An Investigative study into the Relationship between an Individual’s Dieting Self Efficacy and Intentions

Name: Amy McGrath

Submitted in partial fulfilment of the requirements of the Bachelor of Arts Degree Psychology Specialization at DBS School of Arts, Dublin

Supervisor: Dr Garry Prentice

Head of Department: Dr S. Eccles

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Department of Psychology

DBS School of Arts
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ABSTRACT

The current study looked at a person’s level of Self Efficacy and Intentions in relation to weight loss. The scales used were based on the theory of Planed behavior (Ajzen, 1985) and DIET-SE Diet Self Efficacy (Stich, 2009). At the beginning of the eight week period participants expressed their views on Attitudes, Subjective Norms, Intentions and Control and in addition the three subscales of the DIET-SE assessed factors affecting weight loss and levels of self efficacy looking specifically at High Calorie Foods, Negative Emotional Events and Social and Internal factors. Participants were asked to set a weight loss target for themselves over an eight week period. During the eight week period participants were exposed to various Interventions with grounding in Cognitive Behavior therapy based on the healthy eating program they had signed up for. Eight weeks later they were asked if they reached their weight loss target and to express their views again on Attitudes, Subjective Norms, Intentions and Control and the three subscales of the DIET-SE (HCF), (NEE) and (SIF). No significant difference was found between a participant level of Self Efficacy (High Calorie Foods, Negative Emotional Events, Social and Internal factors) whether they reached their weight loss target or not from Pre and Post Intervention in relation to between weight loss achieved or not achieved. Results found no significant relationship between Intentions, Control and change in BMI (M= 11.11, SD = 1.49) No difference was found according to Gender and Attitudes, Subjective Norms, Intentions and Control, (HCF), (NEE) and (SIF). There was no significant difference according to Age and Attitudes, Subjective Norms, Intentions and Control, (HCF), (NEE) and (SIF).
1.1 Introduction

Current studies into the prevalence of Obesity in Ireland are what prompted my investigative study into the relationship between an individual’s dieting self efficacy and
intentions. The study will look at weight loss over an eight week period following a group of males and females that were randomly chosen for the study. The question is why a person carrying excess weight should not lose the weight, if it is going to result in better lifestyle, improved health, improved self efficacy and self esteem, to name just a few benefits. It is hypothesized that underlying psychological factors must be related to this issue. The idiom “easier said than done” is informal and used in everyday conversation about a lot of tasks, it is used for saying that something is a good idea but it will be difficult to achieve. I believe this idiom is quite relevant to the way a person feels about weight loss as a lot of personal change in behaviours and habits is required to see weight loss results.

In Ireland more than 60 per cent of adults aged under 65 are either obese or overweight. The National Adult Nutrition Survey, carried out by the Irish Universities Nutrition Alliance, also found that over a 20-year period, obesity in men increased three-fold. (Walton 2011)

Ireland is undergoing a major diabetes epidemic with as many as 30,000 undetected cases, according to a new healthcare study. A screening programme involving over 19,000 people has shown that over 2,400 individuals had either diabetes or pre-diabetes. Type 2 diabetes is typically caused by poor diet, being overweight, being sedentary and usually develops when one is over 45 years of age. Substantial evidence suggests that Type 2 diabetes can be prevented or delayed and people at high risk of developing diabetes can be easily identified. It is estimated that the number of people with the disease will reach almost 200,000 by 2015, an increase of 37 per cent from 2008. (Carr, 2011) There has been considerable research into the area of weight loss (Rudd Centre for Food Policy & Obesity, (2012) Stich, (2009). Larocque & Stotland, (2009),Glynn & Ruderman (1986). With obesity on the increase it is urgent that action is taken by individuals to maintain a healthy weight. A healthy weight is
extremely important for physiological factors such as health, however psychological factors like self esteem, self worth are equally as important.

1.2 Aims

The aim of this study is to investigate whether a reduction of excess weight and reaching a specific weight loss target can improve one’s level of self efficacy while measuring a person’s Attitude towards weight loss and goals, Subjective Norms, Perceived Control, and Intentions. Other variables that will affect this study will be gender, age and height to establish BMI. Goals will also be measured in relation to variables on perceived control and intentions. The study will also factor the Cognitive behaviour therapy techniques employed to within the clinic to aid clients with their transition in habits and behaviour.

1.3 Definition of Obesity

Obesity develops over time due to a poor diet and lack of physical exercise. However behaviours learned from parents, family and the environment are huge factors in relation to obesity. Choosing unhealthy convenient foods are high in calories and saturated fat such as fast food. A lack of fruit and vegetable in one’s diet and over consumption of refined carbohydrates such as white bread. By eating too many carbohydrates this will lead to hypoglycaemia, where the blood sugars rise and fall rapidly and the person experiences constant hunger. Alternatively if ones does not eat regularly and leaves long periods of time between meals this will lead to poor food choice. The individual will be too hungry and will have no will power to try to eat a healthy meal. This often leads to overeating sometimes eating double the portion that one should be eating (Larocque, 1999. Chp.5&6)
Emotions are an area of obesity that needs to be addressed and is a main reason for psychologists to pay attention and for it to be considered under the DSM-V. When people are feeling low or have had a bad day they may use food as a comfort or reward. This will ultimately have a negative effect on their self esteem and if they are trying to stick to a healthy eating plan, they may feel like they have failed and give up trying to lose weight. (Larocque 1999, Chps. 7 &19.)

Lack of physical activity contributes to the obesity problem. Carrying extra weight can make it difficult to get the exercise that a person requires to burn calories that the person is taking in. A person must burn 3,500 calories to lose 1lb. (Larocque,1999 p.56-57)

1.4 Literature Review, Weight Bias & Attribution Theory

According to the Rudd centre

“Despite increased attention to the obesity epidemic, little has been done to stop the bias and discrimination that obese children and adults face every day. The social consequences of obesity include discrimination in employment, barriers in education, biased attitudes from health care professionals, stereotypes in the media, and stigma in interpersonal relationships. All these factors reduce quality of life for vast numbers of overweight and obese people and have both immediate and long-term consequences for their emotional and physical health” their goal is to prevent this stigma that people in all walks of life face every day through research. (Rudd Centre for Food Policy & Obesity, 2012)

Weight Bias affects so many people however there is no actual theory developed yet to explain the reasons for weight bias or the beginning of negative stereotypes that would help
communities in reducing this problem. The current studies’ 30 participants expressed feelings that they would feel more confident in themselves if they were at their ideal weight, the pressure of shopping for clothes, their appearance and what fellow people in work or out socialising thought about their weight where all primary motives for initiating weight loss. (Rudd Centre for Food Policy & Obesity, 2012)

The Attribution theory was first proposed by Heider (1958) however Weiner and colleagues (e.g., Jones & Davis 1965 and Kelley, 1967,1973) developed a theoretical framework that has become a major research paradigm of social psychology. (Eysenck, 2000, p.501). Their research was concerned with how individuals interpret events and how this relates to their thinking and behaviour. The Attribution theory assumes that people try to determine why people do what they do. A person seeking to understand why another person did something may attribute one or more causes to that behaviour. According to Heider a person can make two attributions (1) Internal attribution, the inference that a person is behaving in a certain way because of something about the person, such as attitude, character or personality. (2) External attribution, the inference that a person is behaving a certain way because of something about the situation he or she is in (Eysenck, 2000, p. 501). This principle supports the currents study aims in relation to whether a reduction of excess weight and reaching a specific weight loss target can improve one’s level of self efficacy while measuring a person attitude towards weight loss and goals, Subjective Norms, Perceived Control, and Intentions.

