efficacy questionnaires when they were no longer involved in the intervention. Participants were administered the final round of questionnaires 1-2 weeks after their final coaching session in the current study. Consequently, in the current intervention, participants may have experienced increased challenges to being active without the assistance of a life coach. Continued time with a coach might help increase the support needed to start and maintain a physical activity program.

Although other intervention researchers have found increases in nutrition self-efficacy the current study did not (AbuSabha & Achterberg, 1997; Carron, Hausenblas, & Estabrooks, 2003; Richman et al., 2001). However, increases were observed in studies that specifically focused on changing the eating behaviours of individuals – the current intervention did not directly target eating behaviours unless the client asked to do so.

While the lack of statistically significant findings regarding physical activity and nutrition self-efficacy in the current study is understandable, it is important to note that *some* changes in these behaviours did occur. That is, given that the statistically significant decrease in waist circumference logically can be attributed to changes in physical activity and diet, and given participants' qualitative accounts that these behaviours improved, it is likely that changes in both physical activity and diet occurred.

The other important factor in this study is that each session's coaching agenda is completely open to the client. Each client's agenda for each coaching session might be directly related to topics or issues concerning nutrition, weight control, and/or physical activity, or, they might be indirectly related to those topics or even completely outside the realm of specific health behaviours. The type of coaching used in the current study is a holistic or whole-person method of coaching. Consequently, certain skills are used during every session, while other skills are used as needed by the coach. For example, as outlined by Irwin and Morrow (2005) the techniques of challenging, requesting accountabilities, acknowledging and championing are often used, and together, serve to enhance self-efficacy and provide the reinforcement endorsed by the tenets of Social Cognitive Theory specific to health-behaviour change (Bandura, 1977; Whitworth et al., 1998; 2007). Furthermore, coaching's focus on exploring perspectives and being "in choice" can help to moderate the role of the subjective norm in health-related decision-making, which is a crux of the Theory of Planned Behavior (Fishbein & Ajzen, 1975). The foregoing examples, taken from a more comprehensive review that delineates some theories of health behaviour change inherent within the coaching model, were used to ground our underlying assumption that coaching is, in and of itself, an important behavioural intervention (Irwin & Morrow, 2005). Although we use the above explanation and examples to help illuminate "why" coaching had a positive impact in this study, no attempts were made to track the actual tools and techniques or the specificity/non-specificity (related to health behaviours) used within this study's coaching sessions. Tracking the tools and techniques and coaching topics used and covered within each coaching session would be a valuable next step in service of ferreting out the specific aspect of coaching that are most impactful when working with adults with obesity.

There are a number of potential limitations to the current study that should be mentioned. First, due to two dropouts, the current intervention only included 18 participants, 16 of whom were female, reducing the study's power and ability to generalize its findings. The number of coaching sessions participants received ranged between 6 to 8 due to missed appointments and scheduling challenges – more sessions over a longer period of time might be necessary to observe statistically significant results in the areas for which none were found. Second, a control group was not utilized in the current study and would have enhanced the internal validity and therefore, confidence with which results could be ascribed to the intervention. We must also consider the possibility that bi-weekly weight measures could have had an intervention effect by itself; however, anecdotally, discussions with people struggling to lose weight have revealed weighing oneself as a common occurrence (but not one with a treatment effect). Despite these potential limitations, important conclusions and recommendation for future studies can be drawn from this study.

This is the first study to examine life coaching as an intervention for obesity and from this investigation it is clear that coaching has the potential to impact obesity among adults in a meaningful way. Recently, Canadian clinical practice guidelines on the management and prevention of obesity in adults and children

were released (Lau et al., 2006). In that document the importance of waist circumference in the prevention and management of obesity was highlighted. Furthermore, the guidelines recommend lifestyle modification programs that include nutrition therapy, physical activity, and cognitive-behaviour therapy. In the current study we found significant decreases in waist circumference as well as meaningful increases in physical activity and self-reported positive changes in dietary intake. Therefore, we recommend that coaching be considered as one of the cognitive behavioural interventions recommended for adults with obesity. In doing so, we also encourage researchers to track the actual tools and techniques and coaching topics used within sessions in service of better understanding which aspects are most impactful for this population. Future research should also explore, thoroughly, how the coaching approach used in the current study is similar to other supportive behaviour change approaches (with an aim of identifying differently-labeled but similar approaches). We further recommend utilizing coaching in conjunction with a formalized physical activity and nutrition program. Although we wholeheartedly endorse this latter recommendation, its enactment would not be without logistical flaws. Most importantly, each aspect of the recommendation (structured physical activity, nutrition, and coaching) often comes with a financial cost to the participant. Not all obese adults are in the position to pay the fees required to access these services. However, this qualification should not be a deterrent to pursuing this type of intervention – innovative approaches are required to fund and evaluate these essential programs.

