A Study of the Factors Associated with Initiation and Maintenance of Weight Loss

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by
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Dedication

I dedicate this document to my parents, Peter and Emily LeBlanc, for all their love, guidance and support.

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Dr. Lydia Makrides, Adjunct Professor, Department of Physiotherapy, Dalhousie University and President, Creative Wellness Solutions.

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Abstract

Traditional nutrition counselling and commercial weight loss programs that focus solely on encouraging lifestyle changes to decrease caloric consumption and increase caloric expenditure without considering other factors such as coping responses and social support tend to result in initial weight loss success. However, weight regain occurs in the vast majority of individuals. Few programs consider that program effectiveness may be impacted by the existence of factors that can lead individuals to initiate and maintain weight loss.

This qualitative pilot study identified the factors that led individuals to initiate and maintain weight loss. The purpose was to explore the beliefs and experiences of individuals who were trying to lose or had already lost a significant amount of body weight.

Results revealed twenty-two factors that led individuals to initiate and maintain weight loss with the most prominent factors being various triggers such as health, appearance, emotional and lifestyle triggers. The presence of support systems, experiencing internal motivation and wanting to role model for their children were also important factors in their decision to initiate and continue their weight loss journey.

The results of this study will assist health professionals in assessing a clients' readiness to adopt strategies and lifestyle changes to lose weight. By having an understanding of the reasons why individuals seek assistance in losing weight, health professionals can modify their weight management programs to better counsel overweight and obese individuals and help predict who will be successful at weight loss.

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1.0 Introduction

1.1 Rationale/Statement of Research Focus

The desire for quick weight loss among increasing overweight and obese populations has led to an often inappropriate response by the food industry. Each day, fast acting and unsafe dietary weight loss supplements and weight loss programs catering to these populations are developed and sold. Their promise of quick and easy weight loss has individuals purchasing their products and/or programs in large numbers. However, research indicates that though such methods may provide initial success, weight regain occurs in the vast majority of individuals (Kayman et al, 1990).

Kayman et al (1990) reported that this is also the case with traditional nutrition counselling and commercial weight loss programs that focus solely on encouraging lifestyle changes to decrease caloric consumption and increase caloric expenditure without considering other factors such as coping responses and social support. Few consider that program effectiveness may be impacted by the existence of factors that may lead individuals to initiate and maintain weight loss. A clearer understanding of these factors will help nutrition professionals improve their assessment and counselling techniques when working with overweight and obese populations.

1.2 Purpose of Research

This qualitative pilot study identified the factors that led individuals to initiate and maintain weight loss. With this information, weight management programs can be modified to better assess the needs of clients while improving weight loss and maintenance and health outcomes.

1.3 Research Objectives

The research objectives were to:

i. Identify the factors that lead individuals to initiate and maintain weight loss.

ii. Identify the differences, if any, in factors generated from unbiased and biased questioning. Unbiased meaning the use of open ended questions that did not lead subjects to identify any particular factor. Biased meaning the use of questions that addressed a particular factor highlighted in the literature review (Section 3.0).

iii. Identify the differences, if any, in factors generated by two groups. Group one being subjects who had started initiating strategies and lifestyle changes to lose weight in the previous 0-2 months. Group two being subjects who had intentionally lost at least 5-10% body weight and kept it off for the previous 6+ months.

1.4 Significance of the Study

This study explored the beliefs and experiences of individuals who were trying to lose, or had already lost a significant amount of body weight.

This exploration helped identify the factors that lead people to initiate and maintain weight loss. This information can be used by health professionals in assessing a client's readiness to adopt strategies and lifestyle changes to lose weight.

By having an understanding of the reasons why individuals seek assistance in losing weight, health professionals can modify their weight management programs to better counsel overweight and obese individuals and help predict who will be successful at weight loss.

1.5 Definition of Key Terms

National Weight Control Registry (NWCR) – The NWCR is the largest prospective study looking at long-term weight loss maintenance. Subjects include over 5,000 individuals who have lost a considerable amount of weight and maintained this loss over a lengthy time period. To enter the study individuals must verify their weight loss and complete a detailed questionnaire as well as follow-up surveys each year. These surveys help identify the weight loss strategies used and the behavioral and psychological characteristics of those maintaining their weight loss (The National Weight Control Registry, 2006).

Body Mass Index (BMI) – BMI is a body weight classification system used for Canadians age 18+ with the exception of pregnant and lactating women. It is used in conjunction with waist circumference to assess an individual's risk of developing health problems associated with being overweight and underweight. BMI is a ratio of weight to height and is calculated using the equation: weight (kg)/height (m^2). Having a BMI of <18.5 is classified as being underweight, a BMI of 18.5-24.9 is classified as being normal weight, a BMI of 25.0-29.9 is classified as being overweight and a BMI of 30.0 and over is classified as being obese (Health Canada, 2003).

2.0 Theoretical Framework

Phenomenology is the study of "phenomena" or the structures of experience. The purpose of phenomenological research is to see how people experience things from their own point of view. These experiences can include, but are not limited to, perceptions, thoughts, actions, memories, imagination, emotions and desire (Woodruff-Smith, 2003; Giorgi, 1997).

The phenomenological experience allows one to see how a person's behaviors unfold during environmental events. Often, this is without the person formulating any conscious intent as to how the particular action sequence will unfold. (Ouelette et al, 1998).

Giorgi (1997) outlines the five basic steps of the phenomenological method:

1. Collection of verbal data
2. Reading of the data
3. Breaking of the data into some kind of parts
4. Organization and expression of the data from a disciplinary perspective
5. Synthesis or summary of the data for purposes of communication to the scholarly community.

This study used the descriptive phenomenological method, whereby the researcher was open and ready to listen to each participant's description of their lived experiences. The descriptions were then separated into distinct statements that are rich in meaning. The researcher selected the meanings from these statements that were critical to the phenomenon being investigated (Kleiman, 2004).

Bracketing and lived experiences are the main features of the descriptive phenomenological method. Bracketing is when the researcher's preconceptions and biases are identified and withheld so they may receive and be open to the experience as it is presented to them. Lived experiences refer to how a person has lived through an event. An in-depth interview helps a person to recall what is meaningful to them (Kleiman, 2004).

The descriptive phenomenological method required that study participants describe their experiences in enough detail to allow the researcher to complete data analyses. Phenomenological descriptions are created by using open-ended unstructured questions (Kleiman, 2004), as was done in this study.

For this study, the phenomenological framework allowed the researcher to explore and interpret the phenomenological factors or the lived experiences of individuals who were initiating weight loss or had already successfully lost weight.

3.0 Literature Review

3.1 Obesity and Weight Management

3.1.1 Prevalence and Associated Health Risks

The prevalence of overweight and obesity is reaching epidemic proportions among Nova Scotians. In 2005, 35.8% of Nova Scotians were overweight and a further 20.7% were obese (Statistics Canada, 2006).

These statistics are disturbing considering both overweight and obesity have been linked to numerous negative health outcomes including metabolic syndrome, cardiovascular disease, high blood pressure, diabetes and some forms of cancer (Coleman, 2000). It is estimated that 40% of chronic diseases, including those just listed, can be prevented by reducing risk factors such as obesity, physical inactivity and poor eating habits (Morolla, 2004; Zhu et al, 2004).

A small weight loss of 5-10% body weight has been shown to improve an individual's insulin sensitivity, lipid profile and blood pressure (Krebs et al, 2002; Pi-Sunyer, 1993).

3.1.2 Dietitian's Practices and Intervention Strategies

A study of Canadian dietitians showed they tend to focus on a lifestyle approach when conducting weight management counseling. Their primary goal is to enhance client health by improving eating habits and physical activity levels (Chapman et al, 2005; Barr et al, 2004). They also view the subcategories of behavioral changes, physical outcomes and psychological well-being as contributing to client health (Chapman et al, 2005).

Traditionally, dietitians' role in weight management counseling has been to provide nutrition knowledge rather than taking a behavioral approach to counseling. The main education areas have included Canada's Food Guide to Healthy Eating (Health Canada, 1997; now Eating Well with Canada's Food Guide (Health Canada, 2007)), promoting the "all foods can fit" message, making small changes over time, grocery shopping and meal planning (Chapman et al, 2005; Barr et al, 2004).

Dietitians are aware of their clients' psychological health and perceptions of food, self-esteem and body image. Many seek information about their clients' motivation, goals, reasons for obtaining counseling and beliefs and relationship with food as they see these components as a critical part of counseling (Chapman et al, 2005). However, behavior modification techniques tend to be limited to goal setting and keeping food diaries (Chapman et al, 2005; Barr et al, 2004) and techniques to increase self-esteem (Barr et al, 2004).

Though dietitians recognize that counseling around psychological issues is important (Dalton, 1998), many feel that they are not qualified to discuss some of the relevant issues. Therefore, their only guidance provided is a referral to a psychotherapist (Chapman at al, 2005). Instead, dietitians want more education on the factors that influence motivation, behavior modification and other counseling techniques (Barr et al, 2004).

With appropriate training, dietitians can successfully act as behavioral counselors, using strategies to help clients change their behaviors that contribute to obesity and help them adhere to recommendations (Foreyt et al, 1998).

3.1.3 Methods Individuals Use to Lose Weight

The National Weight Control Registry (NWCR) database shows the majority of individuals utilize a formal weight loss program or professional assistance to lose weight. These include well-known programs such as Weight Watchers, Overeaters Anonymous, or one-on-one counseling sessions with a psychologist or registered dietitian.

Alternatively, others choose to lose weight on their own, without formal assistance. Significantly more women than men use formal weight loss programs or professional assistance to lose weight (Klem et al, 1997).

3.1.4 Previous Weight Loss Attempts

The National Weight Control Registry (NWCR) shows 91% of participants had previous weight loss attempts. Significantly more women than men made these attempts, though no possible reasons for this discrepancy were presented by researchers Klem et al (1997). When asked to identify what they did differently to achieve and maintain their weight loss, participants stated they had more social and/or health reasons than during the previous attempts (Klem et al, 1997).

Not surprisingly, participants used more intensive methods to lose the weight (Klem et al, 1997). However, perhaps these methods may have been too intensive and difficult to maintain for a lifetime as participants who regained weight showed significantly reduced physical activity rates and increased fat consumption (though no differences in caloric intake) (McGuire et al, 1999).

3.1.5 Weight Regain

Upon entry into the National Weight Control Registry (NWCR), sample participants lost an average of 66 lbs. and had their BMI decrease from 35 to 24. These participants were mainly white (97%) female (80%), were between 33-57 years of age (mean age 45.6 years) and had all completed at least high school. Therefore, the study is limited in its generalizability. Despite having maintained their weight loss for about six years prior to registry entry, 35% of participants gained over 5 lbs. within one year of entry while 59% maintained their weight and 6% lost more weight (McGuire et al, 1999).

This is of concern as few participants lost even 50% of the weight they gained in the first year of registry entry even when that weight gain was as little as 2-4 lbs. For this reason, dietitians and other health professionals should focus on helping clients lose even small amounts of regained weight and implement strategies to prevent further weight regain (Phelan et al, 2003).

Further analysis identified various factors that could predict who would regain weight. These factors include a higher maximum weight, larger weight loss, shorter period of weight loss maintenance, a stronger weight cycling history, a loss of inhibition and experiencing depressive symptoms (McGuire et al, 1999; Phelan et al, 2003).

Specifically, participants who lost ≥30% of their highest lifetime weight upon entry into the registry were more likely to regain weight after one year than those who had lost <25% of their highest lifetime weight (McGuire et al, 1999).

In addition, participants who maintained their weight loss for a longer period of time were less likely to gain weight after one year. Those who kept their weight off for 2-5 years had a 50% lower risk of regaining that weight. This suggests there is a "survival

of the fittest" phenomenon where these individuals adapt to some behavioral, physiological or psychological factor that allows them to maintain long-term weight loss. They may have also had more chances to develop and perform their weight maintenance skills (McGuire et al, 1999) and coping skills to effectively deal with situations such as cravings or pressure in positive ways (Klem et al, 1997).

Weight management programs that focus on behavioral techniques have been shown to be effective with clients experiencing an average weight loss of .5kg/week over a 16-20 week treatment program. Despite this initial success, most clients return to their initial weight within 3-5 years post-treatment (Klem et al, 1997), suggesting that long-term monitoring is needed.

3.1.6 Obesogenic Environment

The existence of an obesogenic environment (or one conducive to creating and maintaining obesity) presents a challenge to Nova Scotians trying to achieve a healthy weight:

1. Large portion sizes – An individual only needs to visit the local grocery store, movie theatre or restaurant to be bombarded with portion sizes that far surpass anything on Eating Well with Canada's Food Guide (Health Canada, 2007). They can have their choice of a bucket of popcorn, a litre glass of pop, a 6-8 serving dish of pasta or rice or a one pound bag of potato chips. Not only do many of these foods contain upwards of over a thousand calories but they also distort one's perception of what a healthy portion size is.

2. Advertisements – The cost of advertising U.S. products, many of which are sold in Canada, is now in the billions (Harris, JM et al, 2002). The food industry uses this money to promote products at movie trailers, through promotional events and sampling at grocery stores and mail-outs. Unfortunately, these marketing practices can significantly affect how a person's beliefs and actions around food are shaped (Raine, KD, 2005).
3. Manufacturers Claims/Product Promotion – Manufacturers have done a good job at using images and words (food claims) to promote their product; they can even convince the consumer that the product will offer something it cannot. Take for example, the product Sunkist Fruit First Fruit Snacks. Clearly marketed towards parents, this product has "fruit" in its name twice, shows images of fresh fruit on the box and makes the claim "Over 30% Real Fruit" (Sunkist, 2006). Though it indeed contains over 30% real fruit puree, in no way is this product a substitute for real fruit, as per Eating Well with Canada's Food Guide (Health Canada, 2007). But that is how it is marketed to consumers.
4. Availability (Easy Access) – Low nutrient, high calorie snack or meals can be accessed by individuals at any time. The neighborhood corner store, vending machines at work, branded coffee shops at your local hospital, traveling food wagons at your local construction site, etc. all contribute to an extremely available and accessible market of high calorie foods.