The Attribution Theory does address some relevant areas in relation to stigma that may assists in understanding weight bias. The Attribution theory suggests that,” in reacting to a stigmatized condition like obesity, people tend to ascribe reasons for that condition. We do this with many types of people because it helps us to quickly categorize information about
social groups and form expectations of the people in those groups.” (Rudd Centre for Food Policy & Obesity, 2012)

According to the Rudd Centre they propose

“That obesity stigma occurs when we make negative attributions to explain negative life outcomes. Traditional North American values of self-determination and individualism provide a foundation for these attributions; our culture tends to believe that we live in a fair world where people are responsible for their life situation and get what they deserve. Despite research suggesting that body weight is determined by a complex interaction of genetic, biological and environmental factors, most people continue to believe that obese individuals are responsible for being overweight, and that weight gain or loss is under a person’s control. In other words, attribution theory proposes that negative stereotypes come from attributing other people’s life situations to matters of personal responsibility. Thus, someone who believes that weight is a matter of personal responsibility is more likely to blame and stigmatize those who are overweight.” (Rudd Centre for food policy and obesity, 2012)

Obese Women, are at higher risk for low self-esteem, body dissatisfaction, anxiety, major depression, and suicidal ideation and attempts (Carpenter, Hasin, Allison, & Faith, 2000; Kivima‘ki et al., 2009; Reilly et al., 2003 as cited in Pearl et al 2012). Weight stigma increases vulnerability to these psychological problems (Eisenberg, Neumark-Sztainer, & Story, 2003; Friedman, Ashmore, & Applegate, 2008; Puhl & Heuer, 2009; Puhl & Latner, 2007 as cited in Pearl et al 2012), in addition to physical complications such as poor cardiovascular health and overall health-related quality of life (Lilis, Levin, & Hayes, 2011; Puhl & Latner, 2007 as
cited in Pearl et al, 2012). The bias and affect referred to in this article by Pearl et al.(2012) is similar to feelings that are expressed by participants in the current study and support the current studies aims in determining how the internal and external factors can affect weight loss.

Individuals who experience weight stigmatization also have increased risk of binge eating, exercise avoidance, poorer weight loss treatment outcomes, and underutilization of health care services (Amy, Aalborg, Lyons, & Keranen, 2006; Ashmore, Friedman, Reichmann, & Musante, 2008; Carels et al., 2009; Vartanian& Shaprow, 2008), challenging the popular belief that weight bias motivates individuals to lose weight and become healthy (Puhl & Heuer, 2010; Puhl, Moss-Racusin, & Schwartz, 2007). Although the majority of research thus far has documented negative health consequences associated with experiences of stigma, there are still ambiguities about how weight stigma influences health.(Pearl et al 2012)

1.5 Dieting Self Efficacy

An article by Rubin (2012) reported for the Chicago Tribune highlights the issue “What the experts say about weight loss.” Over eating leads to obesity and according to Marlene Schwartz deputy director of the Rudd Centre for Food Policy and Obesity at Yale University. "The reason obesity has been rising and why it's so difficult to reverse is that our environment and biology are working against us". Schwartz argues that our environment can affect an individual’s ability to eat healthy. There are numerous convenient unhealthy highly desirable foods that are marketed intensely. According to Schwartz, M. it is similar to someone trying to give up smoking. Through the current study questionnaire under the DIET-SE section will analyze how a person reacts to food within a difficult environment. (Rubin, 2012)
Dieting self efficacy is an important predictor in relation to weight loss successful or unsuccessful (Stich, 2009). In 1977 Bandura introduced the construct of self efficacy and in 1995 defined self efficacy as “belief in one’s capabilities to organise and execute the courses of action required to manage prospective situations” (Stich, 2009) Glynn and Ruderman in 1986 designed an eating self efficacy scale. During the 1980’s there was considerable research into self efficacy and addictive disorders Condiotte and Lichtenstein (1981) found that self efficacy and smoking demonstrated a positive relation between post cessation efficacy and abstinence during follow up. Glynn and Ruderman (1986) was one of the first research studies to bring to light self efficacy and eating behaviours with specific reference to the issue of eating self efficacy and constructed the ESES 79 item scale. The current study does not include the ESES scale (Glynn & Ruderman, 1986)

In 2009 a study was published, A Scenario-Based Dieting Self Efficacy Scale (DIET-SE), (Stich, Knauper, Tint, 2009). It found three internally consistent and reliable factors that made it difficult for people to follow a healthy eating plan, high caloric food temptation,[HCF] social and internal factors [SIF] and negative emotional events[NEE] The three subscales of the DIET-SE show moderate intercorrelations, identifying that they reach into related yet distinct types of situational dieting self efficacy. The study found that there was some relationship with HCF and SIF indicating that intake and temptation of higher calorie foods were affected by social outings/occasions. Convergent validity is established with other measures of dieting self efficacy one of these was Glynn and Ruderman ESES scale however they also measured for eating disinhibition, susceptibility to hunger and weight loss competency. Criterion-related validity was provided through the assessment of goal adherence and predictive validity was established for dieters actual food intake (N=68) The
DIET-SE overall represents a short reliable and valid scenario-based measure of dieting self-efficacy. It is for this reason that the current study decided to incorporate this scale into the questionnaire.

1.6 Theoretical Approaches to Weight Loss

A study conducted by Stotland & Larocque (2009) 

Change over time in positive and negative dimensions of weight loss. Has linked successful weight loss to a reduction of negative factors affecting motivation. In a study tracking shifts in weight control attitudes important in a therapeutic context, in order to help support patient’s motivation. There were 40,000 participants that took part in the study from Canada, France and Ireland. According to Stotland & Larocque there are two types of weight control motivation, both of which are important, at different stages of weight control. A Factor Analysis was conducted to determine if there are one or more components making up weight control motivation. Stotland and Larocque found there are two, which they call Positive and Negative Motivation, corresponding to the Value X Expectancy model.

According to the study conducted by Stotland and Larocque positive motivation is made up of four questions, reflecting the person’s perception that their current weight is causing physical and emotional suffering and that weight loss will bring important benefits in these regards. Negative motivation is also based on four questions and reflects the perception that trying to lose weight will bring suffering, and that the chance of success is low.

The first 5 weeks of treatment found a significant improvement in weight, eating, depression, and stress that were related to reductions of negative motivation, but unrelated to changes in positive motivation. Stotland & Larocque, 2005 have already shown that in obesity treatment early outcome is a positive predictor of later outcome. Recent results show that the early
reduction in negative weight control motivation is very likely an important predictor of outcome in weight management. The Weight Control Motivation Scale provides an index of positive and negative thinking that can be used to guide Cognitive-Behaviour Therapy (CBT) in working to reduce negative thinking. Since their scale measures the “frequency” of specific thoughts during the past week, the scale is closely related to what the researchers call “mental operations” (Stotland, Larocque, & Kronick, 2006 as cited in Larocque and Stotland, 2009). Therefore the study concluded that a two-factor model best explained the motivation items, which the study labelled Positive and Negative motivation. Patients with a high BMI had higher starting levels of Positive motivation. Psychological symptoms and uncontrolled eating were strongly related to Negative motivation. Looking across the repeated assessments, Positive motivation remained stable, while Negative motivation decreased over the first 3 assessments and then stabilized. Reductions in Negative motivation, but not Positive motivation, were strongly related to improvements in eating habits, as well as weight loss and improved emotional state. In relation to this study the participants completed two mental weight questionnaires over the eight week period within the weight loss clinic to address their motivation as part of their healthy eating programme and to identify habits and attitudes that need to be addressed. To assess what triggers are still present e.g. reward, emotion, guilt, perfectionism. The participants are also encouraged to listen to a number of behaviour modification programming developed by Larocque to help change their habits and behaviour, this is the area of the healthy eating plan that addresses the Cognitive Behaviour Therapy. The research relates directly to the weight loss clinic intervention where the sample was from. This will be discussed in the procedures section in relation to Mental Weight Questionnaire.

