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### Weight Maintenance: Identifying Critical Skills and Strategies for Successful Weight Loss Maintenance

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**Regis University**  
College for Professional Studies Graduate Programs  
**Final Project/Thesis**

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WEIGHT MAINTENANCE: IDENTIFYING CRITICAL SKILLS AND STRATEGIES  
FOR SUCCESSFUL WEIGHT LOSS MAINTENANCE

by

Bonnie L. Chapman

A Research Project Presented in Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts  
Language and Communication

REGIS University  
May, 2010

WEIGHT MAINTENANCE: IDENTIFYING CRITICAL SKILLS AND STRATEGIES  
FOR SUCCESSFUL WEIGHT LOSS MAINTENANCE

By

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## Abstract

The purpose of this research project was to identify and compile the critical skills, habits, and strategies that have been defined as facilitating successful weight loss maintenance. The concept and perception of the futility of maintaining lost weight is discussed, as well as the importance of changing one's mindset, habits, and lifestyle in order to be successful at long-term weight maintenance. Two key questions asked and discussed are: 1) Why do those who have lost weight experience such a difficult time maintaining that loss, and 2) is it possible to maintain weight loss for any length of time? Utilizing a workshop format, the researcher will teach and share proven skills and habits that have been successfully utilized by those who have maintained weight loss for a period of time in order to answer the research questions. In addition, strategies and ideas will be provided to help reverse the negative thought patterns associated with weight loss maintenance and provide positive motivation to help workshop participants achieve their goals of weight maintenance.

## TABLE OF CONTENTS

INTRODUCTION .....	1
Purpose of the Project .....	2
Necessity for Solutions .....	3
Lack of Definitive Research .....	3
Chapter Summary .....	5
LITERATURE REVIEW .....	6
The Perception of Futility .....	7
The Difficulty of Maintenance.....	9
Why Do We Overeat?.....	11
Weight Maintenance Strategies .....	13
Eating Habits.....	13
Self-Monitoring.....	14
Importance of Physical Activity .....	15
Catching Slips to Prevent Relapse .....	16
Support.....	17
Predictors of Weight Maintenance.....	18
Predictors of Regain.....	19
Best Practices for Prevention of Regain .....	21
Behavior is Critical .....	21
Goal Setting .....	22
Self-Monitoring.....	23
Stimulus Control .....	23
Relapse Prevention.....	25
Reframing and Cognitive Processes .....	26
Controlling Cues: Just Say “No Thank You” .....	26
Awareness .....	28
Creating Competing Behaviors.....	29
Creating New Thoughts, Replacing the Old.....	30
Support.....	31
Discussion.....	31
METHOD .....	33
Workshop Design.....	33
Procedures.....	34
Target Audience.....	35
Expected Outcome .....	35
Chapter Summary .....	36
RESULTS .....	37
The Futility of Maintenance: Perception or Reality?.....	38
Foundational Principles of Weight Maintenance.....	38
Behavior is Critical .....	39
Workshop Appraisals.....	40

Chapter Summary .....	40
DISCUSSION .....	41
Workshop Outcome .....	42
Future Projects .....	45
Limitations of Workshop .....	45
Chapter Summary .....	46
REFERENCES .....	47

## Chapter 1

### INTRODUCTION

Until the 1980s, weight maintenance did not seem to be much of a concern for the general population of the United States (Kessler, 2009). Most people may have experienced a weight fluctuation of a few pounds, but their weight remained relatively stable and any changes seemed to have been accepted as a normal part of aging. The first indication of an obesity epidemic may have begun with post-80s data collected from a significant segment of the population between 1988 and 1994 by the National Health and Nutrition Examination Survey (NHANES III) that identified a surprising and alarming trend. When comparing past weight data with that of these six years of data, Americans had seriously started to gain weight. The status of nearly twenty million more people or 8% had changed to put them into the overweight category. The data also highlighted a further disturbing trend. While almost everyone had gained weight, the heaviest Americans had gained a larger proportion of weight than others. The results of the study were published in 1996 and indicated, according to senior researcher Flegal (2002) that increases in obesity were dramatic in all race, sex, and age groups.

This initial study was one of the first to spotlight the trend toward obesity. The alarming spike in obesity in the past 20 years is further substantiated by recent statistics gathered by the Centers for Disease Control and Prevention (CDC, 2009) which emphasize that the problem of obesity continues to be a critical health concern for adults as well as children in the United States. It is especially concerning that the rate of children who are overweight also seems to be increasing as it is extremely likely that overweight children may grow up to be overweight or obese adults. The National Center for Health Statistics (2008) reports that in the United States approximately two-thirds of adults ages 20 and older are overweight or obese and close to one-



third of adults 20 and older are categorized as obese. The obesity problem is not unique to this country, as obesity has been becoming more prevalent in other countries around the world as well. The World Health Organization's (WHO, 2006) web site reports that world-wide more than one billion adults are overweight with 400 million of them classified as obese. Further projections by WHO indicate that by 2015 more than two billion adults will be overweight and more than 700 million will fit into the obese classification.

### Purpose of the Project

Why do those who have lost weight experience such a difficult time maintaining that loss? Is it possible to maintain weight loss for any length of time? Much past research paints a less-than-promising picture of successfully maintaining weight loss and in fact indicates most people quickly regain lost pounds, especially when a great deal of weight has been lost (Niemeier, Phelan, Fava, & Wing, 2007). Yet recent research is providing a much more positive outlook for the possibility of maintaining weight loss by analyzing the strategies and behaviors of successful maintainers. The purpose of this project is to examine what has shown to be effective for individuals involved in several different types of maintenance efforts. This study details and synthesizes the habits, skills, and practices that succeed when attempting to maintain weight loss. Successful strategies will be identified, combined, and utilized to help increase the success rate of those attempting to maintain a long-term weight loss. This project attempts to outline and describe many strategies backed up by research studies to assist in the identification of various elements determined to be successful for those who have maintained weight loss for significant periods of time. The findings of this study will be used to create a workshop designed to share the skills, practices, and habits that work for long-term weight-loss maintenance.

## Necessity for Solutions

Considering the sobering statistics, it is apparent that there is a need for effective weight loss as well as a further critical component to identify skills and strategies to achieve permanent maintenance of this loss (Weiss, Galuska, Kettel Khan, Gillespie, & Serdula, 2007). Despite the fact that there currently exists a multitude of weight-loss plans and programs to help address the epidemic of obesity that has occurred since the late 1980s, Americans are not getting thinner. According to Marketdata Enterprises, Inc. (2007) the weight loss industry in the United States is currently estimated at \$55 billion dollars yearly and many people are initially successful in losing a substantial amount of weight; however, when faced with the prospect of maintaining that hard-earned weight loss, most individuals are not successful in the long-term. Even when considering the life-threatening health risks associated with obesity including cardiovascular disease, diabetes, and some types of cancers, and lesser health-related problems such as osteoarthritis and respiratory difficulties, a large percent of those who have lost weight have a difficult time maintaining the loss, and many eventually regain the lost weight (Wing, Tate, Gorin, Raynor, & Fava, 2006). It is of the utmost importance and necessity to teach those who have lost weight how to maintain this achievement.

## Lack of Definitive Research

Even though there are a great deal of available statistics on weight-loss programs and plans and how people achieve success as a result of these efforts, it has been noted that there is a lack of definitive research on those who have been successful at maintaining their weight loss beyond two years and specific concrete solutions for having done so (Craig, 2007; Svetkey et al., 2008). Thus it would prove beneficial to identify and study the strategies and habits of successful maintainers in order to share and teach them to others attempting to maintain a weight

loss. In 1994, Wing and Hill founded the National Weight Control Registry (NWCR) and have since conducted extensive studies to assist in understanding what constitutes success. The criteria used by the NWCR (n.d.) for successful weight maintenance was that “participants must be at least 18 years of age, have intentionally lost at least 30 pounds, and kept it off for at least one year.” Past and current studies identify various hypothesized strategies and methods which have resulted in successful weight-loss maintenance, but overall the subject remains a phenomenon which is not only of great interest to researchers but also remains somewhat of a mystery. Many members of the NWCR report three key strategies for success: eating habits encompassing a low calorie and low-fat intake, self-monitoring of eating and other components, and exercise (Wing & Phelan, 2005). There are also identifiable behaviors and psychological factors corresponding with these strategies including increased physical activity, higher levels of dietary restraint, and lower levels of disinhibition or difficulty controlling overeating. It seems there is no one standard method or proven strategy that will consistently work for a large majority of weight maintainers.