3.2 Factors Influencing Weight Loss

3.2.1 Stages of Change/Processes of Change

The Transtheoretical Model/Stages of Change is a comprehensive behavioral change model encompassing five stages: precontemplation, contemplation, preparation, action and maintenance (Prochaska et al, 1992).

In the precontemplation stage, a person is not thinking about changing their behavior in the next six months. In the contemplation stage, a person is seriously thinking about changing in the next six months, but has not committed to the change. In the preparation stage, a person is ready to make a change within the next month and may have already made some small changes in that direction. In the action stage, a person has made a change(s) in the past 0-6 month period. In the maintenance stage, a person is still maintaining that change; this stage will continue until the issue is no longer is a problem (Prochaska et al, 1992).

Although these stages are not linear, most people who have changed will have gone through these five stages, though at varying rates; they may also relapse through some of these stages over time (Prochaska et al, 1992). For example, a person who has lost weight may be in the action stage for one month then revert back to the precontemplation stage where they are refusing to even think about making a change. Individuals trying to lose weight often recycle through this model of change leading to the phenomenon of weight cycling. Of course, the goal of health professionals specializing in weight management is to have clients reach and continue in the maintenance stage until they feel weight is no longer a key issue in their lives.

The Processes of Change are another dimension of the Transtheoretical Model of change; they help us understand how these changes occur. The nine processes of change include:

1. Consciousness raising – a person gathers more information about the problem, perhaps through observation and discussion, e.g. researching local weight loss programs.
2. Dramatic relief – a person conveys their feelings towards their problem and potential solutions, e.g. feeling anger because of negative comments about their weight.
3. Environmental reevaluation – a person assesses how their problem affects their physical environment, e.g. assessing how they are unable to sit comfortably in public transit due to their weight.
4. Self-reevaluation – a person evaluates their feelings about themselves with regard to the problem, e.g. feeling that they may be able to make lifestyle changes that will result in weight loss.
5. Self-liberation – a person commits to their ability to change, e.g. joining a weight loss program.
6. Reinforcement management – a person is rewarded by themselves or by another person for making a behavioral change, e.g. buying a new, smaller sized wardrobe.
7. Helping relationships – a person opens up about their problem with someone within their social support network, e.g. attending a weight-management self-help group.
8. Counterconditioning – a person finds a substitute for their problem behavior, e.g. choosing a restaurant that serves smaller portions.

9. Stimulus control – a person avoids situations that may cause the problem behavior, e.g. avoiding hanging out with a friend who sabotages their weight loss program (Prochaska et al, 1992).

3.2.2 Decisional Balance

Decisional balance can be used to describe a person choosing to participate in certain health behaviors, including weight loss, based on their perceived advantages (pros) and disadvantages (cons) (Prochaska et al, 1994).

Over 85% of individuals who lost and maintained weight described benefits of improved quality of life and mood, increased energy levels and self-confidence, greater mobility and overall physical health. However, these improvements were only reported after the weight was lost (Klem et al, 1997). A challenge for health professionals is getting obese clients to envision the potential benefits of being at a healthy weight. In turn, these benefits should act as a motivator to initiate weight loss. Experiencing these improvements once weight loss has begun should further motivate weight loss.

Over 14% of individuals who lost, and 20% of individuals who maintained, their weight described disadvantages of an increased amount of time spent thinking about food and weight. These statistics, along with 5.9% of individuals experiencing worsened interactions with their spouse, were the only significant disadvantages reported (Klem et al, 1997). Again, these data were collected after the weight was lost; therefore, perhaps the disadvantages were not as strong in their memories.

3.2.3 Self-Efficacy

Self-efficacy refers to a person's judgment of their ability to successfully engage in a specific behavior in a specific situation (Clark et al, 1991). When applied to an aspect of weight management, a person with low self-efficacy expectations will likely have difficulty resisting tempting foods. Comparatively, a person with high self-efficacy expectations can resist tempting foods and therefore cope well with this behavioral challenge.

Using a validated self-efficacy questionnaire can help a health professional assess a client and understand which dimensions of self-efficacy are missing. Dimensions can include:

- Negative Emotions (e.g. Can you resist eating when you are angry?)
- Availability (e.g. Can you resist eating at a party?)
- Social Pressure (e.g. Can you resist eating when someone is pressuring you?)
- Physical Discomfort (e.g. Can you resist eating when you feel uncomfortable?)
- Positive Activities (e.g. Can you resist eating when you are watching TV?) (Clark et al, 1991).

Using behavioral techniques such as keeping a food diary and group discussions around factors influencing weight and reasons for participating in a weight management program was shown to improve participants' self-efficacy and weight loss (Roach et al, 2003).

3.2.4 Locus of Control

Locus of control refers to a person's belief as to how much control they have over their own lives. This concept is important because an effective weight management program will have participants take responsibility for the program's outcomes (Adolfsson et al, 2005).

As with self-efficacy, using a validated locus of control questionnaire can help a health professional assess a client and understand whether they have an internal or external locus of control. Internal locus of control means they believe that they have the power to decide whether they will lose, gain or maintain their weight and to decide how this will be accomplished (i.e. what lifestyle changes they will make). External locus of control means they believe achieving a healthy weight will depend on external factors such as luck or fate and that they can do little to achieve a specific outcome (Holt at al, 2001).

Weight loss program participants with a greater internal locus of control have lost more weight than those with an external locus of control (Adolfsson et al, 2005). This illustrates the importance of tailoring weight loss programs to focus on participants' strengths and supporting them to make lifestyle changes (Adolfsson et al, 2005; Holt et al, 2001).

3.2.5 Triggers and Motivations

Almost 77% of persons who successfully lost and maintained a significant amount of weight reported experiencing a triggering event that motivated them to implement behavioral changes to lose weight (Klem et al, 1997).

Of these individuals, 32% reported a medical or emotional trigger, 26% reported a lifestyle trigger and the remainder report other triggers such as ongoing discontent, "just decided to do it" and saw self in mirror or photograph (Klem et al, 1997). Medical triggers included varicose veins, sleep apnea, low back pain, fatigue, and aching legs. Emotional triggers included a spouse leaving and being told by someone it was because they were fat while lifestyle triggers included an upcoming event that the person wanted to look good for. Men were more likely to report experiencing a medical trigger or deciding "just to do it", while women were more likely to report experiencing an emotional or lifestyle trigger (Klem et al, 1997).

3.2.6 Habits

Habits refer to a person's usual ways of behaving. They can develop based on how frequently the behavior is practiced and to what degree that behavior becomes automatic; they are usually done on a regular (daily) basis in a stable environment (Ouelette et al, 1998).

When a person repeats and practices a behavior, the cognitive process controlling their responses becomes automatic. This means the behavior requires little attention and can be done at the same time as other behaviors. Comparatively, when habits are not well established, the behavior requires more conscious and controlled processes (Ouelette et al, 1998).

The likelihood of a person's actions depends on:

a. Their habits (i.e. how much the act has been done in the past)
b. Their intentions to complete the act (a reflection of attitude and social factors)

c. The conditions that do or do not support their actions (Ouelette et al, 1998).

Habits are triggered by environmental events; they need little attention and control. Therefore, an individual needs to prevent being near, or remove themselves from, the environmental events. Stimulus control involves recognizing the environmental events that cause over-consumption of calories and physical inactivity. Changing these events can help clients maintain their weight management strategies over the long term (Foreyt, 1993).

Bad habits are well practiced behaviors that require little effort or skill and result in poor outcomes. They often give short-term rewards that don't contribute positively to a person's long term goals (e.g. eating that last piece of cake) (Ouelette et al, 1998).

Bad habits are not often valued but may have arisen out of convenience and ease (e.g. choosing the greasy pizza slice at the cafeteria because it was ready to go, rather than waiting for staff to make a deli sandwich). When a person's bad habit can not be implemented easily (e.g. there is no pizza left), this can prompt a new behavior to emerge (e.g. waiting for the deli sandwich to be made (Ouelette et al, 1998).

3.2.7 Intentions

Intentions are a reflection of a person's feelings towards a behavior. An intention will develop when a person favors the consequences of their actions based on their past behaviors (Ouelette et al, 1998).

Putting intentions into practice can require little or lots of effort, motivation and skill. It just depends on how difficult the behavior is (e.g. walking past the high calorie

treats in a buffet) and one's ability to expect and handle environmental events (e.g. pressure from a friend to try a dessert) (Ouelette et al, 1998).

Intentions can also be at odds with habits. A person can change their beliefs about the consequences of the behavior causing them to create new intentions (Ouelette et al, 1998). For example, eating high calorie snacks on a regular basis will likely result in weight gain; this may motivate an individual to choose something else.

Creating new intentions requires adequate strength and skill to override bad habits; it also requires that a person's goals are accomplished. Good control over one's actions is needed until the new intention is stronger than the bad habits (Ouelette et al, 1998).

3.2.8 Support Systems

Support systems can be formed from a variety of individuals including professionals, family members, friends and peers. Social support is viewed as an important factor in achieving and maintaining weight loss as having a support system has been shown to help persons achieve better outcomes in weight management programs (Kayman et al, 1990).

4.0 Research Methodology

4.1 Timeline for Completion of All Study Components

December 2006	Proposal seminar
December 2006	Proposal submission to UREB
February – June 2006	Plan and conduct data collection
March – June 2007	Data transcription
June – August 2007	Thesis completion
September 2007	Thesis defense

4.2 Design and Rationale

The main objective of this research was to identify the factors that lead individuals to initiate and maintain weight loss. A qualitative research design using a phenomenological theoretical framework provided an understanding of the experiences that led to weight loss for these subjects.

4.3 Subject Selection

4.3.1 Gaining Access to Participants

Subjects were selected from three hundred and four (304) Healthy LifeWorks (HLW) project participants working in the Halifax Regional Municipality (HRM).

Healthy LifeWorks (HLW): Effect of Comprehensive Workplace Wellness on Economic & Clinical Factors is a four-year (November 2004 – October 2008) project. Its purpose is to design, implement and evaluate a template for comprehensive and integrated workplace health programs within the Department of Justice, Government of Nova Scotia. This template will then serve as a model for the rest of the Nova Scotia Public Service Commission. This project will also determine the link between health risk

factors and average benefit claims dollars, absenteeism and whether a reduction in risk factors can reduce employer costs (Makrides, 2006).

The HLW project is using a pre/post research design with clinical data being collected annually (blood pressure, cholesterol, glucose, body mass index, body fat and waist measurement) and a health risk assessment (HRA) being completed in years 1 and 4. Economic indicators (e.g. health insurance, worker compensation, employee turnover); and organizational indicators (e.g. commitment, understanding of workplace health, etc.) are collected at the beginning (March-June 2005) and end (Fall 2008) of the project. Interventions are being implemented for a three-year period between pre- and post-data collection. They consist of workshops, competitions, individual counseling, etc. on a variety of individual health (e.g. nutrition, exercise, stress) and musculoskeletal health issues. Organizational health issues are being addressed within the workplace (Makrides, 2006).

The Atlantic Health and Wellness Institute (AHWI), Research Affiliate of Creative Wellness Solutions is carrying out this project, which is funded through a research grant from Pfizer Canada Inc., AstraZeneca Canada Inc., Sun Life Assurance Company of Canada and the Nova Scotia Public Service Commission. The researcher was employed with AHWI when subject selection and the interviews for this study were taking place. The researcher had continuous contact with all Healthy LifeWorks participants when the project began in November 2004 until June 2007.

Of the data already collected within this project, certain information was accessed from each participant's HRA (completed March-June 2004) and Annual Check-Up

(completed January-April 2005). This information helped describe the research participants; it included each participant's:

- Gender
- Age / Birthday
- Height (at HRA)
- Weight (at HRA and Annual Check-Up)
- Body mass index (at HRA and Annual Check-Up)

4.3.2 Sampling Technique

Participants were selected and assigned to one of two homogenous groups. Group one had started initiating strategies and lifestyle changes to lose weight in the previous 0-2 months. Group two had intentionally lost at least 5-10% body weight and kept it off for the previous 6+ months. Intentionally means participants had taken steps to lose weight, as opposed to having lost weight unintentionally due to illness or stress, for example. This was determined when subjects were screened.

The researcher initially intended to only include subjects found in group two. However, there was concern that these individuals may have difficulty recalling the factors that led them to initiate strategies and lifestyle changes to lose weight, as the weight loss had taken place at least 6 months previous. Therefore group one subjects were added to address potential memory recall issues. That said, the researcher did not anticipate there would be many differences in the factors identified by each group, as both groups are on a similar weight loss journey, just at different times. Though this

sampling technique was effective, the initial concern of memory recall was unfounded throughout the research.

As mentioned earlier, subjects were selected from three hundred and four (304) Healthy LifeWorks (HLW) project participants working in the Halifax Regional Municipality (HRM). Of the 304 eligible participants, 104 (34.2%) were male and 200 (65.8%) were female.

Participants in groups one and two were identified from HLW's Health Risk Assessment and Annual Check-Up results. These results allowed the researcher to identify which individuals had lost body weight during the time period between which the HRA and Annual Check-up were conducted. Because the researcher conducted the interviews almost three and two years respectively after these results were collected, two e-mails (Appendix A) were also sent to all 304 eligible HLW participants. The e-mails informed participants of the research study and requested their participation, provided they met the outlined criteria. The e-mails were sent to ensure all eligible individuals were aware of the research study, as persons who had initiated strategies and lifestyle changes to lose weight in the previous 0-2 months or had lost at least 5-10% of their body weight and kept it off for at least 6 months may not have had these results captured in the HRA and Annual Check-Up.

Subjects were to be excluded if they identified themselves as having an eating disorder on their consent form (Appendix B) or had achieved a BMI of <18.5 after their weight loss.

Sampling began once ethical approval was received from the University Ethics Review Board of Mount Saint Vincent University.