Table 1.1 (Appendices 6.1) **BODY WEIGHT EVOLUTION**
Regarding Positive and Negative Motivation

- The Mental Weight (eating habits, stress, perfectionism, depression) follow the same lines
- This study of over 40,000 tests was conducted in 3 different countries (Ireland, Canada, France) over a period of 5 weeks in October 2009

Theory of Reasoned Action and Planned Behaviour

The Theory of Reasoned Action and Planned Behaviour are one of the dominant features of this study. According to the TRA model the most important determinant of behaviour is behavioural intention. Direct determinant of an individual’s intention is their attitude towards performing the behaviour and their subjective norm that is associated with the behaviour. (Glanz et al 2008 p. 9-11.) The Cognitive structures (behavioural and normative beliefs) influence individual attitudes and subjective norms. In turn, attitudes and norms shape a person's intention to perform behaviour. The TPB model introduces Perceived control over the behaviour. It takes into account a situation where the individual may not have complete control over the behaviour. Perceived control was added to the model by Ajzen to allow for external factors that were outside one’s control that may affect the Intention and Behaviour. Perceived control is determined by control beliefs that were
concerned with having barriers that could increase or decrease behaviour, which may determine if they facilitate or inhibit the behaviour. The TRA and TPB model assume a causal chain that links Behavioural beliefs, Normative beliefs and Control beliefs to behavioural intentions and behaviours via attitudes, subjective norms and perceived control. 
(Glanz et al, 2008, p. 9-11)

Icek Ajzen theory of planned behaviour has been used in the study of weight loss. In the article, Intention, Perceived Control and weight loss: An application of the Theory of planned behaviour, (1985). Schifter and Ajzen re-examined the use of attitudinal and personality variables as predictors of success in attempted weight loss. The approach was from the theory of planned behaviour which is an extension of the theory of reasoned action to non motivational determinants of behaviour. Ajzen original model of planned behaviour focuses on the individual’s intentions to lose weight. It is assumed that the intention will be a function of three conceptually independent variables. The first is attitude towards weight loss. This depends on the degree of favourable or unfavourable evaluation of this behavioural goal. The second is subjective norms this addresses if social pressure affects a person ability to lose weight and the third which was added to theory of reasoned action is the degree of perceived control over one’s own body. This is the theory of planned behaviours this perceived control aided Ajzen in establishing the perceived ease or difficulty to lose weight and also reflects past experiences as well as future obstacles.

In support of the theory, intentions to lose weight were accurately predicted on the basis of attitudes, subjective norms, and perceived control; perceived control and intentions were together moderately successful in predicting the amount of weight that participants actually lost over a 6-wk period .(Schifter & Ajzen, 1985)
Further research in 2005 was carried out by Wammes, Kremers, Breedveld & Brug. Their study was an application of the theory of planned behaviour (TPB) with additional variables to predict people’s motivations to prevent weight gain. They also took into account variations in measures across individuals these were classified into Precaution Adoption Process stages (PAPM-stages) of behaviour. The study carried out found that messages to influence attitudes towards the prevention of weight gain and risk perception may affect people who are not yet motivated to prevent weight gain. Interventions increasing people's perceived behavioural control in overcoming barriers to prevent weight gain may help people to act on their intentions. Wammes et al, (2005) study demonstrates how trying to resolve the issue of weight gain before it becomes a risk to a person health is key to the obesity crisis. Early intervention within schools could be the key to tackling this problem educating parents and children. The current study has not included children or addressed early educational...
intervention for children however it would be an important area of consideration for future research.

1.7 Interventions for Weight Loss

Dr. Robert Kushner, clinical director of the North-western Comprehensive Centre on Obesity. Explains that changing our behaviour is never easy however he has identified three factors that were common in people who had lost weight and maintained the loss.

(1) Vigilance. Achieving over the long haul means monitoring behaviours and decision-making (2) Seamless integration. For successful dieters, good habits are woven into their daily routines, not something temporary. (3) Assertiveness. Gaining control over your surroundings is key. As cited in the article What the experts say about weight loss, (Rubin, 2012) The healthy eating programme the current participants are attending consider these factors as a vital tool in weight loss and maintenance, through weekly consultations and a series of questions e.g., On a sale of 1-10 how was your Compliance in adhering to the healthy eating plan over the past week? On a scale of 1-10 how did you feel your motivation was over the past week? Did you feel deprived over the past week? How are you feeling in yourself? E.g. Emotions. Are you happy with your current weight loss? What do you feel are the main Benefits of reaching your ideal weight? Have you had any negative/ unrealistic thoughts? (If the client responds yes the A,B,C,D is worked through, as mentioned in the procedures section) How was your physical activity over the past week? Did you think about your visualisation (e.g., playing your movie in your mind of yourself at your ideal weight. Possibly wearing an outfit that you would really love to wear and imaging yourself at an
event, most importantly the client is encouraged to express how they feel while thinking of these things. These elements are explored to see how the individual managed with adhering to the plan the previous week and to assess the level of motivation that they are feeling to keep encouraging the adherence to the healthy eating plan.

1.8 Research Questions

It is hypothesized that a person who reaches a desired target/goal of specific weight loss that they have set for themselves over an eight week period will demonstrate a higher level of self efficacy, compared with a person that fails to meet their target. It is also expected that intentions to lose weight can be predicted from attitudes, subjective norms and perceived control. The three subscales of the DIET-Se will be expected to demonstrate how additional social and internal factors, negative emotional events and high calorie food temptation will lead to difficulty in adhering to a healthy eating plan. The study will measure this through analyses of the questionnaires that were based on the DIET-SE, TpB and changes in weight loss based on BMI reading. It is expected that a greater influence over Control and Intention will suggest a change in BMI (Behaviour)

There will be a significant difference within subjects in Self Efficacy. The sample consists of 30 participants following a specific healthy eating programme with interventions as mentioned in the procedures and method section, based on Behaviour modification programme. It is anticipated that there will be no significant difference between gender and age. It is hypothesized scoring low on the DIET-SE three subscale will have a negative effect on weight loss and adherence to maintain to a healthy eating plan. It is expected that a person who does not reach their target weight loss that it will decrease their levels of self efficacy.
CHAPTER 2
2.1 Materials

All instruments are self administered paper and pencil questionnaires. The current study consisted of a merged questionnaire based on the DIET-SE and TpB likert scales. The first section looked at background questions. Four questions are demographic variables. Name/ Date of Birth, Gender, Age, Height and Current Weight/ BMI. The six questions that
follow are to determine specific weight loss goal. (See Appendices Table 6.4) Section 2 of the questionnaire consisted of a series of 7 point likert scale. Questions 1 and 2 were concerned with measuring attitude which rated on three scales labelled good-bad, harmful-beneficial and desirable – undesirable. Questions 3-6 measured subjective norm. Questions 3 & 4 measured moral norm and question 6 measured subjective norm. The participants answered this on a 7 point scale E.g.

**Q5.** Most people who are important to you think that you should TRY TO reduce your weight over the next eight weeks

*Strongly Disagree : 1 : 2 : 3 : 4 : 5 : 6 : 7: Strongly Agree*

Intentions were also measured. Questions 7-10 again these were measured on a 7 point likert scale measuring from unlikely to likely and true to false. Questions 11 and 12 were used to measure perceived control. E.g.

**Q.11.** The likelihood that if you try you will manage to reduce your weight over the next eight weeks

*(Mark an X on the appropriate dashed line)*

0% (Impossible) : 1 : 2 : 3 : 4 : 5 : 6 : 7 : 8 : 9 : 100% (Certain)

(Schifter, Ajzen, 1985)

In the next section of the questionnaire respondents are asked to indicate their level of confidence when faced with their ability to resist a variety of temptations involving food and eating. Responses were assessed on a likert type scale ranging from 0(not at all confident) to 4 (very confident). The DIET-SE is assessed in three subscales Factor 1. High Calorie Food assessed by questions 7, 3, 6 and 10.Factor 2. Social and Internal factors assessed by
questions 5, 9, 2 and 1 and Factor 3. Negative and Emotional Events assessed by questions 4, 11 and 8. (See Table 6.3 in appendices)

The present study aim is to assess reliability and validity of theory of planned behaviour and DIET-SE. The questionnaire was administered within an eight week interval. It was hypothesised that the TpB scale and DIET-SE would complement each other and reports a significant correlation between scales.