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## References

- AbuSabha, R., & Achterberg, C. (1997) 'Review of self-efficacy and locus of control for nutrition- and health-related behavior'. *Journal of the American Dietetic Association*, 97(10), 1122-1132.
- Bandura, A. (1977) 'Self-efficacy: toward a unifying theory of behavioral change'. *Psychological Review*, 84(2), 191-215.
- Bigaard, J., Frederiksen, K., Tjonneland, A., Thomsen, B.L., Overvad, k., Heitmann, B.L., et al. (2005)
  'Waist circumference and body composition in relation to all-cause mortality in middle-aged men and women'. *International Journal of Obesity*, 29, 778-784.
- Blascovich, J & Tomaka, J. (1993) Measures of self-esteem. Pp. 115-160 in J.P. Robinson, P.R. Shaver, and L.S. Wrightsman (eds). Measures of personality and social psychological attitudes. Third Edition. Ann Arbor: Institute for Social Research.
- Brown, R., Butow, P. N., Boyer, M. J., & Tattersall, M. H. N. (1999) 'Promoting patient participation in the cancer consultation: evaluation of a prompt sheet and coaching in question-asking'. *British Journal of Cancer*, 80(1/2), 242-248.
- Burns, M. (Aug. 1990) 'Ten steps to self-esteem'. Essence, 21(4), 57-58.
- Carron, A.V., Hausenblas, H.A., & Estabrooks, P.A. (2003) *The psychology of physical activity*. New York: McGraw Hill.
- Centres for Disease Control and Prevention (CDC). (2004) 'BMI: Body mass index, calculator'. Retrieved May 1, 2006, from <u>http://www.cdc.gov/nccdphp/dnpa/bmi/calc-bmi.htm</u>.
- Cooper, Z. & Fairburn, C.G. (2001). A new cognitive behavioural approach to the treatment of obesity. *Behaviour Research and Therapy*, 39(5), 499-511.
- Craig, C.L., Marshall, A.L, Sjöström, M., Bauman, A.E., Booth, M.L, Ainsworth, B.E., et al. (2003) 'International physical activity questionnaire (IPAQ): 12-country reliability and validity'. *Medicine and Science in Sports and Exercise*, 35, 1381-1395.

Donnelly, J.W., Eburne, N., & Kittleson, M. (2001) Mental health. Massachusetts: Allyn & Bacon.

- Douketis, J.D., Macie, 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.
- Egan, G. (1997). *The Skilled Helper: A Problem-Management Approach to Helping* (6<sup>th</sup> ed.). Pacific Grove: Brooks/Cole Publishing Company.
- Fishbein, M., & Ajzen, I. (1975) Belief, attitude, intention and behavior: An introduction to theory and research. Addison-Wesley, Reading, MA.
- 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, supp. 2), S27-S30.
- Godin, G., & Shepard, R.J. (1985) 'Psycho-social predictors of exercise intentions among spouses'. *Canadian Journal of Applied Sports Science*, 10, 36-43.
- Grant, A.M. (2003) 'The impact of life coaching on goal attainment, metacognition and mental health'. *Social Behavior and Personality*, 31(3), 253-263.
- Guba, E.G. & Lincoln, Y.S. (1989) Fourth generation evaluation. London: Sage.
- Hardeman, W., Griffin, S, Johnston, M., Kinmonth, A.L., and Wareham, N.J. (2000). Interventions to prevent weight gain: a systematic review of psychological models and behaviour change methods. *International Journal of Obesity*, 24(2), 131-143.
- Heart and stroke foundation. (2006) 'Measuring waist circumference'. Retrieved April 1, 2007, from http://ww2.heartandstroke.ca
- Irwin, J.D. (2007). The Prevalence of Physical Activity Maintenance in a Sample of University Students; a longitudinal study. *Journal of American College Health*, 56 (1), 37-41.
- Irwin, J.D., & Morrow, D. (2005) 'Health promotion theory in practice: an analysis of Co-Active Coaching'. *Journal of Evidence Based Coaching and Mentoring*, 3, 29-38.
- 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.
- Jenkinson, C., Coulter, A., & Wright, L. (1993) 'Short Form 36 (SF36) health survey questionnaire: normative data for adults of working age'. *British Medical Journal*, 306(6890), 1437-1440.
- Joseph, D.H., Griffin M., Hall, R., & Sullivan, E. (2001) 'Peer coaching: an intervention for individuals struggling with diabetes'. *Diabetes Educator*, 27, 703-710.
- Kanfer, F. H. (1970). Self-regulation: Research, issues, and speculation. In *Behavior modification in clinical psychology*, ed. C. Neuringer and J. L. Michael. New York: Appleton-Century-Crofts
- Katzmarzyk, P.T. (2002) 'The Canadian obesity epidemic: an historical perspective'. Obesity Reviews, 10, 666-674.
- Katzmarzyk, P.T., & Janssen, I. (2004) 'The economic costs associated with physical inactivity and obesity in Canada: an update'. *Applied Physiology, Nutrition, and Metabolism,* 29(1), 90-115.
- Kolotkin, R.L., Meter, K., & Williams, G.R. (2001) 'Quality of life and obesity'. *Obesity Reviews*, 6, 43-65.
- Lau, d.C.W., Douketis, J.D., Morrison, K.M., Hramiak, I.M., & Sharma, A.M. (2007) '2006 Canadian clinical practice guidelines on the management and prevention of obesity in adults and children'. *Canadian Medical Association Journal*, 176(8 Supplemental), S1-13.
- McAuley, E. & Mihalko, S.L. (1998) Measuring exercise-related self-efficacy. In J.L. Duda (Ed.), *Advances in Sport and Exercise Psychology Measurement* (pp. 371-380). Morgantown, WV: Fitness Information Technology Inc.
- McKenzie, J.F. & Smeltzer, J.L. (2001). *Planning, implementing, and evaluating health promotion programs*, 3<sup>rd</sup> edition. London: Allyn and Bacon.

