What Impact does a Lifestyle Intervention have on Emotions, Stress, Behaviour, Motivation, Self-image and Weight?

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S00904596

19th of August 2016

Supervisor: Dr. Amy Harrison

Word Count: 9867

Dissertation submitted to Regent's University London for the fulfillment of the Master of Science in Psychology Degree

2016

Acknowledgments

I would like to sincerely thank my supervisor, Dr. Amy Harrison for guiding me throughout the process of my project, replying instantly to my countless emails and pointing me in the right direction. I am extremely grateful for all her assistance throughout my study. I would like to thank one of my oldest friends Mary Catherine for proof reading my work. I would also like to thank the entire Psychology department at Regent's University for their open door policy and constant helping approach especially Sam Bennet as I was a frequent visitor for SPSS help.

I would like to express my gratitude to the Motivation Weight Management Clinic that helped me so much with my purpose sample requirements, as without them I would not have been able to conduct such a study. Finally, I would like to thank my family, as without them embarking on this Psychology Masters would not have been possible.

Abstract

Background information: The rising prevalence and severity of obesity has resulted in the disease being branded as a worldwide epidemic. Therefore, the need for developing more effective weight loss treatments is urgent. Holistic lifestyle interventions may produce significant weight loss in obese individuals.

Aim: To investigate whether a lifestyle intervention targeting several factors including emotions and stress had a positive impact on weight loss and maintenance. It was hypothesised that negative eating behaviours would significantly improve in the final month of treatment and they would also be maintained in the follow-up period of 6 months and that weight would reduce over the 3 time points.

Participants: 56 male and female (M =18, F= 38) participants aged 21-75 (M = 48.16, SD = 12.28) provided data from before and after the intervention and 28 participants agreed to take part in the follow up period.

Method: The study utilised a quantitative, longitudinal and non-experimental design. Participants completed the Laroque Obesity Questionnaire (LOQ) online in the clinic before and after the intervention. They were invited to re-take the LOQ questionnaire for the follow up period. Weight was measured across the three 3 time points. A repeated-measures ANOVA was used to test the hypotheses.

Results: Findings fully supported the first hypothesis. The second hypothesis was partly supported as although positive outcomes were not fully maintained in the follow up period they did not return to original baseline.

Conclusion: Obesity remains a major health concern, as those who do lose weight find maintaining it a challenge. This study can inform future studies by illustrating the effectiveness of certain weight loss programs. Schools could provide a class on healthy living as if children are educated from a young age perhaps the severity of obesity may not be so prevalent in adulthood. Findings may have been limited by sample size, the female dominant sample and the limited diversity in socio demographic status.

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What Impact does a Lifestyle Intervention have on Motivation, Behaviour, Stress, Emotions, Self-Image and Weight?

Introduction

Obesity can be defined as a health hazard which results from an abnormal accumulation of excess body fat, normally above 25% of the recommended body mass index (BMI) for men and 35% for women (Kalodner & Delucia, 1990; Addo, Addo & Ohemeng, 2016). Obesity is caused by the imbalance of energy consumed and the amount of energy expended by a person. Biological, behavioural, social and environmental factors contribute to this imbalance (Brauer et al. 2015; Rogerson, Soltani, & Copeland, 2016). Overeating is considered to be one of the hallmarks in the development of obesity (Ernst, Wilms, Thurnheer & Schultes, 2015).

Weight

BMI is an effective method commonly used to measure an individual's weight which is defined in kilograms divided by the square of their height in meters (Despres, Lemieux & Prud'homme, 2001). A BMI calculation can indicate if an individual is overweight or obese. If an individual's BMI ranges from 25 to 30 they are considered to be overweight (Karnani, McFerran & Mukhopadhyay, 2014). Furthermore, an individual is considered obese when their BMI exceeds 30. Lifestyle interventions are frequently used for those with a BMI of 25 - 40 kg (Barte et al, 2014).

The rising prevalence and severity of obesity in modern society has resulted in the disease being branded as a worldwide epidemic, therefore the urgency for developing more effective weight loss treatments is paramount (Vinkers, Adriaanse & Ridder, 2013; Stotland & Laroque, 2005). It is estimated that more than one billion adults worldwide are overweight, while a further 300 million are obese (Forman, Butryn, Manasee & Bradley, 2015). In addition there is a further estimation of 2.8 million people dying yearly from weight related difficulties (Addo, Addo & Ohemeng, 2016). It is expected that the prevalence of obesity will continue to increase as some estimates have predicted that in certain European countries, two out of three individuals will suffer from weight-related health impairments (Karnani, McFerran & Mukhopadhyay, 2014). Furthermore, by 2050 it is predicted that if the prevalence of obesity continues to grow at an almost exponential rate, the combined cost to society and the National Health Service will reach up to a staggering £50 billion per annum, which will have significant societal implications, as well as for the health system in general (Sniehotta, Simpson & Greaves, 2014).