2.2 Participants

30 (25 females and 5 males) participant ranging in age from 20 years to 70 years from a weight loss clinic located in Dublin city centre took part in this study. However questionnaires will not make reference to any specific weight loss programme used by the Clinic itself. The current study will make reference to the various interventions used to aid weight loss in the clinic. In the first stage of the study the pre questionnaire was given to participants to fill in, at home or within the clinic if they had the time. The participants were encouraged to answer honestly. The questionnaire took approximately 10 minutes to complete. In the second stage of the study the Post questionnaire was given to the same participants eight weeks later again the questionnaire took no more than 10 minutes to complete and they could complete it at home or in the clinic. Of the 30 people that took part in stage one 17 took part in the second stage, 3 participants had dropped out of the programme and were not contactable.
2.3 Design

The type of design the current study has employed is a quasi-experimental, within subjects’ design that is quantitative in nature and also longitudinal. The study will measure intentions from the same sample on a healthy eating plan with the goal of losing weight. The study will be regressing intentions on to attitudes, subjective norm, control and diet self-efficacy plus regressing behaviour (weight loss) on to intentions, control and diet self-efficacy. Other variables that will affect this study will be gender, age and height to establish BMI. Goals will also be measured in relation to variables on perceived control and intentions. Predictor variables within his study are Overweight, BMI (Pre Intervention), Self efficacy, attitudes, subjective norms, and perceived control, healthy eating plan, age, height, gender. Criterion variable within the study are weight loss, behavior changes (BMI Post Interventions), self efficacy and intentions.

2.4 Procedures

The study looked at 30 participants and the various interventions used by the weight loss clinic. Each participant is a client of the clinic. They have started a healthy eating programme which they chose themselves when they joined the clinic. The length of time of the weight loss programme is 20 weeks. The current study conducted the questionnaires’ over an eight week. Each client who participated in the study attends the clinic on a weekly basis. The first visit requires the client to meet with a weight loss consultant to take them through their weight loss programme. The client will also complete the clinics mental weight questionnaire which measures a person’s habits and attitudes in relation to weight loss. The questionnaire was devised by Dr Maurice Larocque and is mentioned in the previous research. (See p. 14-16)
The first consultation is 1 hour in duration, measurements of bust, waist and hips are recorded along with blood pressure and weight, BMI is noted and Body fat %. The client receives their behaviour modification programme including a book and CD by Dr Maurice Larocque “Be Thin Through Motivation”, and CD “Healthy Minds, Healthy Matters”. A food diary (the client is asked to record their daily food intake) and weekly handouts relating to various aspects of weight loss and behaviour changes over the 20 week course. (There is a GP on call at all times if ever a medical query arises) A photograph is taken to record a before and after when weight loss is achieved.

The client returns on week two for their second consultation. This consultation is 30 minutes in duration and focuses on weight loss for the first week, Visualisation and analysis of results of mental weight questionnaire to begin the process of changing habits. The food diary is examined to see how the client managed on their first week of adhering to the healthy eating plan. Weight loss is recorded. The client is then asked to visualise themselves reaching their target weight and the consultant will take them through a visualisation sequence to help them with this. They are also encouraged to describe and think of the benefits that they will gain from reaching their target weight. The consultant’s role is to help, guide and support the client in their weight loss. The consultant is not a counsellor, they are to implement the plan, encourage and challenge the client to think about habits and behaviours that need to be modified.

Visits Three to Twenty are 15 minutes in duration.

Week Three will analyse the person Body fat % and BMI to see if it has reduced.
Week Four will take measurements and blood pressure to record any changes.

Week Five the client is asked to repeat the Mental Weight Questionnaire.

Week Six the consultant will analysis the mental weight questionnaire to discuss any changes noted in habits and attitudes.

These weekly measures are then repeated over the next 14 weeks following the same pattern.

In addition to these interventions at each consultation the clients weight loss is recorded, they are asked how their week is going and encouraged to discuss any issues they are having in relation to their weight loss. When faced with challenging, negative thoughts the clients are encouraged to engage in the A,B,C,D’s. This is a formula to encourage the client to take a negative unrealistic thought and turn it into a positive, realistic thought. E.g. Negative Thought “It is too hard to stick to a healthy eating plan”. Realistic thought, “It is hard being overweight”. By changing our thought process we can change how we feel about something (our emotions) and therefore that will change our behaviour (Larocque, 1990, p.18)

A = An event or situation that takes place

B = The thought, realistic or unrealistic – in relation to the event

C = Emotions- that occurs from the thoughts

D = The Behaviour- positive or negative behaviour

(Larocque, 1990, p.18)

Larocque has also designed a range of behaviour modification programmes on CD which the Clients are encouraged to listen, to help change habits that are preventing them from losing weight and or causing a plateau in the weight loss goals, Larocque refers to these as triggers, (E.g. Reward and Food, Emotion and Food, Guilt, Perfectionism, Positive motivation, Negative motivation) to weight loss, which is identified through the clients
Mental Weight Questionnaires. The in house questionnaire aids the client is identifying many mental blocks and bad habits.

The programme also has a series of handouts addressing various elements that hinder weight loss. These handouts are given to clients when the consultant feels they will be beneficial to the clients weight loss program. E.g., If they did not see a weight loss and feel angry, frustrated and upset, the consultant may give them the Scale handout to read as a goal for that week, which explains the various reasons why a person may not have lost weight that week even when they have followed their plan and how the scale is not the most important aspect. How the client is feeling in themselves and their clothes is an important factor to success. Other handouts include, What Are You Afraid Of, The Dimmer Switch, Numero Uno, Diet Saboteurs, Don’t Quit, Recognising Reward, Obesity, The Toughest Challenge of one’s life, Stop fooling yourself, The Scale, Take a Picture, Successful Restarting and the Triple A process.

One of Dr. Larocque’s key techniques employed is the Triple A Process. Triple A stands for Awareness, a person must become aware of their associations between food and their emotions. It generally stems from childhood. E.g. If you fall off your bike you were looked after and given something to make you feel better such as ice cream or a biscuit. The client has nurtured their emotions with food before they were even aware of it and this progressed throughout their lives. Becoming aware of this association is the first step to change. Acceptance is the next step, now that the client has become aware of the association they must accept it. The client must accept the way they were raised and the association with food and emotions. By taking this step they are saying I am human, I make mistakes and it is ok. Decreasing the guilt, leading to less stress and allowing the client to think things through clearly and this will further their success in taking the next step the right course of Action.
According to Dr. Larocque the first action must be positive self talk, Positive affirmations. E.g. Everyday say to yourself “I am at my desired weight of ..........,and i feel good about myself and one of the benefits of being slimmer today is .......” By talking negatively to ourselves we are only increasing negative factors which decrease the motivation and weight loss as described earlier in Dr Larocque 2009 Motivation study. A person must embrace these three steps to succeed in their weight loss (Larocque, 1999).

### 2.5 Data Analysis
The current study will look at response from participants towards Attitudes, Subjective Norms, Intention and Control at baseline. The study will regress intentions on to attitudes, subjective norm, control and diet self-efficacy plus regressing behaviour (weight loss/change in BMI) on to intentions, control and diet self-efficacy. In addition the study will look at Mean and Standard Deviation as well as conducting a correlation analysis and a paired samples t-test. This t-test will compare diet self-efficacy before and after any weight loss.

**CHAPTER 3**

**RESULTS**
Results

3.1 Participants at Baseline

Of the study’s 30 participants 83.3% were female and 16.7% Males the average age of participants was 43 years and average BMI was 30.8 at baseline.
At baseline 60% of the participants reported having a specific weight loss for the eight week period while 40% did not. The study found that 93.3% of participants had tried to lose weight in the past while only 53.3% were successful in reaching an ideal weight previously. On average the 53.3% of participants maintained this weight loss for 29 months.

### 3.2 Attitudes, Subjective Norms, Intention and Control at Baseline.

Table 1. Descriptive Statistics for Attitudes, Subjective Norms, Intention and Control at baseline.