In fact, within one year after weight loss, approximately 30-50% of people gain about one third of the lost weight, and in three to five years many have returned to their baseline weight (Rieger, Dean, Steinbeck, Caterson, & Manson, 2009). The unanswered question then becomes why is it so difficult for those who have lost weight to maintain that loss for any length of time? There have been a number of factors attributed to this problem, some of which have been identified as physiological changes or metabolic rate decreases, an increase in the hunger-stimulating hormone ghrelin as a result of weight loss, a decrease in motivation, the psychological effect of sticking with an altered long-term eating plan, or a combination of several of these (Thomas & Wing, 2009).

## Chapter Summary

The maintenance of weight loss especially long-term is a major problem in the area of weight control. There is a definite need to identify and compile the skills, strategies and components which have been shown from research to assist in helping people achieve success in maintaining their weight loss and ultimately controlling their weight for the long term. It is important to teach people skills that will work for them individually to enable them to keep the weight off and enjoy improved health and quality of life.

## Chapter 2

### LITERATURE REVIEW

Most experts in the field of weight loss agree that weight maintenance may be as important as losing the weight and that maintaining the weight might be a greater challenge than initially losing the weight (Elfhag & Rossner, 2005). The prospect of maintaining lost pounds could be daunting and may require different or additional motivation and discipline. Almost two-thirds of the adults in the United States are overweight or obese, a statistic that translates those factors as being the second leading cause of preventable death due to risk factors associated with cardiovascular disease including hypertension and type II diabetes (Svetkey et al., 2008). In spite of the warnings and dangers of obesity, Americans are getting heavier every year and the cost of obesity continues to rise. According to a recently released survey by the CDC (2009) the yearly health care cost of obesity has reached \$147 billion in the United States. The high cost of obesity and the related health risks emphasize the need for effective programs, tools, and skills to teach those who have lost weight how to maintain that loss.

The standard for screening for weight problems is the Body Mass Index (BMI). The BMI is calculated using a person's height and weight. Weight in pounds is divided by height in inches squared and multiplied by a conversion factor of 703 (CDC, n.d.). The calculation does not measure body fat directly but can be used as a reliable indicator to assess if further tests need to be performed. To illustrate, the following table provided by the National Heart Lung and Blood Institute (NHLBI, 2000) shows the various ranges of weight based upon BMI:

<b><u>BMI</u></b>	<b><u>WEIGHT STATUS</u></b>
Below 18.5	Underweight
18.5 – 24.9	Normal
25.0 – 29.9	Overweight
30.0 and above	Obese

Those who lose weight enjoy the benefits of improved health and decreased risks of disease. Guidelines established by the NHLBI (2000) indicate that a 10 percent reduction in baseline weight can help achieve marked improvements in clinical measures of health. The health benefits only are realized as long as the lost weight is maintained. The Obesity Society (2007) outlines the need for businesses to develop and implement wellness programs to help promote a healthy lifestyle and weight management. This could serve a twofold purpose of having a healthier and more productive workforce as well as decreasing healthcare related costs for employers. An increasing body of research indicates there is a critical need to identify practical as well as affordable intervention strategies that teach the skills and behaviors necessary to maintain weight loss in order to continue health benefits (Svetky et al., 2008).

#### The Perception of Futility

There is a general perception that few who lose weight succeed in long-term maintenance of the loss. This belief initially may have been promulgated as long ago as 1959 by Stunkard and McClaren-Hume's study of 100 obese individuals who had lost weight. The findings reported that two years after weight loss, a mere 2% maintained a loss of 20 pounds or more. Further perpetuating the historical perception, a 1989 study by Kramer et al. which compared weight loss programs reported that all programs resulted in "a nearly invariant pattern of weight regain" (p. 519). Given the pessimistic view of weight loss maintenance, it is perhaps understandable that many believe it is an accomplishment that is unachievable for most people. Yet recent research has provided a more positive outlook for weight loss maintenance. According to co-investigator H. Wyatt of the NWCR, "In reality, research has shown that 20-30% of individuals are successful at losing at least 10% of initial body weight and maintaining the loss for at minimum one year (personal communication, October 15, 2009)."

The negative attitudes and perceptions indicate an important need for maintenance programs that are designed for those who have lost any amount of weight in order to teach skills and strategies specific to maintaining the weight loss. One research study devised a weight-loss maintenance program to test the differences in effectiveness between a face-to-face group and an Internet-based group. The program was based on teaching skills of self-regulation theory and reported improved weight loss maintenance based on daily weighing and face-to-face contact (Wing et al., 2006). This study determined that self-regulation and the concept of self-monitoring played a critical part in weight maintenance. Leventhal, Meyer, and Gutmann (1980) identified the self-regulation model as:

The individual functions as a feedback system. He or she establishes behavioral goals, generates plans and responses to reach these goals, and establishes criteria for monitoring the effects of his/her responses on movement toward or away from the goal. This information is then used to alter coping techniques, set new criteria for evaluating response outputs and revise goals. (p. 34)

Wing et al. (2008) examined the predictors of weight regain to garner a better understanding of the factors contributing to regain. This study identified key predictors as larger weight losses, increased depression, a shorter time period of weight maintenance, higher levels of disinhibition or uncontrolled eating, and changes in physical activity and self-weighing. It was concluded that psychological factors may be strongly linked with weight regain and by utilizing behavioral techniques that teach the skills of controlled eating and learning to think of maintenance as a positive lifestyle change, improvements in weight maintenance can be realized. Incorporating the skills of increased exercise and self-weighing also resulted in improved weight loss maintenance.

This research suggests that utilizing self-regulation theory components of frequent self-weighing and self-monitoring techniques, and combining them with other behavioral habits of increased physical activity and eating restraint may help alter the perception of the futility of weight maintenance.

### The Difficulty of Maintenance

Why is maintenance so difficult? There are many factors that must be considered to attempt to answer this question. Physiological changes, which may encompass decreases in metabolism and an increase in the hunger-stimulating hormone ghrelin, can constitute a challenge. Environmental changes as well as a combination of many of these issues may also provide roadblocks to maintenance (Craig, 2007). In addition, there are numerous psychological and behavioral changes related to regaining lost weight. Individuals on restrictive diets may become bored and succumb to social and environmental cues to eat more and exercise less. These challenges do not have to translate into a hopeless weight regain as confirmed by H. Wyatt, “This group of successful long-term NWCR weight-loss maintainers provides hope and evidence that long-term weight loss maintenance is achievable with appropriate behavioral change strategies (personal communication, October 15, 2009).”

In a 2008 study conducted of Weight Watchers lifetime members, it was found that as high as “79.8% of members had maintained at least a 5% weight loss for one year and 50% of members had successfully maintained the loss for five years” (Lowe, Kral, & Miller-Kovach, p. 925). This research was important as it provided more optimistic data than had been previously indicated and highlighted a startling finding that reported the maintenance of lifetime members had considerably improved compared with past findings of long-term weight-loss maintenance in Weight Watchers lifetime members. Belfort et al. (2008) confirmed the optimism of successful



weight maintenance in a study which found that “the majority of participants are able to maintain 5% or more weight loss for a year or longer and suggest that traditional approaches to weight control based on individual behavior change may be more clinically effective than previously believed” (p. 525). Such studies provide optimistic data that success in weight maintenance is achievable, given the proper tools and skills.

A further consideration is that post-weight loss, dieters’ motivation may decrease and the psychological efforts or costs of sticking with a regimen to maintain weight may not be perceived to outweigh weight loss benefits (Thomas & Wing, 2009). Once maintenance begins, reinforcements initially used to lose weight may stop providing motivation and new and different motivational strategies may be required. It is possible that identifying and revising alternative motivational strategies may be an important factor to explore, as motivation and behavioral changes could constitute an important component of successful weight maintenance (Rieger et al., 2009). This would suggest the necessity of synthesizing and teaching behavioral skills and tools to help increase the chance of successful weight-loss maintenance.