4.4 Ethical Considerations and Safeguards

During recruitment, potential subjects were informed that as Healthy LifeWorks (HLW) participants they were not obligated to take part in this additional study; refusal to take part would not result in their termination from the HLW study nor their inability to participate in any HLW activities.

Subjects were asked, following consideration and the opportunity to ask questions, to sign an informed consent form (Appendix B) stating that they had been informed of the nature of the study, the amount of time and effort being asked of them, study risks and benefits, the freedom to ask questions or withdraw at any time and had consented to participate. Subjects were informed of procedures in place to shield their identity, including the assignment of pseudonyms in the thesis report.

All interviews and transcription records were kept confidential in a secure area (a locked file cabinet).

4.5 Data Collection

4.5.1 In-Depth Interviews and Validated Questionnaires

An original semi-structured questionnaire (Appendices C and D) was used to guide the individual interviews; subject answers were sometimes followed with probing to help clarify their responses. A semi-structured interview script was designed to evoke comparable responses among interviewees but also adapt to interviewees. It gave a framework for covering all areas of interest and allowed the interviewer to ask unexpected questions.

Before the questionnaire was administered, subjects were reminded that they may ask questions and were informed that they may stop the interview at any time.

Following completion of their in-depth interview, all participants were asked to complete four validated questionnaires (Appendix E) that assessed their stages of change, processes of change, decisional balance and self-efficacy. This data helped bridge the lived experiences (unbiased and biased) collected during the in-depth interviews.

4.5.2 Semi-Structured Interview Script

A semi-structured interview script was developed and utilized for group one (Appendix C) and group two (Appendix D). These scripts were intended to guide participants to answer the question "What are the factors that led you to initiate and maintain weight loss?" A graphical illustration of the research is shown in Appendix F.

4.5.3 Observation

All subjects were interviewed in person allowing the researcher to observe pertinent mannerisms, gestures and reactions (Kleiman, 2004). Interviewing subjects in a familiar, comfortable setting of their choosing assisted in putting them at ease and allowed them to act in a natural manner and be more open (Kleiman, 2004).

The researcher experienced subjects as forthright and open about their weight loss journey; subjects appeared to want to tell their story and share their experiences.

4.6 Data Analysis

All interviews were tape-recorded and transcribed verbatim by a transcriber after each interview. Transcribed interviews were reviewed and coded into a spreadsheet so that themes could be identified.

Coding the interviews helped organize, manage and retrieve the themes. Coding linked data fragments that shared a common element which could then be collectively examined to find meaning. This was done in a systematic manner, whereby themes and relationships were identified when they may be otherwise hidden by the large volume of data gathered during the interviews (Monson, 2003).

The four validated questionnaires were assessed using the scoring systems found in Appendix E.

5.0 Results and Discussion

5.1 Description of Subjects

Twenty-three individuals responded to the e-mails and consented to participate in the study. Participants were assigned to one of two homogenous groups. Group one consisted of six females and four males. Group two consisted of six females and six males. A seventh female was eligible for group two; however, because she was only able to be interviewed a month after data collection ended, she did not participate.

Since only 34.2% (104/304) of the eligible participants were male, it is not surprising that the researcher was only able to recruit 10 males for this study, compared with 12 females.

Despite the uneven group size, these numbers were sufficient to achieve data saturation; meaning additional themes did not arise past the first fifteen (approximately) interviews. Therefore, it is unlikely that further interviews would have provided a better understanding of these persons' experiences. This provided the researcher with confidence that the research objective was achieved.

Certain subject characteristics were available immediately, including age and height as they were already obtained through HRA screening completed in the HLW project. Additional information, including a weight history, was obtained when screening subjects. Table 5.1 illustrates the averaged subject characteristics for each group:

Table 5.1. Descriptive Characteristics

	Group 1	**Group 2**
Age (years)	46..8 ± 13.8	53.8 ± 11.8
BMI before initiation of weight loss	29.7 ± 6.1	33.4 ± 8.3
BMI at interview	29.1 ± 7.2	29.3 ± 7.6
% Body weight lost	2.2%	11.7%
Months since strategies were initiated	1.2 ± .8	
Months since at least 5-10% BW was lost (min. 6 months)		9.6 ± 5.4
Average age of onset of overweight or obesity (years)	36.7 ± 26.7	41.9 ± 19.9
% of group with family history (parent or sibling) of overweight or obesity	70.0% (7/10)	83.3% (10/12)
% of group who experienced previous weight loss attempts	70.0% (7/10)	50.0% (6/12)

The average age of each group was greater than that of the 304 eligible subjects in HRM, which was 43.6 years in March – June 2005 or 45.6 years at the time of interviews. As shown in Table 5.1, this was 1.2 and 8.2 years younger than the average age of group one and two subjects, respectively. The age difference between the two groups was unexpected, but did not affect the study results.

The average BMI of each group before initiation of weight loss was also greater than that of the 304 eligible subjects in HRM, which was 28.7 in March – June 2005. This was expected as individuals in both groups were initiating or maintaining weight loss. The difference in the percent body weight lost (2.2% for group one; 11.7% for group two) was expected as group two subjects had additional months to lose their weight.

Job classifications were similar among the groups with the majority being Administration (36.4%), Management (36.4%) and Technical (9.1%). When comparing these percentages to those of all eligible subjects in HRM, Administration was 33.0%, Management was 23.1% and Technical was 3.5%.

Having a family history of overweight can make weight loss more difficult though a large percentage of the NWCR's successful weight loss participants have a family and/or childhood history of being overweight (Klem et al, 1997). As shown in Table 5.1, the majority (77.3% or 17/22) of subjects had a family history of being overweight or obese.

Interestingly, the majority (90.9% or 20/22) of participants stated they only became overweight or obese as adults. Only two individuals in Group 1 reported becoming overweight or obese prior to age 18.

As discussed earlier in the literature review, the National Weight Control Registry (NWCR) showed 91% of participants had previous weight loss attempts (Klem et al, 1997). However, the % of subjects within each group who experienced previous weight loss attempts was lower in this study with 70.0% in group one and 50.0% in group two.

5.2 Weight Loss Methods Used

To gain a better understanding of their weight loss journey, subjects were asked about their most recent weight loss method used; their responses are summarized, according to group:

Group 1 (Ten Subjects)

1. Exercising at least three days per week (gym, walking). Healthy eating including increased fruit and water.
2. Exercising five days per week (gym, yoga). Healthy eating including increased whole grain products and fewer higher calorie foods.

3. Seeing a chiropractor and physiotherapist to improve her health and allow her to exercise regularly (planning to walk). Seeing a dietitian for weight management; healthy eating by following Canada's Food Guide (Health Canada 2007).
4. Exercising at least three days per week (gym). Healthy eating including fewer higher calorie foods and putting more effort into planning and cooking meals.
5. No planned exercise routine. Weight Watchers POINTS® system (commercial diet) (Weight Watchers International Inc., 2007).
6. Exercising at least five days per week (walking). Weight Watchers POINTS® system (commercial diet) (Weight Watchers International Inc., 2007).
7. Exercising five days per week (treadmill). Healthy eating including fewer higher calorie foods, smaller portion sizes and avoiding eating after dinner.
8. Planning to begin regular exercise shortly. Healthy eating including more vegetables, smaller portion sizes and fewer calories overall.
9. Exercising at least three days per week (walking; planning to ski, bike and swim in season). Healthy eating including reduced baked goods consumption and portion sizes.
10. Exercising at least three days a week (gym). Healthy eating including fewer high calorie foods and following Canada's Food Guide (Health Canada 2007).

Group 2 (Twelve Subjects)

1. Exercising at least five days a week (walking, running, biking). Healthy eating including increased vegetable and whole grain consumption while reducing overall portion size.

2. Exercising at least three days a week (gym). LA Weight Loss (commercial diet) (LA Weight Loss Centers, 2007).
3. Exercising at least four days a week (walking, gym). Healthy eating including reduced portion sizes and following Canada's Food Guide (Health Canada 2007).
4. Exercising at least two days a week (gym). Healthy eating including reduced portion sizes and increased water consumption.
5. Exercising at least five days a week (walking, home exercise equipment). Healthy eating including reduced portion sizes and increased water consumption.
6. Exercising at least three days a week (walking). Weight Watchers POINTS® system (commercial diet) (Weight Watchers International Inc., 2007).
7. Exercising at least five days a week (walking). Healthy eating including fewer high calorie foods, reduced portion sizes and increased water consumption.
8. Exercising at least two days a week (walking). Healthy eating including fewer high calorie foods, reduced portion sizes and following Canada's Food Guide (Health Canada 2007).
9. Exercising at least five days a week (walking). Healthy eating including reduced portion sizes and following Canada's Food Guide (Health Canada 2007).
10. Exercising at least four days a week (walking). Healthy eating including more vegetables, whole grain products and water and less meat.
11. Exercising at least four days a week (walking). Healthy eating including reduced portion sizes and following Canada's Food Guide (Health Canada 2007).
12. Exercising at least two days a week (gym). Healthy eating including less alcohol, fewer high calorie foods and reduced portion sizes.

As shown above, the majority (72.7% or 16/22) of subjects are losing or have lost weight by exercising regularly and eating healthy. 13.6% (3/22) of subjects are losing or have lost weight by exercising and following a commercial weight loss program. 9.1% (2/22) of subjects are losing weight by eating healthy with no exercise while 4.6% (1/22) is losing weight by following a commercial weight loss program with no exercise.

When comparing the weight loss methods used by groups, two subjects in group one comprised the 9.1% of subjects losing weight by healthy eating with no exercise, whereas all subjects in group two included exercise in their weight loss method. However, both subjects specifically mentioned their intention to begin an exercise program within a month following the interview.

5.3 Subjects' Experiences: Identifying the Factors Associated with the Initiation and Maintenance of Weight Loss

This section presents the experiences of twenty-two subjects who have initiated and/or maintained weight loss. These experiences are summarized through a discussion of the factors associated with the initiation and/or maintenance of strategies and lifestyle changes to lose weight, which were identified through unbiased and biased questioning.

This section discusses the twenty-two factors identified by all subjects, while comparing the responses evoked from biased versus unbiased questioning and discussing the differences and similarities between groups one and two.

The factors in sections 5.3.1-5.3.3 are presented in their order of prominence. That is, the factors presented initially in each section are those that were identified most often by subjects while those presented towards the end were identified least often.

5.3.1 Factors Identified from Unbiased Questioning

The questions “When did you start your most recent weight loss journey?”, followed by the probe “What was happening in your life during that time?” and “What were the main factors in your decision to start your current weight loss journey?” led subjects to openly discuss the factors associated with the initiation and/or maintenance of their weight loss journey. These questions are illustrated in the Interview Scripts (Appendices C and D). The following factors were identified solely by the subject, without any influence of the interviewer/researcher.

5.3.1.1 Health Triggers

As discussed in the literature review, persons who successfully lose and maintain a significant amount of weight often report experiencing a triggering event that motivated them to implement behavioral changes to lose weight. Health (medical) triggers can include health conditions (e.g. pain, fatigue, disease states), potential for developing health conditions or medical advice provided by a health professional.

Subjects in both groups one and two identified health triggers as a major factor in their decision to initiate weight loss. They discussed the role their family physician or another health professional played in their decision to initiate weight loss.

Gordon: *When my doctor started talking about the high cholesterol and you see people dropping dead just like that, it kind of makes you think you know, you don't want to leave small children and a wife behind with no daddy.*

Sally: *…I got my annual check up from my doctor and she said my cholesterol was a touch high. So now I'm getting some medical signs that I need to do something. Well in the conversation he mentioned some things that I could do and weight loss was one of them that I had, it was on my list anyway and like cutting down some of my fat or, which would help with the weight too and exercise which would help with the weight. So it all kind of wrapped together.*

Subjects also expressed not wanting to experience the same health problems that friends and colleagues are having at their age.

Patrick: *Everyone else I know that, several of my friends are obese and I did not want to wind up like they are and have the health problems that they're experiencing at their age.*

Mary: *…now that I'm 42 years old, a lot of people my age are, you know you see them in… and they're just dying from heart attacks and strokes and I just want to live, I want to live to be an old lady and I want to be healthy and you know, do the best I can with the body that God gave me you know.*

Subjects described the effect being overweight was having on their health at the time they decided to initiate strategies and lifestyle changes to lose weight. Both groups discussed how being overweight or obese affected their daily living and overall wellbeing.

> **Jane:** *…I just want to feel like I can walk up the steps without panting. I'm you know, kind of struggling to get that breath. So I just wanted to be comfortable with it and I think having excess weight just makes you work a little harder at it.*

> **Charles:** *Difficulty going up long flights of stairs. I would sweat a lot doing like, mowing the lawn I would be soaked mowing the lawn.*

Subjects who had recently initiated weight loss strategies (group one) expressed wanting to lose weight to avoid the health problems experienced by other family members, in which being overweight or obese can be a contributing factor.

> **Jane:** *…there's diabetes and high blood pressure and thyroid problem in our family. So I just don't want to be a good candidate for that.*

> **Cathy:** *Um, well my dad had a brain tumour, my dad had a heart attack, my dad had bowel cancer, my dad's diabetic. My grandmom was diabetic. I had gestational diabetes when I carried my children and weight of course is one of the contributing factors for diabetes too. It's an awakening you know…*

5.3.1.2 Appearance Triggers

An appearance trigger was another major factor in subject's decision to initiate their weight loss journey. Subjects in both groups described seeing themselves in pictures or the mirror or simply feeling that their clothes were too tight, leading them to realize that it was time to lose weight.

> **Mary:** *…you don't realize, I don't think, how big you've gotten until you actually look at a picture of yourself and I had reached 160 and I looked at the picture and it's not the person who I'd envisioned in my mind and it didn't seem like me and I was just kind of devastated actually and I said, my New Year's resolution was just to take it one step at a time and get fit.*

> **Jessie:** *…my clothes were not fitting and everything's tight…that's what really motivated me and I'm determined to get it off and I will get it off, you know.*

> **Patrick:** *I guess the real indicator was the tightness of the clothes and then to look in the mirror and go, yeah you know, it's time to trim that back a bit.*

5.3.1.3 Emotional Triggers

As discussed earlier, emotional triggers could include being told they were overweight or experiencing a shift in their self-worth and self-confidence.