Obesity is often accompanied by chronic illnesses, and an obese person is more likely to experience health concerns than those of healthy weight; often leading to premature death (Williams et al., 1996). Furthermore obesity results in an increased risk of a variety of serious afflictions for individuals, including type-2 diabetes, coronary heart disease, high blood pressure, high levels of cholesterol, stroke and respiratory problems, not to mention a series of mental illnesses such as depression (Kopelman, 2007; Rippe et al, 1998; Despres, Lemieux &Prud'homme, 2001).

Evidently, obesity poses a major health concern, however it also frequently burdens individuals with the inevitable stigmatisation of being lazy, greedy, and undisciplined (Puhl & Chelsea, 2010). Moreover, it is believed those with weight difficulties receive poorer job prospects which in turn contributes to a poorer quality of life (Carles et al., 2014; Monsivais, Martin, Suhrcke, Forouhi & Wareham, 2015; Deitel, 2003). It has been found that obese people may earn up to 18% less than those who are of healthy weight (Reichert, 2015; Rippe et al., 1998). The debilitating nature of the disease inevitably leads to those suffering from obesity needing to take more days off work, claiming more disability benefits, which might lead to a lack of motivation in the workforce (Rudoph, Wells, Weller & Baltes, 2009). The previous section has outlined the medical criteria for obesity and highlighted the possible costs to the individual, their health and to society. The section below will explore possible causes and maintaining factors of the disease that is so prevalent today.

Food Addiction

Blanchet and Fecteau (2014) suggested that foods that are rich in sugar or fat activate the same reward system in the brain, also triggered by substance abuse (Fraser, 2013). Animal research sheds a light on this notion that the consumption of sugar or fat leads to a release of dopamine in the brain, producing positive emotions (Fryan, Sears & Ranson, 2016). However, animal research does carry various limitations when compared to the more complex nature of humans. Supporting this finding, excessive food consumption and substance abuse are described as addictive behaviours as they share similar patterns of neural activation in the brain (Wang et al., 2004; Fraser, 2013). Comparative neuroimaging for obese individuals and substance

users revealed the same increased activity in regions of the brain related to cravings when they viewed food or substance cues (Gearhardt, Roberts & Ashe, 2013). In addition, obesity and addiction consistently overlap and the mutually reinforcing nature of their relationship results in cyclical behaviour patterns i.e. cravings, relapse and continuing to misuse/overeat despite negative outcomes (Barry, Clarke & Petry, 2009). Addiction interventions are a common method used to treat drug addicts and therefore the strongly correlated relationship could result in a possibility of using the same methods in an attempt to tackle the issue of obesity.

Stress

Stress can be defined as a state of emotional strain resulting from a challenging task (Britt, Adler & Bartone, 2011). Stress can have a negative effect on eating patterns such as overeating in response to a stressful event (Cox et al., 2012). Indeed, high stress levels are often linked to obesity, as stress-induced elevations in the cortisol, a steroid hormone allows for fat to gather, thus contributing to weight gain (Dortland et al., 2013). It is very common for individuals when stressed to find relief from this in food (Tan, Rul, Cow & Ellis, 2016).

Emotions and Behaviours

Emotions contribute a key role in all eating disorders as emotional eating often occurs from a response to a negative emotion such as sadness (Zeeck et al., 2011). Ganley (1989) reviewed the literature on emotional eating in cases of obesity where he found that obese people tend to consume excessive food when they are feeling

depressed, anxious, isolated or bored. This form of eating behaviour can be branded as 'reactive eating' meaning that the tendency to overeat stems from a reaction to an emotional cue (Zilberter, 2015). Not only do weight problems present physical health problems but they also present mental health concerns such as depression or anxiety (Dortland et al., 2013). Indeed it is estimated that obese individuals are 55% more likely to develop depression and 25% more inclined to develop anxiety (Starr, Fischer & Johnson, 2014). An overview of the meta-analysis and longitudinal studies conducted by Strien et al., (2016) found that depression and obesity are constantly linked, with obesity increasing the risk for depressive symptoms. Waring and colleagues (2014) further suggest that depression presents itself as a challenge in relation to obesity treatment as depression is often affiliated with low motivation, lack of commitment, negative thoughts, hunger, and insomnia all of which may impede a healthy lifestyle change.