It is generally recognized that one of the greatest challenges of weight maintenance is how to succeed in what is considered to be a toxic and obesogenic environment (Weiss et al., 2007). The ubiquitous marketing of food as a means of satisfying one’s every need and desire is a reality in today’s American culture. The toxic and obesogenic environment may be described as a profusion of inexpensive processed and fast food choices, increased portion sizes, pervasive media messages that communicate eating is equated with happiness, and lifestyles that encourage excess eating and decreased physical activity (Carels et al., 2008). Other factors contributing to the environment are those that discourage physical activity and promote a sedentary lifestyle. Goldberg and King (2007) identified factors that promote this increasingly inactive lifestyle

including viewing more television, increased use of the computer and internet, the use of more products promoted as labor-saving, and more occupations which are non-physical. It is essential to decrease these sedentary activities in order to help promote a healthy lifestyle and succeed in weight management. It is this researcher's belief that as long as the environment and barriers persist, individuals must take responsibility for creating and modifying their personal environment and equip themselves with the tools, knowledge and skills to enable them to maintain the lost weight.

### Why Do We Overeat?

Kessler (2009) argued that the primary reason for obesity is neither a lack of physical activity nor a metabolic defect but instead is directly related to overeating. He posited that most of the food readily available and promoted is purposely designed and created to encourage overeating. Calling such foods highly palatable, he explains:

When scientists say a food is palatable, they are referring primarily to its capacity to stimulate the appetite and prompt us to eat more. Palatability does involve taste, of course, but, crucially, it also involves the motivation to pursue that taste.

It is the reason that we want more. (p. 12)

Kessler's research found that food manufacturers identify properties that make food irresistible and create a product with the ingredients that are deemed to provide the precise aroma, texture, and consistency that theoretically will prove to stimulate the appetite and increase the desire to eat more. Wansink and Sobol (2007) confirm the overeating theory and have stated that many food choices are "automatic food choices where we unconsciously eat without considering what or how much food we select and consume" (p. 119). Given this

information, it may be even more important to implement the knowledge and skills of weight maintenance to help prevent weight regain.

Thomas and Wing (2009) identified two approaches that have been used to help understand the behavioral factors contributing to maintenance and regain of weight loss. The first approach was to study the individuals who have succeeded at long-term maintenance such as NWCR members. The second was identified as performing studies using specific criteria with the goal of improving weight loss and maintenance for the long term in order to continue the ultimate benefits. The benefits may be important to keep in mind and used as motivators to help achieve an improved quality of life, increased energy and mobility, a more positive mood and decrease in depression, and the physiological benefits of decreases in hypertension, type II diabetes, heart disease, and cancer (Svetky et al., 2008).

Data collected from members of the NWCR have often been used by various researchers to identify the strategies that are considered to be an integral part of successful weight maintenance, as the members have reported success at maintaining a substantial weight loss for a minimum of one year (Niemeier et al., 2007). Even though much of the research on weight maintenance refers to data collected by the NWCR, it is important to note that the NWCR has been criticized for their findings. Ikeda et al. (2005) argued that the self-reporting method of weight maintenance by NWCR members allowed a great variance of reliability and pointed out that there was an under-representation of minorities and men in the registry, since approximately “80% of enrollees are female and 96% are white” (p. 204). The study concluded that data provided by the NWCR support pessimism in relation to success of permanent weight loss for most people who are overweight and obese and concur that the few who achieve permanent success are exceptions. Whether or not the NWCR is the standard in weight loss maintenance,

the strategies, skills, and knowledge regarding behavior and other factors required to maintain weight loss as outlined in studies conducted by the registry can be used as valuable tools to help develop programs to successfully maintain weight loss.

### Weight Maintenance Strategies

There are three generally accepted strategies of successful weight loss maintenance as identified by the National Weight Control Registry (Wing & Phelan, 2005). The strategies are eating habits, self-monitoring, and physical activity. The researchers also theorized that there was a fourth component that might be added which was catching small slips in weight maintenance practices before they turn into larger regains. The strategies are mirrored by the Weight Watchers program which posits the four pillars of successful weight loss and maintenance as food, exercise, behavior, and a support system (“The Four Pillars of a Science Based Approach,” n.d.). The four strategies or pillars could be compared to the legs of a chair, and balance may be achieved when all four legs or habits are present.

### *Eating Habits*

Those successful at maintaining weight loss typically exhibit the following habits including eating a low-calorie, low-fat diet; eating regularly including breakfast; rarely eating fast food; seldom splurging on high-calorie food; avoiding situations or environments that may encourage overeating (Butryn, Thomas, & Lowe, 2009); and maintaining a consistent eating pattern throughout the week and typically not splurging on weekends and holidays (Phelan et al., 2008). These habits are continually cited as critical components of weight maintenance and would seem to be a foundation upon which to build and maintain a healthy lifestyle. Greene et al. (2006) found that successful weight maintenance directly correlated with eating less calories or a lower energy intake, choosing lower fat foods, and eating smaller portions. Other studies

have focused on specific types of diets and compared them in an effort to determine which foods correlated with maintaining lost weight. In a 2009 study by Dale et al. two types of diets were identified as being equally successful contributors to long-term weight maintenance. In different proportions, both diets included foods containing complex carbohydrates, fruits and vegetables, low-fat dairy and lean protein foods, monounsaturated fats from nuts and olive oil, and foods high in fiber which are considered to be filling foods. Filling foods are described by Weight Watchers (Fink, n.d.) as those having a lot of volume, little calories, contributing to a feeling of satiety, and members are encouraged to eat filling foods in addition to lean protein, low-fat dairy and complex carbohydrates to help prevent hunger. Keeping hunger at bay and maintaining a feeling of satisfaction are tools that may be successfully used to help maintain weight loss.

#### *Self-Monitoring*

The second habit was identified as self-monitoring. More than 75% of members of the NWCR typically weigh themselves more than once per week. Members have scored highly on the Cognitive Restraint subscale of the Eating Inventory which is defined as the amount of effort expended on eating behaviors and controlling one's weight (Thomas & Wing, 2009). This would seem to indicate that those who direct a substantial amount of time and effort practicing weight maintenance skills and behaviors achieve a higher degree of success. Frequency of self-weighing was determined to be a strong predictor of weight maintenance to help prevent regain, as reported in a recent study of behavioral and psychological factors (Wing et al., 2008). Even though there is a substantial body of research validating frequency of self-weighing as a component to successful weight maintenance, some have argued that frequent weighing may contribute to negative behavioral aspects such as eating disorders. Wing et al. (2006) reported that the evidence hypothesizing the link between weighing frequency and disordered eating is

weak and concluded that their research not only found insufficient evidence to substantiate the claim but also no negative consequences from their trial.

Additional skills that comprise self-monitoring include taking immediate action if weight regain occurs and using one's weight to determine if and when caloric changes may be necessary. Confirming the importance of self-monitoring, a study by Butryn, Phelan, Hill, and Wing (2007) concluded that theories of self-regulation deem self-monitoring to be a critical component of behavioral self-regulation, thereby helping facilitate successful weight maintenance. This study theorized that positive reinforcement may be a result of frequent self-weighing when correlated with behavior changes. However, Wing et al. (2006) maintained that "frequent self-weighing could be either a cause or a consequence of weight-loss maintenance" (p. 1570). Most research seems to indicate, though, that those individuals who learned and implemented various self-monitoring practices increased the likelihood of successfully maintaining their weight.

#### *Importance of Physical Activity*

High levels of physical activity have been identified as a third component of successful weight management strategies. NWCR members reported that on average they participated in about one hour of moderate intensity physical activity such as brisk walking per day (n.d). This suggests that those who consistently exercise experience greater success in maintaining weight loss. In a study designed to analyze behaviors and barriers to maintaining lost weight, Befort et al. (2008) found that of the many behaviors associated with successful weight loss maintenance, regular physical activity was the most important. Another correlate reported by successful losers in the NWCR included a decrease in television viewing. The average member only watched about six to ten hours per week as compared to the average American's viewing of 28 hours per

week (n.d.). Drawing upon this information, Raynor, Phelan, Hill, and Wing (2006) performed a study with NWCR members to determine if increased television viewing resulted in or could predict weight regain. This study provided compelling data that successful weight loss maintenance correlated with minimal television viewing.