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
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</tr>
</thead>
<tbody>
<tr>
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<td>30</td>
<td>6.76</td>
<td>.459</td>
</tr>
<tr>
<td>Control</td>
<td>30</td>
<td>81.1</td>
<td>15.7</td>
</tr>
</tbody>
</table>

Minimum score is 1 while maximum is 7 for Attitudes, Subjective Norms and Intentions. Control is 0 to 100. At baseline there is a very positive response from participants in relation to attitude, subjective norm and intention in relation to weight loss and an encouraging response via control (see Table 1) suggesting that participant’s level of belief in their ability to lose weight is strong.

### 3.3 DIET-SE. Self Efficacy levels at Time 1 and Time 2 according to weight loss
**Independent sample T-Test**

Results reported no significant difference in diet Self efficacy according to participants who were successful or unsuccessful in reaching their target. Therefore there was no difference found between a higher Self Efficacy and High Calorie Foods (M= 1.09 SD=1.36) \( t(25)=.800, p>.005, \text{2 tailed} \) similarly no difference was found between Self Efficacy and Social and Internal factors ( M= .243, SD= 1.30) \( t(25)=.186, p>.05, \text{2 tailed} \) and in addition no significant difference between Negative Emotional Events and levels of Self Efficacy. (M= .243, SD= 1.08) \( t(25)=.225, p>0.05, \text{2 tailed} \). The Mean and Std Deviation recognise small differences but they are not significant as the Independent T Test found.

### 3.4 Perceived Control, Attitudes, Subjective Norms as Predictors of Intentions

**TPB Model Multiple Regression**

Multiple Regression was used to test whether Perceived Control, Attitude and Subjective Norm were predictors of a person intentions. The result indicated that the three predictors explained 11.2% \( R^2=0.112, F(3,26) =2.22, p<0.05 \) Therefore the combination of all predictors did not have predictive value in relation to intentions to lose weight. It was found that control has a significant positive moderately strong effect (standardised beta= .425, \( p>0.05 \)) Therefore the more perceived control that the participants had over their weight the greater the intention to lose weight over the eight week period. However no relationship was found between subjective norm and intention (standardised beta= -.197, \( p> 0.05 \)) or between attitude and intentions (standardised beta =.236, \( p> 0.05 \))
3.5 Weight Loss, Intentions and Control

*Pearson Correlation*

The aim of the study was to demonstrate a relationship between change in BMI (a reduction), Intentions and Control. A Pearson correlation coefficient was employed to examine possible relationships between the criterion variable Intention and Control and the predictor variable BMI. The correlation indicated that there is no significant relationship between Intentions and BMI ($r = -0.107, p<0.05$, 2 tailed). The Pearson correlation also looked at significance between Control and BMI and reported no significant relationship ($r = 0.032, p<0.05$, 2 tailed). The relationship is weak and non significant.

3.6 Differences between Males and Females BMI change and differences in gender with relation to Attitudes, Subjective Norms, Intention, Control, High Calorie Foods, Social and Internal factors and Negative Emotional Events.

*Independent Samples T Test*

An Independent Samples T Test was performed to identify any difference between Gender and change in BMI due to High Calorie Foods, Social and Internal factors and Negative Emotional Events, Attitudes, Subjective Norms, Intention and Control a baseline. There was no difference found between High Calorie foods according to gender ($M = -0.640$, $SD = 1.56$) ($t(28) = -4.10, p>.005$, 2 tailed). No significant difference between Social and Internal factors according to gender ($M = 3.20$, $SD = 1.33$) ($t(28) = 2.39, p>0.05$, 2 tailed). No difference was reported between Negative Emotional Events according to gender ($M = -1.00$, $SD = 1.67$) ($t(28) = -1.39, p>.05$, 2 tailed).
SD= 1.21) \( t(28)= -.826, p>0.05\) 2 tailed). However there was a significant difference found between Attitude according to gender \( t(4.19)=1.31, p<0.05\) 2 tailed) \( M=.280, SD=.213\).

No significant difference between Subjective Norms according to gender \( M=.580, SD=.705\) \( t(28) = .822, p>0.05\) 2 tailed). No difference was found between Intention according to gender \( M=.020, SD=.228\) \( t(28) = .087, p>0.05\) 2 tailed). No Difference between Control according to gender \( M= 2.60, SD= 7.85\) \( t(28) = .331, p>0.05, 2\) tailed) No significant difference between change in BMI according to gender \( M= -.579, SD=.745\) \( t(25) = -7.77, p>0.05\) 2 tailed).

3.7 Age and change in BMI in relation to Attitudes, Subjective Norms, Intention, Control, High Calorie Foods, Social and Internal factors and Negative Emotional Events at baseline.

P*earson Correlation*

A Pearson correlation was employed to assess a relationship between Age and change in BMI in relation to Attitudes, Subjective Norms, Intention, Control, High Calorie Foods, Social and Internal factors, Negative Emotional Events and BMI. Analysis found no relationship between age and any of the variables at baseline. Age and Attitude \( r = .072, p>0.05, 2\) tailed) Age and Subjective Norms \( r = -.294, p>0.05, 2\) tailed) Age and Intention, \( r = .244\ P>0.05, 2\) tailed) Age and Control \( r = .210, p>0.05, 2\) tailed) Age and High Calorie Foods, \( r = .008, p>0.05, 2\) tailed). Age and Social and Internal factors \( r = -.219, p>0.05, 2\) tailed) Age and Negative Emotional Events \( r = -.097, p>0.05, 2\) tailed) Age and BMI Change \( r = -.097,p>0.05, 2\) tailed)
There was some relationship found between Attitude and High Calorie Foods, \((r = .415, p>0.05, 2\text{ tailed})\) Subjective Norm and Negative Emotional Events \((r = .414, p>0.05, 2\text{ tailed})\)

Subjective Norm and Social and Internal factors where the correlation is significant at the 0.01 level \((r = .540, p>0.05, 2\text{ tailed})\)

### 3.8 Diet Self Efficacy and change in BMI.

A Pearson’s correlation was conducted to identify a relationship between dieting self efficacy and a change in BMI. The study found no correlation between change in BMI and High Calorie Foods \((r = .149, p>0.05, 2\text{ tailed})\) There was a non significant weak positive relationship identified between change in BMI and Social and Internal factors \((r = .022, p>0.05, 2\text{ tailed})\). In addition a non significant weak positive relationship was detected between change in BMI and Negative Emotional Events \((r = .108, p>0.05, 2\text{ tailed})\)

However the study did find a strong positive relationship between Social and Internal factors and High Calorie Foods where the correlation is significant at the 0.01 level \((r = .643, p<0.05, 2\text{ tailed})\) where the correlation is significant at the 0.01 level. A strong positive relationship was found between High Calorie Foods and Negative Emotional Events where the correlation is significant at the 0.01 level \((r = .757, p<0.05, 2\text{ tailed})\) where the correlation is significant at the 0.01 level and also a strong positive correlation was found between Negative Emotional Events and Social and Internal factors where the correlation is significant at the 0.01 level \((r = .520, p<0.05, 2\text{ tailed})\)

### 3.9 Changes in Self Efficacy in relation to Reaching Targets

**Pre Intervention and Post Intervention**
Paired Samples T Test

A paired samples t test was conducted to compare weight loss target achievement over the eight week period and levels of Self Efficacy Pre Intervention and Self Efficacy at Post Intervention. For the participants who did reach their weight loss target over the eight weeks there was no significant difference found between High Calorie Foods Pre Interventions (M= 12.2, SD= 3.61) and High Calorie Foods Post Interventions (M= 13.6, SD= 2.55) (t(7) = -1.88, p>0.05, 2 tailed) Similarly there was no significant difference found between Social and Internal Factors Pre Interventions (M= 11.8, SD= 3.79) and Social and Internal Factors Post Interventions (M= 12.8, SD= 2.16) (t(7) = -1.32, p>0.05, 2 tailed) and no significant difference was found between Negative Emotional Events Pre Interventions (M= 8.87, SD= 2.99) and Negative Emotional Events Post Interventions (M= 9.87, SD= 2.53) (t(7) = -1.87, p>0.05, 2 tailed)