- Miller, W.R., & Rollnick, S. (2002). *Motivational Interviewing: Preparing People for Change* (2<sup>nd</sup> ed.). New York: The Guilford Press.
- Montpetit, M.A. & Bergeman, C.S. (2007). Dimensions of control: mediational analyses of the stresshealth relationship. *Personality and Individual Differences*, 43(8), 2237-2248.
- Newnham-Kanas, C., Irwin, J.D., & Morrow, D. (2007) 'Co-active life coaching as a treatment for people with obesity'. Unpublished master's thesis, University of Western Ontario.
- Patton, M. (1987) How to Use Qualitative Methods in Evaluation. Sage: London.
- Ratey, N. (2002) Life coaching for adult ADHD. In S. Goldstein & A.T. Ellison (Eds.), Clinician's guide to adult ADHD: Assessment and intervention. London: Academic Press.
- Ratey, N., & Jaska, P. (Eds.). (2002) The ADDA Guiding Principles Coaching Individuals with Attention Deficit Disorder. Illinois: Hyde Park.
- Richman, R.M., Loughnan, G.T., Droulers, A.M., Steinbeck, K.S., & Caterson, I.D. (2001) 'Self-efficacy in relation to eating behaviour among obese and non-obese women'. *International Journal of Obesity*, 25, 907-913.
- Rosenberg, M. (1986) Conceiving the Self. Krieger: Malabar, FL.
- Rosenberg, M. (1989) 'Society and the Adolescent Self-Image'. Revised edition. Middletown, CT: Wesleyan University Press.
- 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.
- Shaw, K, O'Rourke, P., Del Mar, C., & Kennedy, J. (2005). Psychological interventions for overweight or obesity (Review). *Cochrane Database of Systematic Reviews*, 2, 1-64.
- Slevin, E. (2004). High intensity counseling or behavioural interventions can result in moderate weight loss. *Evidence-based Healthcare*, 8, 136-138.
- Statistical Package for the Social Sciences (SPSS). (2001). Chicago.
- Teixeira, P.J., Going, S.B., Sardinha, L.B., & Lohman, T.G. (2005) 'A review of psychosocial pretreatment predictors of weight control'. *Obesity Reviews*, 6, 43-65.
- Tidwell, L., Holland, S., Greenberg, J., Malone, J., Mullan, J., & Newcomer, R. (2004) 'Communitybased nurse health coaching and its effect on fitness participation'. *Lippincott's Case Management*, 9(6), 267-279.
- Whitworth, L., Kimsey-House, H., Sandahl, P. (1998) Co-Active Coaching: new skills for coaching people toward success in work and life. California: Davies-Black Publishing.
- Whitworth, L., Kimsey-House, H., Sandahl, P. (2007) *Co-Active Coaching: new skills for coaching people toward success in work and life* (3<sup>rd</sup> ed.). California: Davies-Black Publishing.

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