Elfhag and Rossner (2005) confirm the importance of physical activity in weight maintenance, citing that such maintenance can be achieved by direct energy expenditure of exercise. Their research posited that physical activity can facilitate a sense of improved well-being which may in turn lead to other positive behaviors associated with weight maintenance. The link between exercise and improved psychological factors such as a more positive mood and a decrease in depression and anxiety was emphasized by Goldberg and King (2007). It is commonly accepted that there are many benefits of physical activity which may include a boost in self-esteem and an overall improvement in health-related attitudes. A recent study by Dale et al. (2009) found that participants in two groups with different types of counseling and support reported their physical activity levels did not change during the study, thus not accounting for weight maintenance. However, most research strongly indicates that by combining the strategies of increased physical activity with positive and healthy eating habits and frequent self-monitoring, those who have lost weight have a greater chance of successfully maintaining that weight loss.

#### *Catching Slips to Prevent Relapse*

An additional or fourth category for success may be catching slips before they turn into larger regains (Kirschenbaum, 2005; Wing & Phelan, 2005). One study found that very few who had lost weight and had experienced even small gains of two to five pounds were able to recover from their relapse. The findings of this study concluded that one of the crucial predictors of

weight maintenance was to utilize self-monitoring to help monitor any weight regain before the regain became uncontrollable, and according to Wing and Phelan (2005), “Preventing small regains from turning into larger relapses appears critical to recovery among successful weight losers” (p. 224). Thus, it would suggest that immediately catching a small gain and incorporating the skills and strategies utilized by successful maintainers can be effective in preventing a small gain from becoming a larger issue. Those who are proactive in applying the principles of successful weight maintenance have more successfully prevented weight regain.

### *Support*

An additional factor to consider as to why weight loss maintenance may be so difficult is that the reinforcement or encouragement received during weight loss may not be present during maintenance. As part of the Weight Watchers program, support is considered to be one of the four major components for success (“The Four Pillars of a Science-Based Approach,” n.d.). The program provides support in the form of weekly meetings, an internet site with community message boards, and brochures specifically outlining maintenance skills and strategies. Other studies have emphasized the importance of the role that support played in weight loss and maintenance (Thomas, Hyde, Karunaratne, Kausman, & Komesaroff, 2008). The researchers found that participants reported more hope and feelings of social acceptance when they were involved in social networks that supported their efforts at losing and maintaining weight. Wing et al. (2006) found the best outcomes and improved maintenance were a result of face-to-face support and reinforcement as well as practicing self-monitoring skills and frequent self-weighing. It would seem that the continued support of peers, friends, and family is of utmost importance in continuing to practice the habits and behaviors that promote weight maintenance. Ulen, Huizinga, Beech, and Elasy (2008) looked at the factors contributing to the prevention of



weight regain and confirmed that seeking support was an important behavior in maintaining weight loss. As can be seen from these examples, the research further validates the importance of identifying the critical skills and strategies used by successful weight loss maintainers and synthesizing them to help promote continued maintenance of lost weight.

### Predictors of Weight Maintenance

Those who have successfully maintained their weight loss practice some common behaviors and strategies. Craig (2007) concluded, “Lifestyle modification, diet, exercise, and behavior therapy, are the cornerstone of obesity treatment and weight-management success. These changes need to be sustained for weight loss to remain permanent” (p. 187). It is important to emphasize and understand that these changes are incorporated over one’s lifetime and are not a quick or temporary fix. Criteria for successful maintenance reported by individuals in various studies include a high level of dietary consistency throughout the week, less fast food consumption, less time spent in front of the television and more time participating in physical activity, the amount of time the weight loss is maintained, and behavioral techniques which assist in dealing with depression and helping to control one’s eating in order to prevent disinhibited eating (Butryn et al., 2009; Phelan et al., 2008). The changes in habits and behaviors would seem to form a foundation upon which maintaining weight loss can be sustained. Another study reported that those who ate a consistent diet all week were one-and-a-half times more likely to keep their weight range within five pounds as compared to the previous year than those who did not eat consistently throughout the week (Wing & Phelan, 2005). Consistency in eating habits would seem to play an important part in behavior and attitudes toward food and may help provide maintainers with a stable environment to assist in preventing disinhibited eating.

Befort et al. (2008) reported, “Consistent with the literature, time since treatment was a significant predictor of successful weight loss maintenance” (p. 524). It may be that when weight loss is maintained for a longer period of time and other skills and habits of successful maintenance repeatedly are practiced, the loss might become less difficult to maintain. According to Wing et al. (2008), increased self-weighing and physical activity combined with behavior strategies focusing on effective hunger control, depression, and uncontrolled eating all helped improve weight loss maintenance.

Many researchers concur that behavior techniques, which will be discussed in greater detail in a later section, are one of the most critical components of successful maintenance. For example, Thomas and Wing (2009) reported that successful maintainers spend “a substantial amount of time and energy to behaviors at weight control” (p. 56). Another study looked at how numerous behavior factors affected the probability of weight maintenance. Butryn et al. (2009) concluded that incorporating specific behavior changes including overcoming objections to exercise, stimulus control, restructuring the eating environment, and learning to deal with other challenges such as food cravings predicted increased success in weight maintenance. Together these studies provide compelling data that successful weight maintenance can be achieved but may require considerable effort and different behavioral changes and techniques, especially in the beginning of maintenance when weight regain is most likely to happen.

#### Predictors of Regain

Wing et al. (2008) observed that there have been few studies conducted to examine what factors might predict weight regain after significant losses. However, the research that has been done has identified specific criteria as potential predictors of regain. A 2005 study by Wing and Phelan reported, “The single best predictor of risk of regain was how long participants had

successfully maintained their weight” (p. 224S). Various studies have identified a number of key components of risk of regain. These include a larger percent of weight loss; a shorter time of maintaining lost weight; psychological variables as defined by increased disinhibition, depression, hunger, and decreased dietary restraint; and behavioral changes as defined by decreased physical activity, self-weighing, and an increase in time spent viewing television (Butryn et al., 2007). This would suggest the importance of an awareness of these factors, the ability to identify the patterns and habits, and a willingness to incorporate skills and strategies used by successful maintainers to help develop a personal weight maintenance program.

Weiss et al. (2007) confirmed the regain predictors and identified additional ones including Mexican American and African American ethnicity and increased attempts to control weight. The rate of regain in other ethnic groups may be attributed to cultural or other factors and would seem to merit further research to attempt to identify what factors contribute to the regain predictors. Even though this research reported results consistent with the NWCR data confirming that those who had lost a greater percentage of weight were at higher risk to regain, it was pointed out the previous research included clinical weight-loss studies and studies of the NWCR, all of whom have achieved some measure of success in weight maintenance and may not accurately represent the general population. The preponderance of research suggests that that the most important challenges of maintaining weight loss may be to identify the skills and strategies necessary for success and develop an understanding and awareness of the factors contributing to maintenance in order to effectively apply and incorporate the best practices into a maintainer’s lifestyle.

### *Best Practices for Prevention of Regain*

Best practices may be defined as strategies, techniques, activities, or methods that are generally accepted to deliver a desirable or specific outcome to help facilitate effective methods of performance (Florida Department of Education, 2009). In order to identify and compile what could be considered best practices to help prevent weight regain, Ulen et al. (2008) outlined several components that mirror other studies' conclusions. Frequent self-weighing, a consistent eating program limiting calories and fat and including a variety of foods, regular physical activity, and learning ways to cope directly with challenges and setbacks as opposed to avoiding or ignoring them are all considered practices that can contribute to successful maintenance. An additional practice identified as helping to prevent weight regain was advising those who are attempting maintenance that relapse or regain may very likely occur. Weight Watchers' leader M. Malek emphasizes the importance of asking for help and support if and when relapse or regain does happen (personal communication, October 14, 2009). Many if not most of those who have lost weight experience relapse and an all-too-common attitude is to view this as a hopeless setback. Instead, it might be important to consider relapse as another challenge that can be overcome with the proper tools, skills, and attitude. Weiss et al. (2007) concluded, "An improved understanding of the factors associated with weight regain could lead to both the identification of those at highest risk for weight regain and the development and testing of more effective interventions to aid in long-term weight-loss maintenance" (p. 35).