Participants who did not reach their weight loss target over the eight week period also showed no significant difference between High Calorie Foods Pre Interventions (M= 11.1, SD= 3.07) and High Calorie Foods Post Interventions (M= 10.2, SD= 4.03) (t(18) = -1.59, p>0.05, 2 tailed) Similarly there was no significant difference found between Social and Internal Factors Pre Interventions (M= 11.6, SD= 2.79) and Social and Internal Factors Post Interventions (M= 12.0, SD= 2.53) (t(18) = -0.812, p>0.05, 2 tailed) and no significant difference was found between Negative Emotional Events Pre Interventions (M= 8.63, SD= 2.38) and Negative Emotional Events Post Interventions (M= 8.15, SD= 3.16) (t(18) = 1.01, p>0.05, 2 tailed)
CHAPTER 4

DISCUSSION
4.1 Research Question

Of the study’s 30 participants 83.3% were female and 16.7% males. The average age of participants was 43 years and average BMI was 30.8 at baseline. It was expected that intentions to lose weight can be predicted from attitudes, subjective norms and perceived control. At baseline there is a very positive response from participants in relation to attitude, subjective norm and intention in relation to weight loss and an encouraging response via
control (see Table 1) suggesting that participant’s level of belief in their ability to lose weight is strong.

Table 1. Descriptive Statistics for Attitudes, Subjective Norms, Intention and Control at baseline.

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<tr>
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</tr>
</tbody>
</table>

It was hypothesised that an individual who did not reach their anticipated weight loss would see a decrease in levels of self efficacy however no significant difference was found between the weight loss and levels of Self Efficacy assessed by the three subscales High Calorie Foods, Negative Emotional Events and Social and Internal Factors. Therefore we can reject the null hypothesis.

The study looked at Perceived Control, Attitudes, Subjective Norms as predictors of Intentions The result indicated that the three predictors explained 11.2% ($R^2=0.112$, $F(3,26)=2.22, p<0.05$) Therefore the combination of all predictors did not have predictive value in relation to intentions to lose weight. It was found that control has a significant positive moderately strong effect (standardised beta= .425, p>0.05). Analyses proved that the more perceived control that the participants had over their weight the greater the intention to lose weight over the eight week period. However no relationship was found between subjective
norm and intention (standardised beta= -0.197, p> 0.05) or between attitude and intentions (standardised beta =.236, p> 0.05)

The study wanted to demonstrate a relationship between change in BMI (a reduction), Intentions and Control. A Pearson correlation coefficient was employed to examine possible relationships between the criterion variable Intention and Control and the predictor variable BMI. Analyses indicated that there was no significant relationship between Intentions and change in BMI and between Control and BMI. The relationship is weak and non significant which is curious as the negative relationship between intentions and change in BMI tentatively suggests that the stronger the intentions to lose weight in this sample the more likely they have shown little reduction in weight and possible even weight gain. There may be underlying factors affecting participant’s response. Due to the nature of the researcher’s job title “Weight Management Consultant” who consults with the participants from the sample, they may have been trying to impress the researcher demonstrating that they still have the strongest on intentions and control to lose weight. Another possible explanation for this is the Behaviour Modification programme employed by the clinic, a common term of encouragement used is “You are allowed to slip, but not to Quit” (Larocque, 1999) Therefore if the client does not reach target or has a few bad weeks, they should not feel guilty about it but accept it and move on similar to the Triple A process discussed in the Procedures section, Acceptance, Awareness and Action.

It was hypothesised that the study would find no differences between Males and Females and change in BMI and differences in gender with relation to Attitudes, Subjective Norms,
Intention, Control, High Calorie Foods, Social and Internal factors and Negative Emotional Events. No difference was found between these and we can accept our Null Hypothesis. However there was a significant difference found between Attitude and gender (t(4.19)=1.31, p<0.05, 2 tailed) (M=.280, SD=.213).

The current study hypothesises that no change would be found between Age and change in BMI in relation to Attitudes, Subjective Norms, Intention, Control, High Calorie Foods, Social and Internal factors and Negative Emotional Events at baseline. A Pearson correlation employed to do so found no relationship between age and any of the variables at baseline and we can accept our Null Hypothesis.

There was some relationship found between Attitude and High Calorie Foods, (r = .415, P>0.05, 2 tailed) Subjective Norm and Negative Emotional Events (r = .414, p>0.05, 2 tailed) Subjective Norm and Social and Internal factors where the correlation is significant at the 0.01 level (r = .540, p>0.05, 2 tailed).

The study also identified no relationship between Diet Self Efficacy based on the three subscales and change in BMI. However the study did find a strong positive relationship between Social and Internal factors and High Calorie Foods where the correlation is significant at the 0.01 level (r = .643, p<0.05, 2 tailed). A strong positive relationship was found between High Calorie Foods and Negative Emotional Events where the correlation is significant at the 0.01 level (r = .757, p<0.05, 2 tailed) where the correlation is significant at the 0.01 level and also a strong positive correlation was found between Negative Emotional
Events and Social and Internal factors where the correlation is significant at the 0.01 level
\( r = .520, \ p < 0.05, \) 2 tailed

It is hypothesized scoring low on the DIET-SE three subscale will have a negative effect on weight loss and adherence to maintain a healthy eating plan. It was expected that a person who does not reach their weight loss target would experience a decrease in their levels of self efficacy. Analyses showed no significant difference in an individual’s level of self efficacy if they did or did not reach their weight loss target, therefore we must reject the null hypothesis.

4.2 Limitations

The participants from the weight loss clinic that took part in this study were at various stages of weight loss when the questionnaire was distributed. However each individual would have experienced the interventions as described in the procedures section, over the eight week period. The study did not account for previous weight loss before each participant answered the questionnaire and the length of time they were attending the weight loss clinic prior to answering the questionnaires. This may have had some effect on changes in Attitudes, Subjective Norms, Control and Intentions and levels of Self Efficacy from Pre Intervention and Post Intervention. A difference may have been found in attitudes, Subjective Norms, Intentions and Control before seeing any weight loss results Pre and Post Interventions. The participant may have had doubts about their ability to lose weight and this could have possibly affected results Pre and Post. With the length of time available to the current study there was not enough time to gather participants in this way. The questionnaire was first given in Week 1 of December 2011 and the follow up was Week 1 of February 2012. The questionnaire did not account for the Holiday period and any New Year’s resolution as
extraneous variable. Both times of year are associated with weight gain and intention to lose weight post Christmas. The average weight gain for people over the holiday period is approximately 1lb (Hull et al, 2006 p.1 as cited in The effect of the Thanksgiving Holiday on weight gain) The study would have benefited if all participants had began the programme at the first time the questionnaire were given this would have allowed for more control over the study as all participant would be at the same stages of their programme.

4.3 Future Research

The currents study’s aim was to contribute to the area of research into weight loss and behaviour. Further research into this area in needed. At the moment the DSM-V does not recognise Obesity as a mental disorder. In 2010 the DSM-5 Task force was established to revise the definition of a Mental Disorder, the group consisted of experts in Anxiety, Obsessive-Compulsive, Posttraumatic, Dissociative Disorders and Mood Disorders. The current definition of Mental Disorder by the DSM-V (APA DSM-5, Definition of a Mental Disorder 2012)

A. A clinically significant behavioural or psychological syndrome or pattern that occurs in an individual
B. Is associated with present distress (e.g., a painful symptom) or disability (i.e., impairment in one or more important areas of functioning) or with a significantly increased risk of suffering death, pain, disability, or an important loss of freedom
C. Must not be merely an expectable and culturally sanctioned response to a particular event, for example, the death of a loved one
D. A manifestation of a behavioural, psychological, or biological dysfunction in the individual
E. Neither deviant behaviour (e.g., political, religious, or sexual) nor conflicts that are primarily between the individual and society are mental disorders unless the deviance or conflict is a symptom of a dysfunction in the individual.