Subjects in both groups reported that many of the emotional triggers were comments made by their spouse and/or family members.

Jessie: *Well my husband, he noticed and he told me that I was gaining weight and I said I know, you don't have to remind me. …once he told me I was gaining weight, it was very noticeable, he said you're getting chubby.*

Charles: *…we were talking about the cottage and my grandson who was four years old said you know, papa he said, I asked him what do you remember about being at the cottage that you like so much, oh well I like the stories. And then all of a sudden out of the blue he said I remember your big boobs papa. And I thought okay. So that was kind of an incentive that kind of helped me get going. Well all through the fall I managed to keep on going. That was the straw that broke the camel's back.*

Subjects also discussed the effect being overweight and/or losing weight had on their self-worth and self-confidence.

Katie: *…it's the confidence and the self-respect that I would have for myself if I could gain control of that aspect of my life. …I don't think that it's possible to eat something like that without, without imaging my fat cells growing as I'm eating it.*

Nadine: *… it's a real kick in the stomach you know, like thinking okay, well this is not where you want to be. You know, it's all very negative impacting for sure.*

In a different twist, one subject (group one) was driven by her desire to help and support her husband, while another (group two) was motivated by the impact of his recent divorce.

Cathy: *…I was driven by my husband. He had high cholesterol and high blood pressure and his weight was too high. …I want my husband to live healthy and I want to be healthy...*

Kevin: *Um, back in 2005 I went through a divorce right, so I think probably that played a role. A lot of people turn to alcohol or some other form of that, while I tend to turn to trying to get myself back into physical shape as well, which helped me mentally.*

5.3.1.4 Lifestyle Triggers

As discussed in the literature review, lifestyle triggers could include an upcoming event that the person wanted to look good for, a major life event such as retirement or even receiving a gym membership. Subjects in both groups discussed the role lifestyle triggers played in their decision to initiate weight loss strategies.

Hayley: *I just think that I have a very strong motivation this time. I'll be seeing people I haven't seen in a few years and um, you know I want to look good and actually the last time they saw me I was, probably weighed less than what I do now. So I guess it's uh, selfish reasons.*

Charles: *And retirement's coming up and I would like to be active in my retirement.*

5.3.1.5 Support Systems

Subjects in both groups discussed the role support systems played throughout their weight loss journey. They reported receiving support from their spouse, family members, friends, colleagues and health professional. This support came in many forms including encouraging words, offering knowledge or providing healthier food options at home and work.

Nadine: *The whole office was kind of behind that you know, leave out the doughnuts, give us you know fruit or something healthier to eat than that. I guess it was easier because the environment was all supportive.*

Sally: *…my husband is my biggest cheerleader and he's like if this is what you want to do, I'm behind you if you want to walk after supper or whatever, you know, he's good. He's a very good support. …people at work were doing it too helped and that focus was on wellness…*

Gordon: *… she's (doctor) been checking my cholesterol ongoing and it's always kind of borderline and then I cut back on the fried foods and stuff and it gets better. So she's been kind of delaying for the past probably two or three years in putting me on cholesterol medication. So she's actually been kind of encouraging me to do what I can to lose weight and get healthy.*

5.3.1.6 Internal Motivation

Though subjects in both groups discussed the role internal motivation played in their decision to initiate weight loss, those in group two tended to more openly express and emphasize this factor. That is, group two subjects spoke of this factor more often, in greater detail and with added enthusiasm. This was not unexpected as subjects who have already successfully lost weight may be more likely to be internally motivated than those just beginning their weight loss journey.

Gordon: *I kind of had some reflection on it a little bit. I knew it's what I had to do… I'm not happy with the weight I'm at so enough is enough, so I've got to start doing something.*

Doug: *…I'm a big believer in that you have to internally want it in order to do it. Even if you did have a health issue and somebody told you if you don't quit you're going to you know, die sort of thing. I think it's really you have to be motivated internally to actually do things.*

Subjects in group two spoke not only of the motivation coming from within, but also the importance of taking responsibility for their actions.

> **Mary:** *Owning up. Owning up. Looking in the mirror and being honest with yourself, you know. And saying you know, it's nobody else's fault that you're at this stage and this weight and this, you know, it's people that are like oh, I'm sick, I'm tired, I'm on anti-depressants and I'll never lose the weight and you know, you just have to finally stop feeling sorry for yourself and make the decision that you are responsible for yourself and your own life and how you're going lead it and make the choices. It's all about choices. I made the choice, you know, and I don't ever plan on being heavy again.*

> **Charles:** *Um, I don't like failure and especially if it's clearly my responsibility and in this case, there's nobody else to blame but me.*

5.2.1.7 Economic Triggers

Subjects in both groups identified economic triggers as a factor in their decision to initiate weight loss strategies. These included not wanting to waste the cost of gym memberships or to spend more money on new larger clothes or needing to achieve and maintain a healthy weight in order to continue to work and make money.

Jane: *So that was a real motivator, the cost of it (gym) and I have that equipment at home that my husband's let me accumulate over the years.*

Henry: *Um, it's more economics I guess. Um, it's a matter of clothing. I mean I've got a lot of clothes, you get to my age and you accumulate, almost 60, you accumulate a lot of suits and sports jackets that aren't cheap and uh, if you buy, you know bit by bit over the years and you don't want to invest in an entirely new wardrobe and the clothes you do have, you don't want, you want to be able to button up a jacket kind of thing.*

Bill: *…when I'm ski coaching it's a little different than other coaching, you actually have to demonstrate the ski skill. Well I have to maintain my skill and part of that is my physical ability.*

5.2.1.8 Desire to Role Model

Subjects in both groups shared their desire to be a role model to their children by making healthy lifestyle choices. They expressed wanting to set a good example and to inform them of the positive changes that come along with being healthy and reaching one's goals.

George: *…I think it's the whole sweet package, showing by example and I'm roller blading with them (children) or biking and stuff.*

Mary: *I've got two little girls and I want to be motivation for them as well because they're at that age where they're watching people and making decisions in life and you know, you're their role model. So I just, I want them to know about being healthy.*

5.2.1.9 Identifying and Managing Potential Setbacks

Subjects in group one discussed how they identified and managed potential setbacks, which allowed them to successfully continue their weight loss journey. It is not surprising that these comments came from subjects in group one instead of group two as they had just started to initiate weight loss strategies and lifestyle changes and may have been looking at upcoming challenges and setbacks that could hamper their weight loss efforts.

Jane: *…she (cousin) hasn't been able to go (for a walk) but to offset that I would just go and pick up my you know, my niece and my nephew and go out to Shubie Park for a good hour and a half. But that will be weather permitting too, if it's pouring down rain we probably won't do that but I'll try to go to the gym that night.*

Gordon: *I'm kind of concerned about the summer time, we go away quite a bit like for a month at a time to our cottage and I won't be as active on the treadmill, so I'm kind of planning for that as well. Maybe go for a walk each morning…*

5.2.1.10 Success of Others' Trigger

Subjects in both groups discussed how the successful weight loss of others prompted them to initiate their weight loss journey. Subjects said their desire to lose weight was sparked by seeing someone close to them making a lifestyle change and/or losing weight.

> **Sara:** *…I saw some colleagues um, in the first session (of Weight Watchers) losing some weight and I noticed that and I joined the next one.*

> **Charles:** *…the incentive was my daughter had lost thirty pounds. It acted as a motivator. The pastor and my daughter, those were the two. And there are several people around here (work) that have lost weight.*

5.2.1.11 Convenience Trigger

Females in both groups reported starting their weight loss journey based on the convenience of joining the Weight Watchers (Weight Watchers International Inc., 2007) program at work. No males identified this trigger as a factor in them initiating weight loss, though this may be due to fewer men choosing to join formalized weight loss programs such as Weight Watchers.

> **Barbara:** *Convenience and I say that because at the time they were starting Weight Watchers at work and it was just so convenient.*

Sara: *…with the Weight Watchers program at work and that got me into that. And I honestly that really just prompted me, just the convenience of it all, it was right here.*

5.2.1.12 Influence of Past

A subject in group one discussed the role her past weight management issues played in her desire to initiate strategies and lifestyle changes to lose weight.

Katie: *I think for me, myself it's just a lifetime of just being acceptable or, not acceptable and probably just goes back to being in elementary school and you know how everybody teased the fat kid and nobody wants to be the fat kid.*

5.3.2 Factors Identified from Biased Questioning

Numerous biased questions were asked of participants as illustrated in the Interview Scripts (Appendices C and D). These questions focused on a variety of factors that the researcher anticipated may have played a role in subjects' decision to initiate strategies and lifestyle changes to lose weight, based on the literature review.

The following factors are those that subjects identified as leading them to initiate their weight loss journey.

5.3.2.1 Changes in Priorities

Change(s) in priorities was a main factor for subjects in both groups. They identified exercise, healthy eating and meal planning and preparation as being their new priorities.

> **Cathy:** *Now in the morning when we're having our breakfast we decide what we're having for supper, where before I would come home from work and I'd start pulling something out and it would be you know, what can we fix quick and eat where now I'm thinking about it.*

> **Rachel:** *So I just had to make, have a change, I had to do something different. Yeah, get back to my exercising and make that a priority to take care of myself. The work will always be there but you know, whether or not I'm up to doing it is another thing and that's what I could control. So control that.*

> **Charles:** *I'm much more focused on self in particular in protecting the time in order to do exercise, to walk or whatever which is an issue with me. Overbooking appointments and stuff and not leaving any personal time. So that has definitely changed. That was the main thing.*

5.3.2.2 Belief in Ability to Lose Weight

Subjects in both groups expressed belief in their ability to lose weight. Interestingly, subjects used terms such as "mind frame" and getting "mentally prepared" to describe that belief.

Jessie: *…I might have felt a little down back you know in February before this and thought maybe well it's not going to work and I almost let myself go and then I said, what am I doing, you know to myself, like just did a change of mind because it wasn't like me to give up.*

Mary: *I knew I could. I just had to get mentally prepared. It's all about getting to that minute, you know, that mind frame and you know you can do it, it's just when are you going to do it and you can actually sit down and make the decision and to commit and I just said that's it.*

Phillip: *…through the diabetes clinic in Halifax and the education I took through them and um, I learned how to manage my weight then and I knew I could do it.*

5.3.2.3 Identified Weight Loss Goal

Most subjects in both groups had identified a weight loss goal for themselves, usually at the beginning of their weight loss journey, but sometimes midway through it; and sometimes that goal changed as weight was lost. Their goal was usually to lose a total number of pounds, lbs. per week or to achieve a certain weight. No subjects identified trying to achieve a certain size of clothing or to look a particular way (e.g. stomach flatter) as a weight loss goal.

Gordon: *Oh right now I'm 247 (lbs.), if I got down to 210 (lbs.) I'd be happy.*

Doug: *…a pound a week; 30 lbs. a year.*

Hayley: *(To reach)140 lbs. in 12 weeks time.*

Jack: *…to lose twenty pounds. Yeah, when I got down to 220 I said oh, I'm going to keep on going. Then I wanted 210.*

5.3.2.4 Identified Lifestyle Goals

Subjects in both groups described wanting to achieve lifestyle goals for themselves by losing weight. These goals included wanting to return to favorite sports and pastimes such as archery and water skiing while others wanted to become physically stronger and increase their energy levels.

Phillip: *Well some of my goals have been to get back into some of the things I used to do. One of the things that I got away from that I really enjoyed always was archery and I haven't picked up my bow in years and this spring I renewed the interest in archery and I'm back out to the archery club, that's really taken over this year and things like that.*

Bill: *We bought a brand new speed boat for water skiing and I've committed myself to this summer to getting back to water skiing.*

5.3.2.5 Identified Maintenance Plan

Subjects in both groups stated they had thought about a maintenance plan, which was essentially to continue with the lifestyle changes they had initially adopted to lose weight, though subjects also spoke of wanting to be a bit more liberal with their eating and exercise habits once their weight is lost. As expected, subjects in group one spoke of their maintenance plan in future terms, whereas those in group two spoke of their plan in present terms.

> **Patrick:** *I think I'll be continuing with the same things I do now, yes. …I think if I keep changing, adapting to what I eat, or what I eat and what I use as opposed to what I want, I think that's the biggest change.*

> **Doug:** … *what sort of leans towards a maintenance plan is healthy lifestyle, health and nutrition and also that I think, I think that it's important to monitor your weight regularly.*

> **Cathy:** …*we weigh in Monday mornings when we wake up… And we thought that maybe possibly that we could, we would maintain the diet that we're eating through the week and maybe on the weekend we would introduce maybe, you know could have a piece of pizza or, introduce maybe some bad food that isn't for a dieter, some what is it called, comfort food.*

5.3.2.6Preventing and Managing Tempting Situations

Subjects in both groups identified ways to prevent or manage tempting situations. All of the subjects' responses revolved around tempting food situations; this was not surprising as they noted food availability at their workplaces is quite high, usually in the form of candy bowls at coworkers' desks, birthday or holiday treats and buffets, staff appreciation meals, etc.

Subjects' methods of *preventing* tempting situations included avoiding entering rooms that contained tempting treats, bringing along lower calorie food options to social gatherings and not purchasing high calorie treats (e.g. chocolate, potato chips) for themselves and asking spouses or colleagues to do the same.

Subjects' methods of *managing* tempting situations included convincing one's self they were not interested in the tempting food, eating only the nutritious (and lower calorie) part of a higher calorie food such as the vegetables on top of nacho dip or choosing lower calorie options at a buffet. Some subjects completely avoided or shared higher calorie foods, while others avoided social situations where they knew these foods would be offered or gave in to the tempting situation but compensated later on for consuming the extra calories.