### *Behavior is Critical*

Much of the research conducted has focused on the role behavior plays in weight loss maintenance. Befort et al. (2008) looked at a group who had lost weight by participating in a university study and compared different behavioral strategies between those who maintained and

those who gained. The researchers theorized that the study could more accurately identify successful strategies because participants both maintained and gained back weight, as opposed to the NWCR which only reported on those who have been successful at maintaining. The strategies identified as contributing to successful maintenance were many of the criteria reported by other research including goal setting, self-monitoring, learning problem-solving and stimulus control skills relating to eating triggers, and training in relapse prevention and how to reframe negative thoughts into positive ones by applying cognitive processes (p. 520). Another study by Carels et al. (2008) confirmed the importance of applying behavioral principles such as changing eating and exercise environments and emphasized creating new environments which promoted healthy behaviors and decreased the cues for unhealthy behaviors.

### *Goal Setting*

Setting goals could be identified as one of the behavioral cornerstones of weight loss and is also a vital part of achieving success in maintaining the weight loss. Goal setting has been identified as an important element in the Social Cognitive Theory (Bandura, 1985) that posits behavior can be explained and predicted by using the ideas of incentives and expectations of outcome as well as efficacy. The theory contends that behavior can be changed and maintained by focusing on the anticipated outcome of a behavior or action and belief in one's ability to perform the behavior. Thus, goal setting and attaining those goals can provide a powerful impetus for identifying and maintaining specific behavioral changes related to weight maintenance. For goals to be successful, it is suggested that they are specific, positive, measurable, realistic, and have a time limit (Simmons & Griffiths, 2009). However, it may be that the goals one had set for losing weight may need to be re-evaluated and revised in attempting to maintain weight. For example, an initial goal for weight loss might have been to

fit into a size 10 from a size 18. Once that goal was achieved a new goal would need to be identified in order to continue the motivation to maintain weight loss. An important reminder might be an awareness that the once the weight loss goal has been achieved, it is not the end of the process. Weight maintenance is a lifelong commitment and it is possible that those who understand this can better achieve their maintenance goals.

### *Self-Monitoring*

Even though self-monitoring previously was discussed in the literature review, it deserves another mention because of its critical role. Self-monitoring parallels the guidelines set out by the National Heart, Lung, and Blood Institute (NHLBI) which state that “regular self-monitoring of weight is critical for long-term maintenance” (n.d.).

Approximately 44% of successful NWCR maintainers report weighing once per day and 31% do so once per week (Butryn et al., 2007). Frequent self-weighing may provide a chance to catch any lapses and make corrections before they become a larger problem and in addition create an important foundation upon which to make any other adjustments in eating patterns or physical activity. One study demonstrated that frequent weighing as a component of self-regulation could not only improve maintenance of weight loss but also reduce the amount of weight gained (Wing et al., 2008). Other self-monitoring behavioral practices that successful maintainers have identified are keeping track of food intake and physical activity. Weight Watchers (n.d.) reported that members considered tracking both food and exercise as vital to maintaining weight loss.

### *Stimulus Control*

Kessler (2009) explains that food can elicit cues that become a stimulus creating a response to overeat and suggests that “Despite the challenges, we do have opportunities to break

the cue-urge-reward-habit cycle” (p. 181). Constant exposure to food as well as external cues and eating foods considered highly palatable can change our brains and set up a conditioned response to continually seek stimulation. Boggiano, Dorsey, Thomas, and Murdaugh (2009) hypothesized that external context cues could create an environment that encourages overeating. The researchers defined context cues as external objects or stimuli specific to an environment which are distinctly different from another location. This research centered on rats that had been exposed to a different environment or cage where they were fed Oreo cookies, a highly palatable food. After several trips to the Oreo cage the animals were returned to their regular cages where context cues from the Oreo-cage environment were placed, and it was observed that the rats ate much more of their normal food. The external cue hypothesis was confirmed as the rats associated the context cues from the Oreo cage and overate their normal chow even when they were not hungry.

It is undeniable that food can provide a quick feel-good response. One can be in the throes of a strong emotion such as anxiety, sadness, or anger, and eat a cookie that tastes delicious. Eating the cookie could cause a positive reaction and an immediate reward is perceived by the brain because the pleasure centers of the brain have been activated (Kessler, 2009). The next time one sees a cookie, the positive memory is associated with eating the cookie and the desire to eat more cookies manifests. The action then becomes automatic and can result in a habit.

The Vermont Center for Cognitive Behavior, founded in 2005 to provide treatment for various psychological problems, specializes in programs in cognitive behavior therapy and teaches patients the tools and skills to recognize problematic thought patterns and how to change the destructive patterns. Co-founder E. Ramirez explains conditioned responses such as the

cookie association as something that can become automatic because it is practiced again and again and is associated with an instantaneous gratification (personal communication, October 28, 2009). This may explain why so-called comfort food increases experiences of pleasure. The urge for comfort is especially strong when associated with strong emotions. It is important to recognize the stimulus that food can provide and learn skills to plan ahead and help resist the temptation of overeating, a consequence of which could result in gaining back all the lost weight.

### *Relapse Prevention*

Relapse prevention “is a tertiary intervention strategy for reducing the likelihood and severity of relapse following the cessation or reduction of problematic behavior” (Hendershot, Marlatt, & George, 2009, p. 127). Training in relapse prevention provides and teaches coping skills and alternative behaviors and thoughts to help limit the possibility and severity of relapse. An example of effectively utilizing coping skills would be when a lapse in dietary restraint or physical activity is experienced, one could immediately incorporate the skills and tools learned and utilize them in order to start over again and not focus on slip-ups. An important part of a coping skill would be the ability and determination not to view the slip-up as a failure but instead to positively view it as an opportunity to learn how to deal with challenges.

Weight Watchers may be used as an example of a program that provides tools and techniques for planning and coping with relapses. During meetings, the leader discusses the reality that relapses and weight regains are common and emphasizes that if they occur it is important to have the tools, knowledge, skills, and support to navigate the relapses (J. Streeter, personal communication, October 30, 2009). The theory is that when armed with knowledge and alternative plans, relapses may be addressed when they occur. If relapses are not addressed immediately, there is the very real probability that weight regain will continue. Weiss et al.



(2007) concur, “Over time, the acquisition of critical behaviors or skills may protect against relapse” (p. 38).

### *Reframing and Cognitive Processes*

New behaviors and habits can be learned and practiced through cognitive theories of learning. It is important to constantly practice these new behaviors to help replace the old, destructive ones that have been deeply imbedded in our brains. Befort et al. (2008) reported,

As new behaviors are acquired and repeatedly practiced, over time they require less conscious effort, however it may take several years before the multiple behavior changes associated with weight loss become habitual or are less susceptible to competing reward contingencies associated with high-fat foods and sedentary behavior. (pp. 524-525)

Even though it may take a great deal of repetition and time for the new behaviors to become an integral part of our lives, it is realistic to believe they can become a component of a healthy lifestyle change and assist with weight maintenance.

### *Controlling Cues: Just Say “No Thank You”*

Kessler (2009) identified four critical components of helping control the powerful cues that food can exert and to creating a habitual response to overeating. Those components are awareness, creating and practicing new or competing behaviors, creating new thoughts to replace negative thoughts, and equipping oneself with a support system. These concepts reiterate what other research has identified, namely behavioral changes can help with stimulus control and problem-solving.

The Transtheoretical Model (TTM) of behavior change “is an integrative framework for understanding how individuals and populations progress toward adopting and maintaining health

behavior change for optimal health” (Prochaska, Johnson, & Lee, 2009) and includes six stages and 10 processes of change, including the four identified by Kessler. TTM was developed from a perceived necessity to integrate over 300 theories of psychotherapy and utilizes stages or processes of change which may unfold at various levels and times. One of the most important processes of change as identified by TTM that may be utilized to assist with weight maintenance, this researcher believes, is “Self liberation is both the belief that one can change and the commitment and recommitment to act on that belief” (p. 62). The concept of self-liberation and an acknowledgement and acceptance of personal responsibility for change may be powerful motivators to assist in behavior and attitude changes surrounding weight maintenance.