Other Considerations

F. No definition adequately specifies precise boundaries for the concept of "mental disorder”

G. The concept of mental disorder (like many other concepts in medicine and science) lacks a consistent operational definition that covers all situations.

Further research is needed to analyse if obesity is in fact a mental disorder. One area that is looking at this is the Yale & Rudd Centre for Policy and Obesity. They are increasing their research in food and addiction and have found at least three criteria from the DSM-V Substance Dependence that supports Binge Eating Disorder. (Gearhardt, 2011 as cited in Sugar Highs and Lows, The New Science of Sugar Addiction). According to Gearhardt (2011) Obesity is a Multifaceted Disorder they may not demonstrate instant addiction E.g. overconsumption of food over a period of time.

It is something that psychology and health psychologists should consider as an area of importance as the increase in obesity is rising and this will ultimately have an effect on mortality rates in Ireland and lead to increase expense in Health Insurance and Government spending due to the cost of health related diseases such as Diabetes, Coronary Heart Disease, Blood Pressure, Cholesterol, Depression, Sleep apnea, Gall Bladder etc that are associated with obesity. Early intervention within schools could be the key to tackling this problem educating parents and children. The current study has not included children or addressed early educational intervention for children however it would be an important area of consideration for future research.
4.4 Conclusion

Obesity develops over time due to a poor diet and lack of physical exercise. However, behaviours learned from parents, family and the environment are huge factors in relation to obesity. The current study set out to investigate any relationship between an Individual’s Dieting Self Efficacy and Intentions. The use of the theory of planned behaviour TpB scale was a valid and reliable tool that allowed participants to express their views on Attitudes, Subjective Norms, Intentions and Control. Ajzen (1985) and Stich, (2009) DIET-SE was a valid and reliable method to analyses participant’s reactions to the three subscales of the DIET-SE (HCF), (NEE) and (SIF). No significant difference was found between a participant reaching their weight loss target or not and levels of Self Efficacy. (M=1.09, SD=1.36).

Results found no significant relationship between Intentions, Control and change in BMI (M= 11.11, SD = 1.49) No difference was found between Gender and Attitudes, Subjective Norms, Intentions and Control, (HCF), (NEE) and (SIF). There was no significant difference in a person’s self efficacy (High Calorie Foods, Negative Emotional Events and Social and Internal factors )whether they reached their weight loss target or not from Pre and Post Intervention in relation to between weight loss achieved or not achieved.

Although results showed very little differences between Pre Intervention and Post Intervention in relation to weight loss and change in self efficacy. The study may support the behaviour modification programme used by the weight loss programme which emphasises You are allowed to Slip but not to Quit. If a client makes a mistake, falls off the plan, lose motivation or don’t do what you are meant to do (eating the wrong foods, exercise etc) that’s ok. To assure the client that they are human and that they are allowed to make mistake. This may account for no fluctuation in Self Efficacy levels. The study has attributed to the current
literature in the area of obesity and weight loss in further exploration into behaviours underlying obesity.

References


Larocque, M. Stotland, S. (2009) *Changes over time in positive and negative dimensions of weight control motivation* McGill University, Montreal, Canada MLA Inc., Montreal, Canada


CHAPTER 6

APPENDICES
Table 6.1 Body weight Evolution

Regarding Positive and Negative Motivation

<table>
<thead>
<tr>
<th>Change in BMI</th>
<th>Change in Negative Motivation</th>
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<tr>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Change in Positive Motivation

- The Mental Weight (eating habits, stress, perfectionism, depression) follow the same lines
- This study of over 40,000 tests was conducted in 3 different countries (Ireland, Canada, France) over a period of 5 weeks in October 2009

Table 6.2

Theory of Reasoned Action and Planned behaviour (Ajzen, 2006)
Table 6.3

DIET-SE Three Subscales (Stich et al, 2009)
### Table 1
Item Wordings and Exact Factor Loadings for Factors 1, 2, and 3

<table>
<thead>
<tr>
<th>Factors and Items</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Factor 1: High-Calorie Food</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. You see at a friend’s house and your friend offers you a delicious looking pastry. How confident are you that you would refuse this offer?</td>
<td>.777</td>
<td>.092</td>
<td>-.150</td>
</tr>
<tr>
<td>3. There is a party at work and a coworker offers you a piece of cake. How confident are you that you would turn it down?</td>
<td>.604</td>
<td>.064</td>
<td>-.006</td>
</tr>
<tr>
<td>6. You finished your meal and you still feel hungry. There are cakes and fruits available. How confident are you that you would choose the fruits?</td>
<td>.552</td>
<td>-.083</td>
<td>.122</td>
</tr>
<tr>
<td>10. You are out with a friend at lunch time and your friend suggests that you stop and get some ice cream. How confident are you that you would resist the temptation?</td>
<td>.539</td>
<td>.032</td>
<td>.096</td>
</tr>
<tr>
<td><strong>Factor 2: Social and Internal Factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. You are invited to someone’s house for dinner and your host is an excellent cook. You often overeat because the food tastes so good. How confident are you that you would not overeat as a dinner guest?</td>
<td>-.046</td>
<td>.615</td>
<td>.045</td>
</tr>
<tr>
<td>9. You feel like celebrating. You are going out with friends to a good restaurant. How confident are you that you would celebrate without overeating?</td>
<td>.007</td>
<td>.552</td>
<td>.171</td>
</tr>
<tr>
<td>2. You often overeat at supper because you are tired and hungry when you get home. How confident are you that you would not overeat at supper?</td>
<td>.084</td>
<td>.507</td>
<td>-.040</td>
</tr>
<tr>
<td>1. You are having dinner with your family and your favorite meal has been prepared. You finish the first helping and someone says, “Why don’t you have some more?” How confident are you that you would turn down a second helping?</td>
<td>.642</td>
<td>.724</td>
<td>-.067</td>
</tr>
<tr>
<td><strong>Factor 3: Negative Emotional Events</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. You just had an upsetting argument with a family member. You are standing in front of the refrigerator and you feel like eating everything in sight. How confident are you that you would find some other way to make yourself feel better?</td>
<td>-.094</td>
<td>.090</td>
<td>.767</td>
</tr>
<tr>
<td>11. You just had an argument with your boyfriend or girlfriend. You are upset, angry, and you feel like eating something. How confident are you that you would talk the situation over with someone or go for a walk instead of eating?</td>
<td>-.010</td>
<td>.023</td>
<td>.767</td>
</tr>
<tr>
<td>8. You are having a hard day at work and you are anxious and upset. You feel like getting a candy bar. How confident are you that you would find a more constructive way to calm down and cope with your feelings?</td>
<td>.317</td>
<td>-.140</td>
<td>.513</td>
</tr>
</tbody>
</table>

Note: Loadings are taken from the pattern matrix. Loadings in bold are values above .40.

### 6.4

**Questionnaire, Pre Interventions**
Name: _________________________________

Gender: Male/Female Age:_______ Height: ______

What is your Current weight or BM: ____________

For Yes/No questions please circle the correct answer

Q.1. How much weight would you like to lose over the next Eight weeks:______

Q.2. Do You have a SPECIFIC Weight Loss target over the next Eight Weeks: Yes / No

Q.3. If Yes what is your anticipated Weight Loss Goal over the next Eight weeks: _____

Q.4. Before beginning your current healthy eating plan, have you tried to lose weight in the past YES/ NO

Q, 5. Were you Successful in reaching your Ideal weight in the past YES/NO

Q, 6. If Yes, for approximately how long did you maintain your Ideal weight: ______

Please answer each of the following questions by circling the number that best describes your opinion. Some of the questions may appear to be similar, but they do address somewhat different issues.

Now please read each statement carefully and circle the appropriate number based on your strength of feeling in relation to each statement provided.