> **Doug:** *Well I do cut out things, some things completely. Like for instance, like the Coke. It's high in calories so I don't even keep it on hand even if you say oh well, I'm only going to have one once in a while. There's just no sense in having it on hand.*

Hayley: *I'm afraid, I don't have a whole lot of will power and I know that, so I'll avoid situations where I won't be able to resist that, high calorie meals, high calorie snacks.*

Bill: *…Easter weekend is coming up and I'm going to my mother's for Easter dinner so what I'll do there is I'll make sure I increase the exercise and minimize other meals because I know that's one meal that is going to be way out of balance in calorie intake. So I'm conscious of that, I'll pay attention to that.*

Mary: *…you allow for things but you pick a time and a place, just like with anything, you know and if you feel like having a chocolate bar, buy a chocolate bar and give half to somebody else.*

5.3.2.7 Increased Awareness of Behaviors

Subjects in both groups experienced an increased awareness of their behaviors such as the amount of television watched and the food they consumed. More specifically, subjects spoke of a greater awareness of the enjoyment of food, their food choices and portion size.

Sally: *Portion size …I was more aware of what I was eating for my snacks as well, trying to you know, concentrate on foods and healthy stuff.*

Rachel: *…when you start your weight loss they ask you to measure everything and when you start measuring things, you realize what half a cup is or what a portion size is and you think, well my goodness I've been eating twice as much or three times as much and I didn't even realize.*

Subjects also experienced a greater awareness of their goals and the triggers that lead to destructive behaviors.

Kevin: *…it was a heightened awareness in terms of what it was I wanted to accomplish and how I was going to do it.*

Bill: *…you naturally would be more conscious about tracking things, you're thinking more about what contributes to the weight gain and the weight loss…*

Hayley: *…I try and figure out what my triggers are, boredom is definitely one. I try to keep busy.*

5.3.2.8 Identified Pros and/or Cons of Weight Loss

Subjects in group one shared what they believed to be the pros and/or cons of weight loss while those in group two identified the pros and/or cons of weight loss they had actually experienced. This was expected as group two has already successfully achieved and maintained weight loss for 6+ months. For example, subjects in group one revealed:

Hayley: *I'm not going to be able to um, probably socialize like I used to… Hopefully it will help my blood pressure. Now I'm on two types of medication for that, I would really like to be able to drop at least one of them.*

Gordon: *Uh, I'd be healthier, I'd feel better, um, look better, feel better about myself, I wouldn't have sleep apnea probably, I wouldn't have to worry about the cholesterol, I would be more active so I could play hockey, things like that.*

In contrast, group two subjects reported the pros and/or cons they have already experienced:

Mary: *…raised endorphin level, you know the depression is gone, the self pity is gone, the confidence is all, you know what I said before, I mean those are all pros, the good health, the role model for your kids. I do a lot better at work, I have a lot more energy, more mentally focused and I can get things done a lot quicker and just the work gets a lot more out of me, my kids get a lot more out of me you know.*

Charles: *I mean the pro is definitely living longer. And not being dependent on drugs for cholesterol and diabetes. Discipline. Forced changes in priorities.*

5.3.3 Factors Identified in Both Unbiased and Biased Questioning:

There were numerous factors that led subjects to initiate their weight loss journey, which were identified equally in both unbiased and biased questioning.

5.3.3.1 Identified Weight Loss Plan

As was illustrated in Section 5.2, all subjects stated they had a weight loss plan in place, which allowed them to achieve their weight loss goals.

5.3.3.2 Change in Attitude Towards Weight Loss

Subjects in both groups reported changes in attitude towards weight loss. There were no marked differences in responses to unbiased or biased questions, between groups.

The main change in attitude was how subjects perceived ease of weight loss, as compared to when they were younger. There were subjects in both groups who believed weight loss to be easier than they thought it would be while others reported finding the opposite to be true.

> **Katie:** *…now I'm getting old and my metabolism has slowed down or now I've quit smoking and my metabolism has slowed down, or maybe it's a combination of both but um, I think back to being twenty-two years old, I used to eat McDonalds three days a week and KFC the other four days and you know, I had no problem keeping my weight down you know, just by going to the gym and now it's like all of a sudden nothing really helps and that's, you know it's a little bit depressing. It's a little bit hard for me to swallow.*

Sara: *I was losing gradually and feeling good, feeling better all the time and I, and it wasn't that hard, it wasn't that bad.*

Gordon: *The lighter pounds are easier to take off than the heavier ones I guess. It's not as hard as I thought it might be. Even in the evenings, I still have the cravings and stuff but it's just really not as hard as I thought it would be.*

Bill: *… like when I was in my twenties, thirties, I could drop five pounds in a couple of days and it would stay off. … but in my forties, it's been difficult to drop weight.*

Subjects also expressed a greater understanding of the changes required for weight loss to occur and the need to feel passionate about weight loss.

Doug: *I understand a lot more about weight gain and how you lose weight and that there is no real quick, quick fix and you if take the weight slowly and manage it properly and do lifestyle changes that you're more apt to keep it off and at the same time you're able to maintain energy levels.*

Kevin: *I think you become somewhat passionate about it. As you get older it gets harder to do those things and so if your passion isn't heightened then you're not going to succeed.*

5.3.4 Motivators Throughout the Weight Loss Journey

In addition to sharing the factors that led them to initiate strategies and lifestyle changes to lose weight, subjects also discussed how they continue to remain motivated as their weight loss journey continued.

As illustrated in the following quotes, responses included increased self-esteem, productivity, energy and ability to exercise; losing weight; having old clothes fit again; reaching weight and lifestyle goals; improved health; receiving positive comments about their weight loss and feeling younger.

> **Hayley:** *Um, I feel empowered because I have done very well. In the last three weeks I've lost 6.6 pounds .I feel that you know, I can do this. Um, I feel in control.*

> **Gordon:** *I don't even like getting up to go to work in the mornings, let alone getting up and getting on the treadmill. But I tried it and so, I feel like a million bucks after doing it and then the day is great and I don't have to do it in the evenings, now I do it in the morning.*

> **Patrick:** *…I'm gaining a whole lot of confidence about my ability to be able to go and do something about it, having a little more control over it. And the funny thing is that with that I also make better choices about what my food is and that sort of thing.*

Barbara: *It's very uplifting, you know like the day I went back down that size in clothes, it was like I was twenty years younger again. I just have energy and I feel good about myself.*

5.3.5 Subjects' Prior Weight Loss Attempts

Subjects were asked about their prior weight loss attempts to help the researcher understand how their current weight loss journey differed from previous journeys. As was illustrated in Section 5.2, during the current weight loss journey:

- 72.7% (16/22) of subjects were losing or had already lost weight by exercising regularly and making healthier food choices (e.g. consuming more whole grains, vegetables and fruits and fewer high calorie foods)
- 13.6% (3/22) of subjects are currently losing or have lost weight by exercising and following a commercial weight loss program
- 9.1% (2/22) of subjects are losing weight by eating healthy with no exercise
- 4.6% (1/22) of subjects are losing weight by following a commercial weight loss program with no exercise

Whereas, in previous weight loss journeys:

- 31.8% (7/22) of subjects exercised regularly and made healthier food choices
- 18.2% (4/22) of subjects followed a commercial weight loss program (e.g. Weight Watchers) (Weight Watchers International Inc., 2007)
- 9.1% (2/22) of subjects followed a non-commercial diet (e.g. high protein low carbohydrate diet, cabbage soup diet)

- 9.1% (2/22) of subjects took diet pills (e.g. herbal diet pills)
- 31.8% (7/22) of subjects have had no previous weight loss attempt

All subjects who experienced previous weight loss attempts reported being unable to sustain those weight loss or maintenance plans to ensure the weight remained off.

It is noteworthy that the percentage of subjects who were losing or had already lost weight by exercising regularly and making healthier food choices increased from 31.8% to 72.7%. As was discussed in the literature review, these are intervention strategies recommended by Canadian dietitians while conducting weight management counseling (Chapman et al, 2005; Barr et al, 2004).

Also noteworthy is the percentage of subjects who followed a non-commercial diet or took diet pills decreased from 18.2% to 0.0%. Based on the restrictive nature of these methods, they can be considered to be more intensive and therefore may have been too difficult to maintain in the long term. The NWCR study showed that participants used more intensive methods to lose their weight (Klem et al, 1997) *and* 35% of participants gained over 5 lbs. within one year of entry into the National Weight Control Registry.

> **Katie:** *…I did Atkins. That, I didn't like it though. I mean I knew that it was unhealthy and that's why I didn't really follow it for very long. I think I did it for about a week but the idea of eating as much greasy bacon as you want and cheese and you know, no fruits. I mean that's just bad and I knew that.*

> **Donna:** *…I've been through this before. I mean it's not the first weight loss attempt. …the last time was probably around the year 2000, when I increased my*

activity level. That was the big change I made then, well I mean plus the healthier eating and I went from a size sixteen to a nine and I maintained that weight for a few years but then got, I stopped exercising as much and just gradually you know, got back into some bad habits…

Jack: *Well I guess in the past each time I tried I didn't stay with it and by not staying with it, I wasn't accomplishing anything…*

Though many subjects had multiple previous attempts, these results were based on what the subject considered to be their largest weight loss effort. Of the fifteen subjects who had previously attempted to lose weight, 73.3% had made multiple attempts. There were no marked differences between groups one and two; subjects in both groups reported trying the above mentioned weight loss methods.

5.3.6 Subjects' Belief in the Success of this Weight Loss Experience

Though subjects believed in their ability to lose weight, the researcher wanted to determine subjects' belief in their long term success. To accomplish this, subjects in group one were asked "Why do you think you will be successful at losing weight now?

Patrick: *Well for one it's because I've done it before and I know from my friends' experience, that they can do it. And I'm, I've reached a point in my life where I'd better start doing it or I'm going to have problems like my father did. I'm certainly going to make the effort.*

Jessie: *…I'm happy with my decision… I'm determined to lose it and I will.*

Some subjects in group one questioned their potential for weight loss success:

Katie: *…I have very, um, very low will power… I think it's… I really shouldn't, no I should, I shouldn't, no I'm not going to have any and then as you're telling yourself that you shouldn't you're going to the fridge and you're pulling it out. And um, so yeah I think probably there's a lot of conflicting information going on in my head. I know all this stuff I just don't know how to stop myself. Maybe I'm not as motivated as I was back then because now, I just used to count my calories and I refuse to count my calories.*

Gordon: *…the media, the way they say 95% of weight loss programs saying stuff like that and they put it 95% so I guess I'm kind of going with the odds. I think I can take it off, maintaining it would be the hard part I guess. I don't know if I can maintain it. I'm hoping I can.*

Subjects in group two were asked "Why do you think you were successful at keeping the weight off during this most recent weight loss journey?" As shown by the following quotes, subjects spoke of having more determination, a change in mindset and making lifestyle changes rather than following a diet and depriving themselves. Of

fundamental importance, subjects viewed these factors as the keys to successful weight loss.

> **Sally:** *Because I had treats every now and then you know, and um, I didn't beat myself up if I didn't do exercise class three times a week, I just tried the next week to make sure I do those. I mean things happen, life happens.*

> **Barbara:** *There was never failure in this whole process. It just wasn't an option. When I go out and I do what I know I shouldn't, I'm more aware right. If I go for a week and I get on the scale and I'm up two pounds, I go okay well that's enough, now you know you shouldn't have had this and that and you didn't drink your water, so get back on it.*

> **Jack:** *Because I'm determined. Well it was different in the fact that I didn't kind of treat it as a diet. I don't think I looked upon it as a diet but as something I was doing for myself and it would strengthen my health and make me better. …if I splurged today I would very definitely not do it tomorrow.*

> **Kevin:** *I think it was a mindset that I've gotten myself into. I knew I had, I knew I needed a lifestyle change and it's something that you put off and you put off and you put off and then finally one day you wake up and say, well this is the day that I'm going to start and the first bit of success that you see became a motivator and it just went from there.*

5.3.7 Subjects' Perceptions of Successful Weight Loss

Subjects in both groups were asked "How do you define successful weight loss?" Responses included becoming healthier, feeling and looking better, having more energy, developing muscles and losing weight. These responses are similar to subjects' discussion of how they continued to remain motivated as their weight loss journey continued. Again, there were no noticeable differences in the responses received from groups one and two.

Patricia: *When my clothes that I currently have fit without being snug and that sort of tightness.*

Mary: *Self-confidence - how you feel in your skin and clothes, how you carry yourself. Feeling uplifted and energetic.*

Jack: *…when I could feel my clothing getting larger and having to replace them… being able to climb more steps easily…*

Kevin: *…I don't experience the knee pain that I was experiencing. I can walk a lot further, I can still maintain myself with playing some sports.*

5.3.8 Results Summary of Validated Questionnaires

Twenty one of the twenty two subjects completed and returned the validated questionnaire. The remaining subject, a male in group two, told the researcher he did not have time to complete the questionnaire.

Stages of Change

All subjects in group one were in the Action stage. This was expected as they had just initiated strategies and lifestyle changes to lose weight in the previous 0-2 months.

In group two, 54.5% (represents 3 females and 3 males) of subjects were in the Action stage. This is because they were still looking to lose additional weight above and beyond what they have already lost and kept off. The other 45.5% (represents 3 females and 2 males) were in the Maintenance stage, meaning they were satisfied with the weight they have already lost and kept off.

Decisional Balance

All (100.0%) subjects in group one and most (81.8%; 9/11) in group two reported that the pros of losing weight outweighed the cons at the beginning of their weight loss journey (within the first month).

In group two, 18.2% (2/11) of subjects weighted the pros to be equivalent to the cons at the beginning of their weight loss journey. No reason for this unexpected result was identified. However, it may be that group two subjects are now better able to recognize/identify the cons from that time period, having gone through a longer weight loss journey. For example, when subjects begin their weight loss journey they may not notice they are avoiding their favorite places in order to help them lose weight. Instead,

they may only notice this once they have been on their weight loss journey for many months.

Processes of Change

It was expected that subjects in group two would have developed more processes of change than those in group one as they were further in their weight loss journey and more likely to have implemented and practiced strategies for behavioral change. This expectation was founded with subjects in groups one and two identifying having developed 7/11 and 8/11 processes of change, respectively.