A recent study to determine predictors of weight maintenance taught behaviors and skills to help participants deal with stimulus control relating to food environment, cravings, negative perceptions of exercise, and creating a supportive environment (Butryn et al., 2009). The study reported that those who most successfully maintained their weight did so as a result of decreased eating in response to emotions and concluded that in order to improve long-term weight loss outcomes, strategies must be identified and taught in order to assist in dealing with and reducing emotional eating. When teaching the skills and providing tools to enable those trying to maintain their weight, an important consideration to communicate is that behavior changes are not a quick and easy fix and must be practiced again and again to create new habits. Befort et al. (2008) advise that according to learning theory, new behaviors must be practiced again and again to become habits and warns that “It may take several years before the multiple behavior changes associated with weight loss become habitual or are less susceptible to competing reward contingencies associated with high-fat foods and sedentary behavior” (pp. 524-525). Motivation

also plays a key role and must also be employed and used in conjunction with the changes to create a positive atmosphere and new habits.

### *Awareness*

Awareness is considered a critical step because when one is aware of what triggers overeating, including the emotions, thoughts, feelings and other stimuli that create the urge to eat and the behavior that may temporarily relieve those urges, that awareness can be used to identify those situations and plan ahead for contingencies to deal more effectively with those emotions (Kessler, 2009). This may be even more important for those maintaining a weight loss because there now could be more freedom and food choices since weight loss has stopped. Citing the importance of changing one's environment to increase healthy behavior cues, Carels et al. (2008) emphasize the necessity of awareness in identifying the association of food cues with overeating. Leckman (as cited in Kessler, 2009) states that there is one moment in which one can exert power over habitual cues, and that moment is an awareness of the cue as it happens and a realization of the resulting behavior. At that moment, one can self-monitor and realize there is a choice. Practicing awareness can present an opportunity to reinforce positive behavior changes, a vital component of weight-loss maintenance.

Mindfulness can also be utilized to help increase awareness. Mindfulness may be described as non-judgmental awareness of thoughts and emotions in the very moment (Kabat-Zinn, 1990). Mindfulness Based Stress Reduction (MBSR) is an approach developed in 1979 by Kabat-Zinn to teach mindfulness meditation, help people become consciously aware of stress and other emotions, and learn skills to help deal with the emotions. Kabat-Zinn, Skillings, and

Salmon reported that by practicing MBSR techniques, participants experienced

A heightened sense of self and self-in-relationship, and a greater ability to find coherence and act effectively under high degrees of stress. These changes enhance the experience of self-efficacy in patients and their view of the value of engaging in their own on-going health and well-being through meditation, yoga, and above all, the systematic cultivation of awareness. (“Major Research Findings”, n.d.)

According to Kuyken et al. (2009), mindfulness-based cognitive therapy showed promising possibilities in treating some types of depression. Being mindful of decisions related to food, physical activity, and other behaviors may be utilized as an additional tool or skill for weight maintenance. One could conceivably experience a greater self-confidence in his or her ability to successfully maintain weight loss and deal more effectively with associated stresses by practicing mindfulness.

### *Creating Competing Behaviors*

When any problematic behavior seems insurmountable, a feeling of helplessness may ensue. One may believe that it is impossible to change behaviors and maintain them for a lifetime. This perception may be one of the most important to address, as one study determined that those who were unsuccessful in maintaining their weight loss reported that maintenance was very difficult or impossible (Befort et al., 2008). The second component of habit reversal or creating competing behaviors could be employed to help reverse the thoughts and feelings of helplessness. In order to prevent the habitual behaviors from exerting control, a choice may be made to identify and practice different or competing behaviors. Kessler (2009) compares this to having a road map as a guide through risky situations where one may be triggered and states that,

“Substituting competing behaviors for habitual responses demands. . . use of executive control functions, which can override the more primitive, hardwired circuitry of the brain” (p. 187).

Instead of eating a cookie one can make a different choice and take a walk around the block. An important element of a competing behavior is to plan ahead and anticipate what alternate choice can be made before encountering a negative cue.

### *Creating New Thoughts, Replacing the Old*

Creating new and positive thoughts can help still the old, negative thoughts. Kessler (2009) emphasizes, though, that it is important to note that the brain’s circuitry is such that the old thoughts never disappear. Yet with much practice and repetition, the positive thoughts can come to the forefront of the brain and replace the old ones. This concept is the foundational basis for cognitive behavior therapy which teaches substituting negative thoughts and behaviors with new and positive thoughts (Simmons & Griffiths, 2009). By utilizing behavioral therapies and skills when the negative thoughts appear, new tools are now in place to assist in dealing with those messages. Instead of thinking that it is just not possible or it is too difficult to maintain a weight loss, one can use the new thoughts that have been repeated and practiced and choose to replace the old thoughts with the newly formulated positive thoughts. The thought-stopping technique developed by Rawson (2005) emphasizes the necessity of deliberately and consciously halting a thought immediately as it happens in order to prevent urges and cravings. Teaching people the skills to pinpoint negative thoughts, change them, and anticipate and plan ahead for those occurrences are critical components of successful weight loss maintenance. Wing et al. (2008) hypothesize that people who practice these skills consistently may have an edge over those who do not when confronting setbacks from overeating or other types of relapse.

### *Support*

Support is vital to the success of habit reversal and creating new and positive lifetime habits. Weight Watchers stresses the importance of support and relates that, “Learning to create and live in a supportive atmosphere. . . . is a defining aspect of the Weight Watchers experience” (“The Four Pillars of a Science-Based Approach” n.d.). The program offers weekly meetings, brochures and handouts to help members with questions and challenges, a web site with community message boards available 24 hours a day, and meeting leaders may even offer additional one-on-one meetings (M. Malek, personal communication, October 14, 2009). Behavior changes can be difficult and having a support system can help one navigate the many challenges that will inevitably appear. According to E. Ramirez one of the strongest concepts of weight loss and maintenance programs is the support received from staff and other program members (personal communication, October 28, 2009). The knowledge that there is support from family, friends, and acquaintances may help those who might otherwise give up because of seemingly insurmountable difficulties. In contrast, one study reported that a support or social system can promote bad habits and obesity if those within the network are obese and encourage bad habits (Christakis & Fowler, 2007). However, with the appropriate skills, tools, knowledge, and a caring support team lifetime weight maintenance can become an achievable reality.

### *Discussion*

The review of the literature suggested that there are several critical components that comprise successful weight loss maintenance. These habits, skills, and behaviors have been identified by numerous research studies and may be considered to be standards for lifetime maintenance. By continually practicing these skills, habits, and behaviors one can experience success at maintaining weight loss and these successes can assist in contributing to greater self-

confidence. Identifying, teaching, and incorporating the important skills and habits for weight maintenance can result in strategies that can facilitate weight maintenance and improved health for a lifetime. Obesity has continued to rise to alarming levels in the United States. Due to the increasing health and economic costs of obesity the importance of not only losing weight but also maintaining it cannot be stressed enough. It is critical that those who have lost weight learn how to successfully maintain the loss in order to continue to experience improved health benefits.

## Chapter 3

### METHOD

There is increasing evidence suggesting that maintaining weight loss is achievable in spite of past perceptions of hopelessness and inevitability of regaining all the lost weight. The research conducted for this project outlines specific skills, habits, and tools considered to be best practices that have been identified and successfully utilized by many who have been able to maintain a weight loss for any amount of time (Butryn et al., 2007; Carels et al., 2007; Ulen et al., 2008). This chapter presented and outlined the methodology used to apply these practices for maintaining lost weight and utilized the skills to enable others to be successful at maintenance. The purpose of this project was to compile and synthesize habits, strategies and behaviors in order to conduct a workshop and teach the proven methods of weight maintenance.