1. For you to reduce your weight during the next eight weeks would be:-

   Bad : __1__:_2__:_3__:_4__:_5__:_6__:_7__:_5
   Harmful : __1__:_2__:_3__:_4__:_5__:_6__:_7__:_ Beneficial
Undesirable : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Desirable

2. For you to TRY TO reduce your weight during the next eight weeks would be:-

Bad : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Good

Harmful : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Beneficial

Undesirable : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Desirable

3. Most people who are important to you think that you should reduce your weight over the next eight weeks

Strongly Disagree : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Strongly Agree

4. Most people who are important to you would support your decision to reduce your weight over the next eight weeks

Strongly Disagree : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Strongly Agree

5. Most people who are important to you think that you should TRY TO reduce your weight over the next eight weeks

Strongly Disagree : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Strongly Agree

6. Most people who are important to you would support your decision to TRY TO reduce your weight over the next eight weeks

Strongly Disagree : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Strongly Agree

7. You intend to reduce your weight over the next eight weeks

Unlikely : __1__:__2__:__3__:__4__:__5__:__6__:__7__: Likely
8. You will try to reduce your weight over the next eight weeks

*Unlikely*: ___1___:___2___:___3___:___4___:___5___:___6___:___7___: __Likely__

9. You have decided to reduce your weight over the next eight weeks

*False*: ___1___:___2___:___3___:___4___:___5___:___6___:___7___: __True__

10. You are determined to reduce your weight over the next eight weeks

*False*: ___1___:___2___:___3___:___4___:___5___:___6___:___7___: __True__

11. The likelihood that if you try you will manage to reduce your weight over the next eight weeks

*Mark an X on the appropriate dashed line*

0% (Impossible): ___:___:___:___:___:___:___:___:___:___: 100% (Certain)

12. Your best estimate that any attempt on your part to reduce your weight over the next eight weeks would be successful

*Mark an X on the appropriate dashed line*

0% (Impossible): ___:___:___:___:___:___:___:___:___:___: 100% (Certain)

The following questions relate to situations and behaviors that can hinder weight loss or weight control.

**Please imagine yourself** in each of the following situations and rate how confident you are that you could overcome them, using the 5-point scale below. Completely fill in the circle that best indicates how confident you feel that you could overcome the situation.

1. You are having dinner with your family and your favorite meal has been prepared. You finish the first helping

<table>
<thead>
<tr>
<th>Not at all confident</th>
<th>A little confident</th>
<th>Moderately confident</th>
<th>Quite confident</th>
<th>Very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
and someone says, "Why don't you have some more?" How confident are you that you would turn down a second helping?

2. You often overeat at supper because you are tired and hungry when you get home. How confident are you that you would not overeat at supper?

3. There is a party at work for a coworker and someone offers you a piece of cake. How confident are you that you would turn it down?

4. You just had an upsetting argument with a family member. You are standing in front of the refrigerator and you feel like eating everything in sight. How confident are you that you would find some other way to make yourself feel better?

5. You are invited to someone's house for dinner and your host is an excellent cook. You often overeat because the food tastes so good. How confident are you that you would not overeat as a dinner guest?

6. You finished your meal and you still feel hungry. There are cakes and fruits available. How confident are you that you would choose the fruits?

7. You are at a friend's house and your friend offers you a delicious looking pastry. How confident are you that you would refuse this offer? #

8. You are having a hard day at work and you are anxious and upset. You feel like getting a candy bar. How confident are you that you would find a more constructive way to calm down and cope with your feelings?
9. You feel like celebrating. You are going out with friends to a good restaurant. How confident are you that you would celebrate without overeating?

0 1 2 3 4

10. You are out with a friend at lunch time and your friend suggests that you stop and get some ice cream. How confident are you that you would resist the temptation?

0 1 2 3 4

11. You just had an argument with your boy-friend or girlfriend. You are upset, angry, and you feel like eating something. How confident are you that you would talk the situation over with someone or go for a walk instead of eating?

0 1 2 3 4

Thank you very Much for your Time.
A Follow Up Questionnaire will be conducted in Eight weeks Time
Would You be Happy To Partake in the Study Again
Please circle either Yes or No

Yes/ No
6.5

Questionnaire, Post Interventions

Name: ______________________________

Gender: Male/Female  Age: _____  Height: _____

What is your Current weight or BMI: ___________

Q.1. Over the last 8 weeks did you reach your desired weight loss goal. YES / NO

Please answer each of the following questions by circling the number that best describes your opinion. Some of the questions may appear to be similar, but they do address somewhat different issues.

Now please read each statement carefully and circle the appropriate number based on your strength of feeling in relation to each statement provided.

1. For you to reduce your weight during the next eight weeks would be:-

   Bad: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Good
   Harmful: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Beneficial
   Undesirable: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Desirable

2. For you to TRY TO reduce your weight during the next eight weeks would be:-

   Bad: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Good
   Harmful: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Beneficial
   Undesirable: _1_ _2_ _3_ _4_ _5_ _6_ _7_:  Desirable
3. Most people who are important to you think that you should reduce your weight over the next eight weeks

   Strongly Disagree : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Strongly Agree

4. Most people who are important to you would support your decision to reduce your weight over the next eight weeks

   Strongly Disagree : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Strongly Agree

5. Most people who are important to you think that you should TRY TO reduce your weight over the next eight weeks

   Strongly Disagree : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Strongly Agree

6. Most people who are important to you would support your decision to TRY TO reduce your weight over the next eight weeks

   Strongly Disagree : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Strongly Agree

7. You intend to reduce your weight over the next eight weeks

   Unlikely : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Likely

8. You will try to reduce your weight over the next eight weeks

   Unlikely : __1__: __2__: __3__: __4__: __5__: __6__: __7__: Likely

9. You have decided to reduce your weight over the next eight weeks

   False : __1__: __2__: __3__: __4__: __5__: __6__: __7__: True
10. You are determined to reduce your weight over the next eight weeks

*False*: 1. 2. 3. 4. 5. 6. 7. *True*

11. The likelihood that if you try you will manage to reduce your weight over the next eight weeks

(*Mark an X on the appropriate dashed line*)

0% (Impossible): 1. 2. 3. 4. 5. 6. 7. 8. 9. 10% (Certain)

12. Your best estimate that any attempt on your part to reduce your weight over the next eight weeks would be successful

(*Mark an X on the appropriate dashed line*)

0% (Impossible): 1. 2. 3. 4. 5. 6. 7. 8. 9. 10% (Certain)

The following questions relate to situations and behaviors that can hinder weight loss or weight control.

**Please imagine yourself** in each of the following situations and rate how confident you are that you could overcome them, using the 5-point scale below. Completely fill in the circle that best indicates how confident you feel that you could overcome the situation.

<table>
<thead>
<tr>
<th>Situation</th>
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<th>Quite confident</th>
<th>Very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. You are having dinner with your family and your favorite meal has been prepared. You finish the first helping and someone says, &quot;Why don't you have some more?&quot; How confident are you that you would turn down a second helping?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. You often overeat at supper because you are tired and hungry when you get home. How confident are you that you would not overeat at supper?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
14. There is a party at work for a coworker and someone offers you a piece of cake. How confident are you that you would turn it down?

15. You just had an upsetting argument with a family member. You are standing in front of the refrigerator and you feel like eating everything in sight. How confident are you that you would find some other way to make yourself feel better?

16. You are invited to someone's house for dinner and your host is an excellent cook. You often overeat because the food tastes so good. How confident are you that you would not overeat as a dinner guest?

17. You finished your meal and you still feel hungry. There are cakes and fruits available. How confident are you that you would choose the fruits?

18. You are at a friend's house and your friend offers you a delicious looking pastry. How confident are you that you would refuse this offer?

19. You are having a hard day at work and you are anxious and upset. You feel like getting a candy bar. How confident are you that you would find a more constructive way to calm down and cope with your feelings?

20. You feel like celebrating. You are going out with friends to a good restaurant. How confident are you that you would celebrate without overeating?

21. You are out with a friend at lunch time and your friend suggests that you stop and get some ice cream. How confident are you that you would resist the temptation?
22. You just had an argument with your boyfriend or girlfriend. You are upset, angry, and you feel like eating something. How confident are you that you would talk the situation over with someone or go for a walk instead of eating?

0 1 2 3 4

Thank you very Much for your Time.