The most identified processes of change in group one are presented below. Their significance is illustrated by the examples provided for each; that is, the processes of change are reinforced and supported by the factors identified through unbiased and biased questioning.

- Self-liberation, where a person commits to their ability to change. For example, several subjects committed by joining weight loss programs such as Weight Watchers and LA Weight Loss (Weight Watchers International Inc., 2007 and LA Weight Loss Centers, 2007).
- Self-reevaluation, where a person evaluates their feelings about themselves with regard to the problem. For example, subjects discussed their belief in their ability to lose weight.
- Counterconditioning, where a person finds a substitute for their problem behavior. For example, many subjects reported choosing lower calorie options at buffets.

- Dramatic relief, where a person conveys their feelings towards their problem and potential solutions. For example, subjects reported feeling motivated to lose weight because of negative comments about their body size.
- Environmental reevaluation, where a person assesses how their problem affects their physical environment. For example, subjects reported having difficulty carrying out day to day tasks such as climbing stairs and moving the lawn.

As shown below, subjects in group two shared many of the processes of change as those in group one. This was expected as the two groups are simply at different stages of a similar weight loss journey.

- Self-liberation (described above).
- Self-reevaluation (described above).
- Counterconditioning (described above).
- Consciousness raising, where a person gathers more information about the problem, perhaps through observation and discussion. For example, subjects reported researching local weight loss programs prior to joining.
- Dramatic relief (described above).
- Helping relationships, where a person opens up about their problem with someone within their social support network. For example, subjects reported attending Weight Watchers (Weight Watchers International Inc., 2007) which has a support network component.

Self-Efficacy

It was expected that subjects in group one may have less confidence regarding each of the twenty statements as they were not as far along in their weight loss journey as group two subjects and, therefore, may not have had as much practice or experience dealing with some of the situations discussed. For example, some subjects may have had less experience making food based decisions at a party, such as deciding what foods and how much of them to consume in order to stay within their Weight Watchers POINTS®.

Table 5.2 illustrates the average score (out of a possible 36 points) for each self-efficacy subscale for groups one and two.

Table 5.2 Self-Efficacy Scores

Subscale	Group One	Group Two
Negative Emotions	25.2 ± 9.8	23.1 ± 16.1
Availability	20.2 ±11.8	21.2 ± 10.8
Social Pressure	29.2 ± 14.2	28.9 ± 10.9
Physical Discomfort	29.8 ± 4.8	27.8 ± 16.8
Positive Activities	30.1 ± 6.1	27.5 ± 8.5

The anticipated results were founded for only one of the five subscales. Subjects in group two had a higher average self-efficacy for the statements within the subscale of Availability (20.2 for group one; 21.2 for group two).

The remaining four subscales showed subjects in group one having a higher average self-efficacy for their statements: Negative Emotions (25.2 for group one, 23.1 for group two), Social Pressure (29.2 for group one; 28.9 for group two), Physical Discomfort (29.8 for group one, 27.8 for group two) and Positive Activities (30.1 for group one; 27.5 for group two). There was nothing discovered in the interviews to help explain this anomaly. However, these results suggest that subjects in group two are now questioning their ability to successfully cope in various food related situations. For example, looking at the subscale of Positive Activities, it may be that some group two

subjects are now tired of avoiding eating while watching TV, especially if others are consuming food at that time.

Interestingly, subjects in both groups scored the subscales of Negative Emotions and Availability the lowest. This illustrates the need for clients to be counseled on preventing negative emotions (e.g. anxiousness, depression, anger) and identifying ways to make tempting foods unavailable or finding substitute foods or actions (e.g. exercising instead of eating).

5.3.9 Discussion

In sections 5.3.1-5.3.3, the factors that lead individuals to initiate and maintain strategies and lifestyle changes to lose weight were identified through unbiased and biased questioning. Using subject's own words, the similarities and differences among the two group's responses were illustrated as they related to each of the twenty-two factors.

The purpose of this section is multi-fold:

a. To identify the questions asked in the interview and validated questionnaires which yielded the most useful results. These questions can be asked by health professionals when delivering weight management counselling to clients.
b. To identify the factors that are most important to consider when delivering weight management counselling to clients.
c. To identify the lessons learned from this research study.

Through the following discussion, the researcher will demonstrate how weight management programs can be modified to better assess the needs of clients while

improving weight loss and maintenance and health outcomes. Recommendations to health professionals will also be made, regarding adapting their approach to counselling for clients who are resisting initiating strategies and lifestyle strategies to lose weight.

a. Questions Which Yielded the Most Useful Results.

Based on study methodology, the researcher was able to identify which questions yielded the most useful results from the interview and validated questionnaires. These questions can be asked by health professionals when delivering weight management counselling to clients to gather more information and gain a better understanding of the client's motivations and ability to change. Though they can be asked in a different order, the following order worked well for the researcher:

- *Why do you want to lose weight? Why do you want to make changes to lose weight?*

These questions help identify whether the client is internally motivated to lose weight for themselves or if they are feeling pressure to lose weight from an external source. Subjects in this study indicated that internal motivation and taking responsibility for their actions were key factors in their decision to initiate and maintain strategies and lifestyle changes to lose weight.

- *How do you want to lose weight? Do you have a weight loss and maintenance plan?*

Health professionals need to ensure their client's desired weight loss and maintenance methods are realistic, safe and will result in sustainable weight loss. As discussed in section 5.2, the majority (72.7% or 16/22) of subjects in this study were losing or had lost weight by exercising regularly and eating healthy; both methods are recommended by Health Canada (Health Canada, 2007). If a health professional does not

endorse a client's chosen weight loss and maintenance plan, a discussion must be initiated and a new plan co-created.

▪ *Do you have any weight loss goals?*

Health professionals should ensure their client's weight loss goals are realistic and safe. They should discuss with their client, whether they believe they can achieve their goal(s) within a reasonable time period; if not, they need to work with their client to revise those goal(s).

▪ *Do you believe you can lose weight?*

Subjects in this study indicated believing in their ability to lose weight is/was an important factor in their weight loss journey. Health professionals should carefully listen to their clients' response and tone when they answer this question. The clients should respond with confidence and assurance. If not, reasons for their self-doubt and self-efficacy should be explored.

▪ *How will you know you have been successful at weight loss?*

Study subjects were motivated by their weight loss successes (e.g. losing a certain amount of weight or having more energy). This illustrates the importance of health professionals ensuring clients can recognize when they are successful at weight loss. If clients cannot recognize when they are successful at weight loss, a feeling of success will not be present to act as a motivator.

Subjects indicated the validated questionnaires were long and took too much time to complete. Therefore, their use in weight management counseling may be impractical, though the literature shows successful use of these questionnaires by subjects taking part in group weight loss programs (Clark, 1991).

The self-efficacy questionnaire did yield useful results by identifying food based situations that clients may have difficulty dealing with. Specifically, they may have difficulty resisting eating when they are experiencing negative emotions or have tempting foods available. This illustrates the need for clients to be counseled on preventing these emotions from escalating and identifying ways to make tempting foods unavailable such as not purchasing them or finding substitute foods or actions (e.g. developing a pastime).

b. Factors to Consider When Delivering Weight Management Counselling

Based study methodology, the researcher was able to identify the factors that are most important to consider when delivering weight management counselling to clients. The following is a rank order of factors:

- *Health Triggers* – This factor was identified most often by subjects in both groups. Subjects in this study highlighted the role their family physician or other health professional played in their decision to initiate weight loss. This illustrates the importance of all health professionals discussing the importance of achieving and maintaining a healthy weight; one should not be intimidated broaching this subject with overweight or obese clients.
- *Support Systems* – Health professionals should discuss the role a spouse, family member, friend or colleague can play in supporting their client's weight loss journey. As identified by study subjects, these persons can provide encouraging words, knowledge or healthier food options at home and work.
- *Internal Motivation* – It is essential that motivation to lose weight be internal, not external and that clients take responsibility for their actions.

- *Identifying and Managing Potential Setbacks* – Health professionals should work with clients to identify potential situations that could create a setback in their weight loss journey; brainstorming possible solutions to manage these setbacks is important.
- *Change in Priorities* – Study subjects highlighted the need to make weight loss and weight loss strategies/lifestyle changes a priority. Based on personal clinical experiences, the researcher believes that ensuring these priorities exist for clients is a critical element to successful weight loss.
- *Identified Weight Loss and Maintenance Plan* – Health professionals need to work with clients to co-create plans that will help guide them through their weight loss journey and ensure their long-term success.

c. Lessons Learned

The researcher was able to identify many lessons learned from this research study, including:

- Clients wanting to lose weight must realize that their weight loss journey will take work, there will be achievements and setbacks and they will only change if they want to change. A person has to be internally motivated to implement long-term changes and be willing to take responsibility for their actions.
- Initiating and maintaining strategies and lifestyle changes to lose weight requires positive motivators such as improved health, energy and self-image. Negative motivators will not result in long-term weight loss and maintenance.

- The weight loss journey experience can be much easier with support systems in place. Though subjects reported doing the weight loss for themselves, they valued the support of family, friends, colleagues, etc.

5.3.10 Summary

This study identified twenty-two factors that lead individuals to initiate and maintain strategies and lifestyle changes to lose weight. The factors identified through unbiased questioning (e.g. health, appearance, emotional and lifestyle triggers) were the most prominent factors as they were the ones identified initially by subjects, and tended to be the ones most emphasized throughout the interview.

The factors were identified and the differences were highlighted among groups. Group one being those who had initiated weight loss in the previous 0-2 months and group two being those who had maintained a minimum 5-10% body weight loss for 6+ months.

As discussed earlier, the researcher did not anticipate there would be many differences in the factors identified by each group, as both groups are on a similar weight loss journey, just at different times. Indeed, few differences were found between the two groups. Of the twenty-two factors, only *Internal Motivation*, *Identifying and Managing Potential Setbacks* and *Identified Pros and/or Cons of Weight Loss* revealed differences between groups one and two.

Regarding the factor of *Internal Motivation*, though subjects in both groups discussed the role internal motivation played in their decision to initiate weight loss, individuals in group two (those who had intentionally lost at least 5-10% body weight

and kept it off for the previous 6+ months) tended to speak of this factor more often, in greater detail and with added enthusiasm. This was not unexpected as subjects who have already successfully lost weight may be more likely to be internally motivated than those just beginning their weight loss journey.

Only subjects in group one identified the factor of *Identifying and Managing Potential Setbacks*. This was not surprising as these subjects had just started to initiate weight loss strategies and lifestyle changes and may have been looking at upcoming challenges and setbacks that could hamper their weight loss efforts.

Last, there was a small difference between groups regarding the factor *Identified Pros and/or Cons of Weight Loss*. Subjects in group one shared what they believed to be the pros and/or cons of weight loss while those in group two identified the pros and/or cons of weight loss they had actually experienced. This was expected as group two had already successfully achieved and maintained weight loss for 6+ months.

In contrast, the results of certain validated questionnaires were unexpected; specifically, the results of the *Decisional Balance* and *Self-Efficacy* questionnaires.

Regarding the *Decisional Balance* questionnaire, it was expected that all subjects in both groups would report that the pros of losing weight outweighed the cons at the beginning of their weight loss journey (within the first month). However, 18.2% (2/11) of group two subjects weighted the pros to be equivalent to the cons at the beginning of their weight loss journey. This may be explained by group two subjects now being better able to recognize/identify the cons from that time period, having gone through a longer weight loss journey. That said, this does not mean individuals who have already lost weight

cannot do a decisional balance of the factors involved at the beginning of their weight loss journey.

Regarding the *Self Efficacy* questionnaire, it was expected that subjects in group one may have less confidence regarding each of the twenty statements as they were not as far along in their weight loss journey as group two subjects and, therefore, may not have had as much practice or experience dealing with some of the situations discussed.

However, these anticipated results were found for only one of the five subscales. These results suggest that subjects in group two are now questioning their ability to successfully cope in various food related situations.

6.0 Conclusions and Recommendations

6.1 Conclusions

In response to the research objectives (Section 1.3), this study identified twenty-two factors that lead individuals to initiate and maintain weight loss. Of these twenty-two factors, twelve were generated from unbiased questioning, eight from biased questioning and two from a combination of both. As mentioned earlier, the factors identified through unbiased questioning were likely the most prominent factors.

This study was able to identify the differences in factors generated by two groups. Of the twenty-two factors, only *Internal Motivation*, *Identifying and Managing Potential Setbacks* and *Identified Pros and/or Cons of Weight Loss* revealed differences between groups one and two; none of the differences were unexpected.

In contrast, the results of certain validated questionnaires were unexpected; in particular the results of the *Self-Efficacy* and *Decisional Balance* questionnaires. However, the researcher was able to identify potential reasons for these unexpected results and arrive at probable conclusions. Specifically, subjects who are not as far along in their weight loss journey may have a decreased self-efficacy as they may not have as much practice or experience dealing with certain food based situations; also, subjects who have experienced a longer weight loss journey may now be better able to recognize/identify the cons (disadvantages) of their experience.

6.2 Limitations of the Research

The limitations of the research include:

- The subjects may not be representative of other Nova Scotians as they were in a higher education and socio-economic bracket than the average Nova Scotian.
- There are a limited number of subjects making it difficult to generalize the results.
- This study interviewed subjects retrospectively, about their weight loss journey. It is possible that group two of the sample may not have the memory recall to properly answer the questions, though the sampling technique helped to compensate for this. In addition, the interviewer/researcher experienced group two subjects as very forthcoming in their interview question responses; many provided lengthy responses to questions without hesitation or additional prompting.
- The researcher reviewed and coded transcribed interviews into a spreadsheet so that themes could be identified. A second person did not review the coded themes and relevant quotes to ensure they were correctly matched; therefore some subject statements may have been incorrectly interpreted and coded. The researcher tried to minimize this by thoroughly reviewing all transcripts and spreadsheet three times, each separated by at least one week to assist in developing a different perspective.
- As discussed in the Section 2.0 (Theoretical Framework), bracketing is a main feature of the descriptive phenomenological method, used in this research. Bracketing is when the researcher's preconceptions and biases are identified and withheld so they may receive and be open to the experience as it is presented to them (Kleiman, 2004). Though the interviewer/researcher received interactive training from an independent consultant with expertise in delivering qualitative interviews, it is possible that the researcher's body language or facial expressions indicated her particular beliefs.