#### Workshop Design

The workshop was designed to provide and share skills and behaviors for those who are attempting to maintain a weight loss. The fundamental components of the workshop focused on identifying and discussing the strategies which have proven successful for others who have maintained lost weight. The assumptions were that skills and habits of other proven maintainers can be taught by the researcher and further discussed and modified as necessary to provide a solid foundational understanding and knowledge of the important points of weight maintenance as well as provide motivation to continue with weight maintenance.

The research was qualitative and designed to understand and develop insight into the phenomena of successful weight maintenance. This method attempted to provide an understanding of what components and experiences may contribute to success as well as illustrate the diverse components and behavioral factors that may occur.



## Procedures

The workshop procedures were intended to teach the principles and strategies deemed to contribute to weight maintenance. The literature review was conducted to determine the practices and habits identified by researchers and successful maintainers that suggest successful weight maintenance is something that can be accomplished, even when there are many challenges and difficulties. The next step was compiling and synthesizing the elements into a comprehensive compendium of specific strategies in order to develop the workshop and teach and share with those who wish to maintain weight loss for a lifetime. From the literature review, there were four components identified as critical to the success of weight maintenance including eating habits, self-monitoring, physical activity, and various behavioral attitudes (Thomas & Wing, 2009; Wing & Phelan, 2005). These four components comprised the foundational basis from which the workshop was developed.

Participants were sent a survey prior to the beginning of the workshop to assess attitudes, beliefs, perceptions, and experiences with weight maintenance. This initial survey was used as a baseline to compare with evaluations given post-workshop. Upon completion of the workshop an evaluation form was provided to assist the researcher in determining the efficacy and relativity of the information presented. The results of the evaluation were compared to the pre-workshop survey to ascertain any changes in knowledge, perceptions, and attitudes surrounding maintaining weight loss. The results were used to make any changes or adjustments in the workshop format and content. In addition, a survey will be sent to the participants three months, six months and one year following the workshop to further assess the effectiveness of the workshop content over a longer period of time. The results of these surveys will be reviewed to assist the researcher in determining what changes can be made to increase the value and

effectiveness of the information provided in future workshops and develop an approach resulting in long-term and continued success with weight maintenance.

An additional component of the workshop will be a weekly motivational e-mail sent to participants to assist in personal goals and strategies and especially attitudinal changes in relation to eating behaviors. An assessment will be made to determine the effectiveness of the weekly e-mail communication and adjustments will be made to assist in increasing the value of communication in relation to motivating individuals to adhere to the maintenance program.

#### Target Audience

The workshop was designed to be presented to a small group of 10 or less participants in order to be of a size to facilitate individual interaction and is intended to be a maximum of two hours. Solicited participants were those who have lost any amount of weight and wished to learn skills and strategies to help maintain the weight loss. This workshop was meant to be inclusive and broad-based and not to address unique weight loss maintenance challenges such as maintenance criteria specific to surgical weight loss methods. Included in the presentation was pertinent information gathered from the literature review to teach skills and guidelines to develop and continue healthy eating and physical activity habits, proven methods of self-monitoring, goal-setting, and behavioral strategies to assist with problem-solving and emotional triggers.

#### Expected Outcome

The purpose of the workshop and the expected outcome was to provide specific skills, strategies, tools, ideas, and problem-solving methods to help participants who have lost weight maintain that loss. It was anticipated that open discussions will also provide new insights into problems, barriers, and challenges the participants may have experienced and might offer new and creative solutions to these challenges. The ultimate goal of the workshop was to provide not

only the foundational strategies which have helped others to successfully maintain weight loss but also to provide insight into behavior and attitudes to assist in reframing thoughts of hopelessness which may surround the phenomenon of weight maintenance.

#### Chapter Summary

The project was directed toward offering those who have lost weight the hope and inspiration that weight maintenance is achievable and not impossible. A number of methods, ideas, skills and strategies were taught and presented to allow and encourage participants to create a lifestyle and mindset focused on maintaining the weight loss for a lifetime in order to continue enjoy improved health benefits.

## Chapter 4

### RESULTS

The primary objective of this project was two-fold. The first was to identify the challenges and difficulties of maintaining lost weight and attempt to answer the question whether or not it is possible to maintain weight loss for any length of time. The second was to identify the effective and successful habits, strategies, skills and attitudes of those who have achieved long-term weight loss maintenance. These practices have been compiled and a workshop was designed as a forum to teach and share proven methods to those desiring to maintain lost weight.

The workshop consisted of a two-hour session outlining three key areas of weight maintenance and was designed to be presented to a group of ten or less participants who desired to learn skills relating to weight maintenance. The size of the group was chosen to be small enough to encourage interaction, participation and questions. The first segment discussed the perception of futility of maintaining weight loss and identified the reasons why maintenance may be difficult and challenging. Component two identified the foundational principles of successful weight maintenance including eating habits, physical activity, self-monitoring, support and learning to deal with relapses. The third and final component outlined critical behavioral techniques that have been identified as contributing to successful long-term maintenance. Key strategies to help control the strong cues that food can exert were described and discussed and participants were taught important habit-reversal techniques. Workshop attendees received packets to further enhance each of the components including a workshop outline, articles relating to weight maintenance and others' experiences with keeping off lost weight, a weight-maintenance contract, motivational exercises, and recipes for low-fat, low-calorie meals. In summary, the workshop was designed to teach the specific skills and provide tools to help

incorporate these practices into one's lifestyle to help ensure a lifetime commitment to be successful at maintaining weight loss. A further intention of the workshop was for the format to be open and flexible in order to facilitate productive and stimulating conversation to assist in improving and refining future workshops. Successive workshops might further explore specific aspects of the skills and habits such as shopping and preparing food.

#### The Futility of Maintenance: Perception or Reality?

This aspect of weight maintenance was explored to help understand if the belief that most people gain back all the lost weight is perception or reality. Positive findings and research were presented to help alter negative perceptions and to provide motivation and optimism that maintenance is possible to achieve when applying the strategies and habits of those who have achieved success.

Workshop participants learned methods to address and alter the feelings of helplessness and perception of futility that may accompany attempted maintenance after weight loss. Learners were presented with alternative perspectives and ways to address negative attitudes regarding maintenance.

#### Foundational Principles for Successful Weight Maintenance

The building blocks of weight maintenance as presented by members of the National Weight Control Registry, Weight Watchers and other successful maintainers were examined and shared. These included eating habits, physical activity, self-monitoring, catching slips at their inception, and establishing support.

Participants gained an understanding of the components of successful eating habits including food which is low-fat, low-calorie, satisfying, and filling to help prevent hunger.

These elements were discussed in order to enable learners to incorporate these components into their lives as part of an overall lifestyle change.

The necessity and importance of physical activity was explored and included a discussion of the critical aspect of exercise in a weight maintenance program. It was stressed that participants understand that a key aspect of successfully incorporating physical activity in one's lifestyle was choosing an activity that is fun and motivating.

Self-monitoring elements were emphasized as essential tools to help monitor and catch slips before they become larger relapses. Attendees gained an understanding of the positive relationship between self-monitoring and maintaining weight loss.

Lastly the importance of having a support system of family, friends, acquaintances and like-minded individuals was examined. Participants understood the role that support plays in successful maintenance and the importance of learning to ask for help when as well as prior to when it is needed.

#### Behavior Is Critical

Behavioral techniques which have been proven to be successful tools in weight maintenance were provided. Techniques to help deal with negative attitudes, urges and cravings, food stimulus cues, and conditioned behavior were presented and explored. An emphasis on planning for contingencies was specifically addressed.

Attendees learned alternative behaviors to assist in countering habits, eating problems, feelings of helplessness, and other challenges. An understanding of conditioned responses, food cravings and urges, and perceived barriers to weight maintenance was analyzed and principles of habit reversal were learned.

### Workshop Appraisals

Participants completed two appraisals. The first evaluation was given prior to the workshop to assist in identifying the attitudes, feelings and perceptions surrounding weight maintenance and the components of eating habits, participation in physical activity and other emotions surrounding weight-related concepts. The second appraisal was an exit survey completed at the end of the workshop to help determine if intended learner outcomes were realized. Participants were presented with an opportunity to provide input in order to modify or change the direction or topic of discussions in future workshops.

### Summary

The workshop was designed to teach, share and explore specific strategies and habits of successful weight loss maintainers and emphasize the importance not only of these elements but also to present cognitive behavioral components which may be utilized as well. The ultimate goal of the workshop was for the participants to learn and incorporate proven skills and methods to change behaviors and habits in order to achieve a lifetime of successful weight maintenance and to have the confidence in their ability to achieve this goal.

## Chapter 5

### DISCUSSION

The focus of the research was to identify the perceptions that maintenance of weight loss was rarely achievable and also to compile and synthesize the habits, practices, and skills that have used by those who have successfully maintained their weight. The perception of impossibility and futility of weight maintenance was explored as well as more recent research suggesting that weight maintenance is more achievable than has been previously thought. The workshop was conducted to present the findings of the research and present those habits, skills, practices and attitudes which have resulted in success for those wishing to maintain their weight loss. The workshop focused on various aspects of weight maintenance but primarily on the key elements of successful weight maintenance including eating habits, physical activity, self-monitoring, support, and behavioral techniques. An emphasis was placed on understanding that these changes must be incorporated as a permanent lifestyle modification and not viewed as a quick fix that only needs to be practiced for a short period of time. An additional purpose of the workshop was to focus on the health aspect of weight maintenance in order to understand that by maintaining one's weight the risk of cardiovascular disease, diabetes, osteoarthritis, and certain types of cancer can be reduced.

An assessment of the material was performed by a faculty member prior to the workshop and feedback included suggestions to incorporate into the workshop additional topics surrounding media effect on weight maintenance and how it may influence one's perception of body image, emotional issues surrounding weight maintenance, and possible cultural attitudes affecting one's perception of body weight and image. These elements were interwoven into the



workshop to help facilitate further discussions regarding body image and reasons why one might have specific attitudes and perceptions of weight maintenance.

### Workshop Outcome

The first workshop was conducted with a group of nine women who expressed a desire to learn skills necessary to maintain their weight and a concern with the difficulty of the task. The workshop began with an overview of the alarming statistics of obesity and an ensuing discussion of the costs of obesity, both in dollars and emotional and physical health. The researcher emphasized that most of the participants had indicated on the initial survey both the belief that they can succeed when they apply a positive attitude and that they look forward to a new challenge. The perceptions were related to the concept of weight maintenance and how it is a challenge that is better met with a positive attitude in order to be successful. The concept that some researchers posit that weight maintenance may be even more important than weight loss was discussed as there may be additional or different motivation required once that one has achieved a weight loss goal.

Most participants expressed concern that in mid-life they keep gaining weight and did not understand why. One participant complained that it seemed no matter how little she ate the results were consistent weight gain. A discussion ensued that one's body and metabolism may change but that this challenge may be better viewed as a positive wake-up call to eat more healthfully not only to help maintain weight but also to improve overall health. The discussion served as a springboard to the importance of the key elements that have been identified as the habits of those who have been successful at long-term weight maintenance. Body image was explored as well as perceived cultural expectations of thinness and how it could be possible to

accept one's body as being healthy and strong as opposed to accepting cultural or media messages that thinness is the primary concern.

The first habit discussed was eating and how those who have successfully maintained their weight consistently ate low fat, low calorie, high fiber and filling foods. The importance of keeping a food diary was emphasized as a critical tool to realistically understand why one might be gaining weight and when making adjustments in eating habits may be necessary. The consistent-weight-gainer participant shared the realization that by keeping a food diary, it could help her become accountable in order to understand how many bread samples she was eating when she shopped at the wholesale store. The aspect of denial was explored as related to the ease of having an unrealistic perception of food intake and how a food diary could serve as reality check for actual food consumption.

Physical activity was examined as the second habit for successful weight maintenance and ways to incorporate more of activity into one's life were discussed. A few participants stated they simply did not have time to exercise which led to a consideration of alternative ways to get more activity. The ideas presented included stretching at work and getting up from one's desk and taking a short walk and all the participants agreed that these small changes were something they could easily incorporate into their daily routine. A discussion followed on how children view play or activity as something fun but adults may view physical activity as more of a chore or something that should be done. A challenge was presented to participants as to how to change one's mind about increased physical activity by doing activities that are enjoyable and motivating.

Self-monitoring was the next concept presented. Participants examined how frequently weighing might correlate and assist with preventing any weight gains. Valuable questions arose

regarding possible links between frequency of weighing and eating disorders and the feelings and perceptions of giving up when even a slight weight gain was observed. The researcher presented alternative thoughts and ways to view a small weight regain and how to deal with relapses. It was emphasized that a relapse is better viewed as a slip-up and an opportunity to learn more effective ways to deal with challenges so that when they arise in the future, one could be better equipped to deal with the relapse as opposed to giving up. An important consideration was the realization that when one views a relapse as a common and expected occurrence, it may be easier to get back on track, ask for help and support, and incorporate the tools learned to help recover from the relapse.

Behavior aspects were examined including four techniques of habit reversal. The concept of highly palatable foods was discussed and translated into understanding that a lack of willpower was not the reason for lapses or relapses. The researcher presented the concept that many processed and fast foods are designed to specifically to create the desire and conditioned response to overeat. Realizing that certain foods can set up a stimulus to overeat may be an important idea to keep in mind when one is attempting to control those food cues that are seemingly impossible to resist. Many participants expressed frustration and feeling helpless and out of control when confronted with specific trigger foods. The elements of awareness, creating and practicing new and competing behaviors, creating new thoughts to replace the old, negative thoughts, and creating a positive support system were considered. Specific examples of how to practice new, competing thoughts and behaviors were presented and participants eagerly suggested ideas of how each could begin to incorporate these changes into their life.

Lastly the element of support was considered. Participants understood and agreed that by establishing a group of supportive friends, family, and other acquaintances it could help motivate

them to more effectively and consistently practice the habits and skills required to help maintain lifetime weight loss. Many vowed to contact their support system when they needed help and encouragement and to use this as a valuable tool to help achieve their weight maintenance goal. It was further discussed that sometimes one may have to deal with others who may not want them to succeed and ideas and suggestions were explored relating to dealing with the non-supporters.

### Future Projects

Discussions of how to cook and eat more healthfully were productive and encouraging. Several participants expressed the concern of getting in a rut and not being able to be creative when shopping, cooking, and eating, or simply not having time to prepare healthy meals therefore resorting to fast food. This prompted an examination of ways to expand one's knowledge of cooking and ingredients and resulted in a discussion of different cuisines that might be fun to experiment with as well as time-saving techniques for preparing meals. One participant expressed a concern that she was intimidated about trying different things and not knowing where to begin to shop for exotic-sounding ingredients. This prompted a discussion of the availability of various shopping venues and stores where ethnic food can be purchased. This topic could be a fun and productive avenue to explore for future workshops which might include a field trip to purchase ingredients followed by a cooking demonstration and hands-on participation in preparing different ethnic dishes. Different workshops and demonstrations could possibly result in increased motivation and confidence to try new experiences.

### Limitations of Workshop

The primary limitation of the workshop was that it was a two-hour session in which many different skills and strategies of weight maintenance and a great deal of other information were

presented. A more extensive workshop might be developed that would focus more thoroughly on each of the topics covered. Even though all participants agreed that the workshop shared useful and beneficial information, the question arises will the strategies and habits that were shared prove to be effective after the workshop? Will participants practice and incorporate any of them into their daily lives? The researcher understands the ease of which each of us can slip back into old habits. The workshop format provided valuable presentations, ideas, and discussions of habit reversal and motivation but it may be possible that most attendees will practice little if any of what was learned. This may be an indication for future workshops or classes incorporating more specific behavioral techniques in order to understand the importance of changing attitudes, perceptions, and behavior in order to help successfully maintain weight loss. The behavioral components are vital to practice continually in order to sustain a lifestyle modification and achieve lifetime weight maintenance.

#### Summary

A workshop evaluation was given to assess if participants' feelings and perceptions of the topic of weight maintenance had altered. It also assessed if the information was valuable and asked for suggestions regarding changes or additions for future workshops. The feedback was positive and comments indicated that the topic and information presented were extremely valuable and applicable. The evaluation results indicated that the participants received information and motivation to help them with weight maintenance and that the tools, practices, and strategies presented were habits that they could and would begin to incorporate into their lives.

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