6.3 Recommendations

6.3.1 Recommendations for Research

Based on the results and conclusions, the following areas are recommended for future research:

- Investigate the long term success of subjects within this study. Further research would determine if group one participants lost at least 5-10% of their body weight and kept it off for 6+ months and if group two participants have continued to maintain their weight loss.
- Investigate the factors group one subjects attribute to leading them to initiate and maintain strategies and lifestyle changes to lose weight when they 12 months post study. Administer the same interview and questionnaire to group one subjects 12 months from the initial investigation; this time period will allow for a safe and potentially significant (at least 5-10%) weight loss and likely a 6+ month period during which the weight has been kept off. This further study will determine if additional factors are identified once weight loss is maintained. Though very similar to this current study, it focuses on the *same* participants throughout their weight loss journey.
- Investigate health professionals' use of validated questionnaires in weight management counselling to assess clients' stage of change, processes of change, decisional balance and self-efficacy.
- Investigate the weight loss expectations of individuals currently losing weight and those who have already lost weight; investigate how these expectations impact on their continued motivation throughout their weight loss journey. Within this study,

participants from both groups often commented that their slow weight loss (usually 0-2 lbs. per week) negatively impacted their motivation at times.

6.3.2 Recommendations for Practice

This research has many implications for health professionals, including dietitians. Having a better understanding of the factors that lead individuals to initiate and maintain weight loss will allow health professionals to assess a clients' readiness to adopt strategies and lifestyle changes to lose weight.

By having an understanding of the reasons why individuals seek assistance in losing weight, health professionals can modify their weight management programs to better counsel overweight and obese individuals and help predict who will be successful at weight loss.

In addition, dietitians should seek additional education on behavior modification and other counseling techniques. As mentioned previously, with appropriate training, dietitians can successfully act as behavioral counselors, using strategies to help clients change their behaviors that contribute to obesity and help them adhere to recommendations.

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Appendix A

E-mails Sent to All Eligible Study Subjects

E-mail #1

Sent: 03 April 2007
Subject: Healthy LifeWorks

Good morning,

Have you recently started losing weight? I am doing a study as part of my masters degree. In this study I want to learn about the factors that lead people to begin weight loss. To do this, I must interview people who are now losing weight. If you have initiated weight loss strategies within the past two months, I would like to interview you.

Taking part in this study is completely voluntary. You can withdraw at any time throughout the study. Refusing to take part in this study will not affect your participation in the Healthy LifeWorks project.

Your participation is completely confidential. You would not be identified in any reports or publications created from this research.

The interview will take about 30-40 minutes. There are also four written questionnaires that would need to be completed; this will take about an extra 20 minutes. Both can be done whenever and wherever it is convenient to you.

Many thanks,
Rebecca

Rebecca J. LeBlanc, P.Dt.
Dietitian & Communications Coordinator
Atlantic Health and Wellness Institute
5991 Spring Garden Road, Suite 850
Halifax, NS, B3H 1Y6
Phone (
Fax (

E-mail #2

Sent: 28 May 2007
Subject: Healthy LifeWorks

Dear Healthy LifeWorks participant,

I am still looking to interview individuals as part of a study for my masters degree. I am looking to interview people who have:

- started weight loss strategies within the past two months

OR

- lost weight and kept it off for at least six months

Taking part in this study is completely voluntary. You can withdraw at any time throughout the study. Refusing to take part in this study will not affect your participation in the Healthy LifeWorks project. Your participation is completely confidential. You would not be identified in any reports or publications created from this research.

The interview will take about 30-40 minutes. There are also four written questionnaires that would need to be completed; this will take about an extra 20 minutes. Both can be done whenever and wherever it is convenient to you.

Many thanks,
Rebecca

Rebecca J. LeBlanc, P.Dt.
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Appendix B - Consent Form

You are invited to take part in a research study about the factors that lead people to begin and maintain weight loss. Taking part in this study is completely voluntary. You can withdraw at any time throughout the study. Refusing to take part in this study will not affect your participation in the Healthy LifeWorks project.

Purpose of the Study
The purpose of this study is to determine what factors led you to begin and/or maintain weight loss. The results of this study will be published in a Masters thesis and/or a professional journal.

Eligibility to Participate
In order to participate in this study, you must not have been diagnosed with an eating disorder by your doctor.

What is asked of you?
I ask that you let me interview you. This will take about 1-1½ hours and will be tape recorded. The interview will tell me about your experiences in beginning and maintaining weight loss. Sharing your experiences is voluntary; if you choose not to answer any question(s), we will move on to the next one. You may end the interview or ask that the tape recorder be shut off at any time. After your interview is transcribed, you will have a chance to read the written copy and add any relevant information.

Once the interview has finished you will be asked to complete four written questionnaires about your weight loss experience. They will take another ½-1 hour to complete. Again, you may choose not to answer any question(s) and may stop completing the questionnaires at any time.

I also ask that you let me use data collected from your Health Risk Assessment and Annual Check-Up, including your age, gender, height and weight.

Risks
This study is not meant to harm you in any way. You may find the interview and/or questionnaires distressing. You do not have to answer the questions you find distressing. If you experience significant distress, you will be encouraged to seek help from your employer's EAP program or family physician.

Confidentiality
You will not be identified as a study participant in any reports or publications created from this research; a pseudonym will replace your name. All information that identifies you will be kept in a secure area such as a locked file cabinet in the Atlantic Health and

Wellness Institute until the data is analyzed and published. Once the data is analyzed and published, all data will be shredded and destroyed.

You may obtain results of the final study, if you wish. If you have any further questions about this study, please feel free to contact Rebecca LeBlanc at (or Dr. Janette Taper at (902) 457-6256. If you have questions about how this study is being conducted and wish to speak with someone who is not directly involved in the study, you may contact the Chair of the University Research Ethics Board (UREB) c/o Mount Saint Vincent University Research and International Office at (902) 457-6350 or via e-mail at research@msvu.ca.

Consent

I have read and understood all of the above information and willingly give my consent to take part in this research study.

______________________________ ______________________________

Name (Please Print) Signature

____

Date

Consent to Access Health Risk Assessment (HRA)

I consent to allowing the data collected from my Health Risk Assessment and Annual Check-Up to be used for this study, including my age, gender, height and weight.

______________________________ ______________________________

Name (Please Print) Signature

____

Date

Consent to Voice Record

I consent to being voice recorded during the 1-1½ hour interview. I understand that I may end the interview or ask that the tape recorder be shut off at any time.

______________________________ ______________________________

Name (Please Print) Signature

____

Date

Appendix C

Interview Script for Participants: Group One

The following interview script was used as a guide for facilitating discussion between the interviewer (researcher) and interviewees (participants). The script was used with group one participants who had started initiating strategies and lifestyle changes to lose weight in the previous 0-2 months.

To help with analysis of the information, I would like to tape record this interview. You can ask that the recording be stopped at any time. The responses you provide will only be reported as a group.

Do you consent to participate in the interviews? ______ Yes ______ No
Do I have your permission to tape record this interview? ______ Yes ______ No

The purpose of this interview is to understand what led you to start the weight loss journey you are on now. Participation in this interview is voluntary and all information you provide will be kept confidential and your answers will not be associated with your name in any reports that are written.

Starting the Weight Loss Journey
The first questions relate to how you came to start your weight loss journey.

1. When did you start the weight loss journey you are experiencing now?

2. When you began the weight loss journey you are still experiencing now, how did you determine your were overweight?

3. What were the main factors in your decision to start your current weight loss journey?

The Experience of this Weight Loss Journey
The next question is about your weight loss journey experience.

4. What is this experience like for you; what are your thoughts, feelings or reflections on your experience?

The Success of this Weight Loss Journey
The next set of questions relate to the success of your weight loss journey.

5. Why do you think you will be successful at losing weight now?

6. Had you tried to lose weight in the past, before this journey began? How does your current weight loss journey differ from previous journeys?

7. How do you define successful weight loss?

These questions, once answered and explored, met the research objective and revealed the lived (unbiased) experiences of the participants. Afterwards, the interviewer began a discussion on the topics listed below to get a more (biased) insight into the participants' experiences.

8. Before you began your weight loss journey, did you experience any moments that triggered you to start losing weight (medical, emotional, lifestyle)?

9. As you move through your weight loss journey, do you have (<u>insert topic from list</u>)?
   • A greater awareness of your behaviors
   • Changes in your attitude(s) towards weight loss
   • Weight loss or lifestyle goals
   • A support system (partner, friends or colleagues)
   • A weight loss and maintenance plan
   • A belief in yourself
   • Changes in priorities
   • Motivations to lose weight

10. Before you began or as you move through your weight loss journey, did you ever (<u>insert topic from list</u>)?
    • Identify the pros and cons to losing weight
    • Identify and prevent tempting situations

This is the end of the formal questions. Do you have any thoughts or comments on your current weight loss journey you would like to add?

Thank you for your time and thoughtful input.

Appendix D

Interview Script for Participants: Group Two

The following interview script was used as a guide for facilitating discussion between the interviewer (researcher) and interviewees (participants). The script was used with group two participants who had intentionally lost at least 5-10% body weight and kept it off for the previous 6+ months.

To help with analysis of the information, I would like to tape record this interview. You can ask that the recording be stopped at any time. The responses you provide will only be reported as a group.

Do you consent to participate in the interviews? ______ Yes ______ No
Do I have your permission to tape record this interview? ______ Yes ______ No

The purpose of this interview is to understand what led you to start your most recent weight loss journey. Participation in this interview is voluntary and all information you provide will be kept confidential and your answers will not be associated with your name in any reports that are written.

Starting the Weight Loss Journey
The first questions relate to how you came to start your most recent weight loss journey.

1. When did you start your most recent weight loss journey?

2. When you began this most recent weight loss journey, how did you determine your were overweight?

3. What were the main factors in your decision to start your most recent weight loss journey?

The Experience of this Weight Loss Journey
The next question is about your weight loss journey experience.

4. What was this experience like for you; what were your thoughts, feelings or reflections on your experience?

The Success of this Weight Loss Journey

The next set of questions relate to the success of your weight loss journey.

5. Why do you think you were successful at losing weight during this most recent weight loss journey?

6. Why do you think you were successful at keeping the weight off during this most recent weight loss journey?

7. Had you tried to lose weight in the past, before this journey began? How was this journey different from the other times you have tried to lose weight?

8. How do you define successful weight loss?

These questions, once answered and explored, helped meet the research objective and reveal the lived (unbiased) experiences of the participants. Afterwards, the interviewer began a discussion on the topics listed below to get a more (biased) insight into the participants' experiences.

9. During your weight loss journey, did you ever have (insert topic from list)?
   - Weight loss or lifestyle goals; Did they change as you lost weight?
   - A support system (partner, friends or colleagues)
   - A weight loss and maintenance plan

10. During your weight loss journey, did you ever experience (insert topic from list)?
    - More awareness of your behaviors
    - Changes in your attitude(s) towards weight loss
    - Triggering moments (medical, emotional, lifestyle)
    - Belief in yourself
    - Changes in priorities
    - Motivations to lose weight

11. During your weight loss journey, did you ever (insert topic from list)?
    - Identify the pros and cons to losing weight
    - Identify and prevent tempting situations

This is the end of the formal questions. Do you have any thoughts or comments on your current weight loss journey you would like to add?

Thank you for your time and thoughtful input.

Appendix E: Validated Questionnaires

Stages of Change Questionnaire for Group One

Please answer the following questions by circling yes or no.

1. In the past month, have you been actively trying to lose weight?

   Yes / No

2. In the past month, have you been actively trying to keep from gaining weight?

   Yes / No

3. Are you seriously considering trying to lose weight to reach your goal in the next 6 months?

   Yes / No

4. Have you maintained your desired weight for more than 6 months?

   Yes / No

(University of Rhode Island, Weight: Stages of Change – Short Form, 2006)

Stages of Change Questionnaire for Group Two

To answer the following questions, please think back to what was happening when you began your most recent weight loss journey. Please answer the following questions by circling yes or no.

1. In the past month, have you been actively trying to lose weight?

   Yes / No

2. In the past month, have you been actively trying to keep from gaining weight?

   Yes / No

3. Are you seriously considering trying to lose weight to reach your goal in the next 6 months?

   Yes / No

4. Have you maintained your desired weight for more than 6 months?

   Yes / No

(University of Rhode Island, Weight: Stages of Change – Short Form, 2006)

Stages of Change Questionnaire Scoring

Stage	**Question 1**	**Question 2**	**Question 3**	**Question 4**
Precontemplation	No	No	No	
Contemplation	No	No	Yes	
Action	Yes	Yes		No
Maintenance	Yes	Yes		Yes

(University of Rhode Island, Weight: Stages of Change – Short Form, 2006)

Processes of Change Questionnaire for Group One

The following experiences can affect the weight of some people. Think of any similar experiences you may have in trying to lose weight or keep from gaining weight. Please rate how FREQUENTLY you use(d) each of these during the past month. There are FIVE possible responses to each of the questionnaire items. Please circle the number that best describes your experience.

1 = Never
2 = Seldom
3 = Occasionally
4 = Often
5 = Repeatedly (always)

1. I read about people who have successfully lost weight.	
2. Instead of eating I engage in some physical activity.	
3. Warnings about the health hazards of being overweight move me emotionally.	
4. I consider the belief that people who lose weight will help to improve the world.	
5. I can be open with at least one special person about my experience with overeating behavior.	
6. I leave places where people are eating a lot.	
7. I am rewarded by others when I lost weight.	
8. I tell myself I can choose to over-eat or not.	
9. My dependency on food makes me feel disappointed in myself.	
10. I am the object of discrimination because of my being overweight.	
11. I remove things from my place of work that remind me of eating.	
12. I take some type of medication to help me control my weight.	
13. I think about information from articles or ads concerning the benefits of losing weight.	
14. I find that doing other things with my hands is a good substitute for eating.	
15. Dramatic portrayals of the problems of overweight people affect me emotionally.	
16. I stop to think that overeating is taking more than my share of the world's food supply.	
17. I have someone who listens when I need to talk about my losing weight.	
18. I change personal relationships which contribute to my overeating.	
19. I expect to be rewarded by others when I don't overeat.	
20. I tell myself that I am able to lose weight if I want to.	

21. I get upset when I think about my overeating.	
22. I notice that overweight people have a hard time buying attractive clothes.	
23. I keep things around my place of work that remind me not to eat.	
24. I use diet aids to help me lose weight.	
25. I think about information from articles and advertisements on how to lose weight.	
26. When I am tempted to eat, I think about something else.	
27. I react emotionally to warnings about gaining too much weight.	
28. I consider the view that overeating can be harmful to the environment.	
29. I have someone whom I can count on when I am having problems with overeating.	
30. I relate less often to people who contribute to my overeating.	
31. I reward myself when I do not overeat.	
32. I tell myself that if I try hard enough I can keep from overeating.	
33. I realize the fact that being content with myself includes changing my overeating.	
34. I find society more supportive of thin people.	
35. I put things around my home that remind me not to overeat.	
36. I take drugs to help me control my weight.	
37. I recall information people have personally given me on how to lose weight.	
38. I do something else instead of eating when I need to relax or deal with tension.	
39. Remembering studies about illnesses caused by being overweight upsets me.	
40. I consider the idea that overeating could be harmful to world food supplies.	
41. I have someone who understands my problems with eating.	
42. I ask people not to overeat in my presence.	
43. Other people in my daily life try to make me feel good when I do not overeat.	
44. I make commitments to lose weight.	
45. I struggle to alter my view of myself as an overweight person.	
46. I notice the world's poor are asserting their rights to a greater share of the food supplies.	
47. I remove things from my home that remind me of eating.	
48. I take diet pills to help me lose weight.	

(University of Rhode Island, Weight: Processes of Change, 2006)

Processes of Change Questionnaire for Group Two

The following experiences can affect the weight of some people. Think of any similar experiences you may have had when you were trying to lose weight or keep from gaining weight. Please rate how FREQUENTLY you use(d) each of these when you were trying to lose weight. There are FIVE possible responses to each of the questionnaire items. Please circle the number that best describes your experience.

1 = Never
2 = Seldom
3 = Occasionally
4 = Often
5 = Repeatedly (always)

1. I read about people who successfully lost weight.	
2. Instead of eating I engaged in some physical activity.	
3. Warnings about the health hazards of being overweight moved me emotionally.	
4. I considered the belief that people who lose weight would help to improve the world.	
5. I was open with at least one special person about my experience with overeating behavior.	
6. I left places where people were eating a lot.	
7. I was rewarded by others when I lost weight.	
8. I told myself I could choose to over-eat or not.	
9. My dependency on food made me feel disappointed in myself.	
10. I was the object of discrimination because of my being overweight.	
11. I removed things from my place of work that reminded me of eating.	
12. I took some type of medication to help me control my weight.	
13. I thought about information from articles or ads concerning the benefits of losing weight.	
14. I found that doing other things with my hands was a good substitute for eating.	
15. Dramatic portrayals of the problems of overweight people affected me emotionally.	
16. I stopped to think that overeating was taking more than my share of the world's food supply.	
17. I had someone who listened when I need to talk about my losing weight.	
18. I changed personal relationships which contributed to my overeating.	
19. I expected to be rewarded by others when I didn't overeat.	

20. I told myself that I was able to lose weight if I wanted to.	
21. I get upset when I think about my overeating.	
22. I noticed that overweight people had a hard time buying attractive clothes.	
23. I kept things around my place of work that reminded me not to eat.	
24. I used diet aids to help me lose weight.	
25. I thought about information from articles and advertisements on how to lose weight.	
26. When I was tempted to eat, I thought about something else.	
27. I reacted emotionally to warnings about gaining too much weight.	
28. I considered the view that overeating could be harmful to the environment.	
29. I had someone whom I could count on when I was having problems with overeating.	
30. I related less often to people who contributed to my overeating.	
31. I rewarded myself when I did not overeat.	
32. I told myself that if I tried hard enough I could keep from overeating.	
33. I realized the fact that being content with myself included changing my overeating.	
34. I found society more supportive of thin people.	
35. I put things around my home that reminded me not to overeat.	
36. I took drugs to help me control my weight.	
37. I recalled information people had personally given me on how to lose weight.	
38. I did something else instead of eating when I needed to relax or deal with tension.	
39. Remembering studies about illnesses caused by being overweight upset me.	
40. I considered the idea that overeating could be harmful to world food supplies.	
41. I had someone who understood my problems with eating.	
42. I asked people not to overeat in my presence.	
43. Other people in my daily life tried to make me feel good when I did not overeat.	
44. I made commitments to lose weight.	
45. I struggled to alter my view of myself as an overweight person.	
46. I noticed the world's poor were asserting their rights to a greater share of the food supplies.	
47. I removed things from my home that reminded me of eating.	
48. I took diet pills to help me lose weight.	

(University of Rhode Island, Weight: Processes of Change, 2006)

Processes of Change Questionnaire Scoring

Subjects answered 48 questions which were each assigned to one of the following twelve Processes of Change. Each question could receive a score of 1-5. A Process of Change with two or more items each having a score of 4 or more meant the subject was often or repeatedly (always) utilizing at least half of that process.

Consciousness Raising = 1, 13, 25, 37

Counter Conditioning = 2, 14, 26, 38

Dramatic Relief = 3, 15, 27, 39

Environmental Reevaluation = 4, 16, 28, 40

Helping Relationships = 5, 17, 29, 41

Interpersonal Systems Control = 6, 18, 30, 42

Reinforcement Management = 7, 19, 31, 43

Self Liberation = 8, 20, 32, 44

Self Reevaluation = 9, 21, 33, 45

Social Liberation = 10, 22, 34, 46

Stimulus Control = 11, 23, 35, 47

Substance Use = 12, 24, 36, 48

(University of Rhode Island, Weight: Processes of Change, 2006)

Decisional Balance Questionnaire for Group One

Each statement represents a thought that might occur to a person who is deciding whether or not to lose weight. Please indicate how IMPORTANT each of these statements is to you as you try to lose weight. There are FIVE possible responses to each of the items that reflect your answer to the question "How important is this to you?" Please write the number that best describes how important each statement is to you as you try to lose weight.

1 = Not important at all **4 = Very important**
2 = Slightly important **5 = Extremely important**
3 = Moderately important

1. The exercises needed for me to lose weight would be a drudgery.	
2. I would feel more optimistic if I lost weight.	
3. I would be less productive.	
4. I would feel sexier if I lost weight.	
5. In order to lose weight I would be forced to eat less appetizing foods.	
6. My self-respect would be greater if I lost weight.	
7. My dieting could make meal planning more difficult for my family or housemates.	
8. My family would be proud of me if I lost weight.	
9. I would not be able to eat some of my favorite foods if I were trying to lose weight.	
10. I would be less self-conscious if I lost weight.	
11. Dieting would take the pleasure out of meals.	
12. Others would have more respect for me if I lost weight.	
13. I would have to cut down on some of my favorite activities if I try to lose weight.	
14. I could wear more attractive clothing if I lost weight.	
15. I would have to avoid some of my favorite places if I were trying to lose weight.	
16. My health would improve if I lost weight.	
17. Trying to lose weight could end up being expensive when everything is taken into account.	
18. I would feel more energetic if I lost weight.	
19. I would have to cut down on my favorite snacks while I was dieting.	
20. I would be able to accomplish more if I carried fewer pounds.	

(University of Rhode Island, Weight: Decisional Balance, 2006)

Decisional Balance Questionnaire for Group Two

Each statement represents a thought that might occur to a person who is deciding whether or not to lose weight. Please indicate how IMPORTANT each of these statements was to you as you began to lose weight. There are FIVE possible responses to each of the items that reflect your answer to the question "How important was this to you?" Please write the number that best describes how important each statement was to you as you began to lose weight.

1 = Not important at all **4 = Very important**
2 = Slightly important **5 = Extremely important**
3 = Moderately important

1. The exercises needed for me to lose weight would be a drudgery.	
2. I would feel more optimistic if I lost weight.	
3. I would be less productive.	
4. I would feel sexier if I lost weight.	
5. In order to lose weight I would be forced to eat less appetizing foods.	
6. My self-respect would be greater if I lost weight.	
7. My dieting could make meal planning more difficult for my family or housemates.	
8. My family would be proud of me if I lost weight.	
9. I would not be able to eat some of my favorite foods if I were trying to lose weight.	
10. I would be less self-conscious if I lost weight.	
11. Dieting would take the pleasure out of meals.	
12. Others would have more respect for me if I lost weight.	
13. I would have to cut down on some of my favorite activities if I try to lose weight.	
14. I could wear more attractive clothing if I lost weight.	
15. I would have to avoid some of my favorite places if I were trying to lose weight.	
16. My health would improve if I lost weight.	
17. Trying to lose weight could end up being expensive when everything is taken into account.	
18. I would feel more energetic if I lost weight.	
19. I would have to cut down on my favorite snacks while I was dieting.	
20. I would be able to accomplish more if I carried fewer pounds.	

(University of Rhode Island, Weight: Decisional Balance, 2006)

Decisional Balance Questionnaire Scoring

Pros = all even numbered questions

Cons = all odd numbered questions

Precontemplation: Cons outweigh the pros

Contemplation: Pros begin to outweigh the cons

Preparation: Pros continue to outweigh the cons

Action: Pros outweigh the cons

Maintenance: Pros outweigh the cons

(University of Rhode Island, Weight: Decisional Balance, 2006)

Self-Efficacy Questionnaire for Group One

Each statement represents how a person who is deciding whether or not to lose weight may feel. There are TEN possible responses to each question. Please write the number that best describes how you feel regarding each of these statements by writing a number from 0 (not at all confident) to 9 (very confident).

0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Not At All Confident									**Very Confident**

1. I can resist eating when I am depressed or down.	
2. I can resist eating when I have experienced failure.	
3. I can resist eating when I am anxious (nervous).	
4. I can resist eating when I am angry (or irritable).	
5. I can resist eating just before going to bed.	
6. I can resist eating when I am watching TV.	
7. I can resist eating when there are many different kinds of foods available.	
8. I can resist eating even when I am at a party.	
9. I can control my eating on the weekends.	
10. I can resist eating even when high-calorie foods are available.	
11. I can resist eating even when I feel it's impolite to refuse a second helping.	
12. I can resist eating even when I have a headache.	
13. I can resist eating when I am in pain.	
14. I can resist eating when I am reading.	
15. I can resist eating even when I have to say "no" to others.	
16. I can resist eating even when I think others will be upset if I don't eat.	
17. I can resist eating when I feel physically run down.	
18. I can resist eating when I am happy.	
19. I can resist eating when I feel uncomfortable.	
20. I can resist eating even when others are pressuring me to eat.	

(Dutton et al, 2004)

Self-Efficacy Questionnaire for Group Two

Each statement represents how a person who is deciding whether or not to lose weight may feel. There are TEN possible responses to each question. Please write the number that best describes how you felt regarding each of these statements when you began your most recent weight loss journey by writing a number from 0 (not at all confident) to 9 (very confident).

0 1 2 3 4 5 6 7 8 9

Not At All Confident **Very Confident**

Statement	
1. I could resist eating when I was depressed or down.	
2. I could resist eating when I had experienced failure.	
3. I could resist eating when I was anxious (nervous).	
4. I could resist eating when I was angry (or irritable).	
5. I can resist eating just before going to bed.	
6. I could resist eating when I was watching TV.	
7. I could resist eating when there were many different kinds of foods available.	
8. I could resist eating even when I was at a party.	
9. I could control my eating on the weekends.	
10. I could resist eating even when high-calorie foods were available.	
11. I could resist eating even when I felt it was impolite to refuse a second helping.	
12. I could resist eating even when I had a headache.	
13. I could resist eating when I was in pain.	
14. I could resist eating when I was reading.	
15. I could resist eating even when I had to say “no” to others.	
16. I could resist eating even when I thought others would be upset if I didn’t eat.	
17. I could resist eating when I felt physically run down.	
18. I could resist eating when I was happy.	
19. I could resist eating when I felt uncomfortable.	
20. I could resist eating even when others were pressuring me to eat.	

(Dutton et al, 2004)

Self-Efficacy Questionnaire Scoring

The Weight Efficacy Lifestyle (WEL) questionnaire was used to assess self-efficacy for groups one and two. Completion of the WEL generates five subscale scores and a global sum of the subscales. Each of the five subscales was made up of four items. The subscales included:

1. Negative Emotions
   - I could resist eating when I was depressed or down.
   - I could resist eating when I had experienced failure.
   - I could resist eating when I was anxious (nervous).
   - I could resist eating when I was angry (or irritable).

2. Availability
   - I could resist eating when there were many different kinds of foods available.
   - I could resist eating even when I was at a party.
   - I could control my eating on the weekends.
   - I could resist eating even when high-calorie foods were available.

3. Social Pressure
   - I could resist eating even when I had to say “no” to others.
   - I could resist eating even when I felt it was impolite to refuse a second helping.
   - I could resist eating even when others were pressuring me to eat.
   - I could resist eating even when I thought others would be upset if I didn’t eat.

4. Physical Discomfort
   - I could resist eating when I felt physically run down.
   - I could resist eating even when I had a headache.
   - I could resist eating when I was in pain.
   - I could resist eating when I felt uncomfortable.

5. Positive Activities
   - I could resist eating when I was watching TV.
   - I could resist eating when I was reading.
   - I can resist eating just before going to bed.
   - I could resist eating when I was happy.

Subjects indicated their confidence regarding each of these statements and could score each question from 0-9. The average score for each subscale was calculated for both groups.

(Dutton et al, 2004; Clark et al., 1991)

Appendix F

Graphical Illustration of the Research