Frayn, Sears and Ranson (2016) claim that mood and eating were associated as many individuals reported finding comfort in food, using it as a coping strategy to reduce negative emotions. Indeed Leeher and collagues (2015) further support this statement, as they understood emotional eating as a coping mechanism in response to emotional distress. Different types of emotions can either increase or decrease the need to comfort eat; for example depression can decrease appetite or boredom can increase appetite (Zeeck et al., 2011). Finally, guilt and shame are emotions consistently associated with weight gain; shame results from failure to meet expected standards in society, where as guilt can stem from regret of an act carried out that is deemed unfavorable by an individual (Pila et al., 2015). Feelings of guilt usually function as a punishment cue i.e. indulging in chocolate cake when trying to reduce

calorie intake, then later feeling guilty about it, and indulging further (Juijer & Boyce, 2014).

Self-Esteem

Self-esteem can be a predictor of happiness, quality of life, and positive mental health (Pila et al., 2015). Obese or overweight individuals tend to suffer from negative body image, particularly women as they constantly score higher on measures of body dissatisfaction compared to women of healthy body weights (Ginis, McEwan, Josse & Phillips, 2012). In more recent times Pila and colleagues (2015) also found that overweight or obese participants report negative body image and lower self-esteem levels when compared to healthy controls. Weight loss generally leads to improvement in positive self-image, however given that weight loss is an arduous task it is equally as important to improve one's self-esteem rather than reduction of adiposity itself (Colombo et al., 2014). In addition emerging evidence states that body acceptance can lead to positive weight loss outcomes (Murakami & Latner, 2015). However, if this theory was reinforced it may cause overweight individuals to abandon a healthy lifestyle, resulting in weight gain, poor mental and physical health.

Motivation

Motivation describes what moves people to carry out an action i.e. what drives people to initiate, terminate and pursue certain actions in particular situations (Markus, 2016). Whale, Gillison and Smith (2014) found that people are in control of their motivation, however environmental prompts in modern society are contributing

to lack of motivation in obese individuals. For example, there is an increase in cheap, convenient and highly calorific food choices that are readily available which has contributed to unhealthy eating habits of society as a whole, and of overweight and obese individuals in particular (Sallis & Glanz, 2012). Overweight and obese individuals consistently lack motivation to lose weight, which has an affect on their livelihood as the nature of obesity has numerous strains on the ability to carry out simple everyday tasks such as taking public transport to work or going for a walk (Deitel, 2003). The above section has explored how obesity is defined and the possible predisposing, precipitating and perpetuation factors of the disease. The following section will investigate weight loss maintenance and ways in which obesity has been targeted through different treatment interventions.

Weight Loss Maintenance

Maintaining weight loss is found to be a great challenge, as most patients who lose weight will commonly re-gain the weight within two to five years (Elfhag & Rossner, 2004). Research suggests that when participants are receiving treatment they will comply with weight loss procedures. However, once the treatment is complete and there is no clinic contact many participants start to regain their original weight (Brantley et al, 2014; Mardas, Mardas, Walkowiak & Boeing, 2014). Although many programs targeting weight loss display behavioural changes resulting in short term benefits (Upton et al., 2012), evidence for the long-term effectiveness of weight loss programs is limited (O'Neil et al., 2012). The ineffectiveness of long-term weight loss programs is considered to be related to decreased motivation, lack of time, and increased costs (Snethen, Broome & Cashin, 2006). In addition the

effectiveness of commercial slimming programs are limited by a high dropout rate and a lack of research utilising a longitudinal design with a randomised trial group to compare with a control group (Clark, 2006). In one review paper it was found that predictors of successful weight loss were due to less previous dieting and motivation and knowledge of how to maintain long-term weight loss is still limited (Halberstadt et al., 2016).

Stotland, Larocque and Sadikaj (2011) further support this view and concluded that the low probability of maintaining weight loss is related to the reality that many individuals are locked in dietary cycles, repeatedly beginning from scratch, losing and subsequently regaining the same weight. This has been referred to as yo-yo dieting. Yo-yo dieting is indicated where basal metabolism slows down by 5% to 20% during weight loss and returns back to normal 4 – 6 weeks after a weight-maintained diet is obtained (Larocque, 2002). Individuals with weight difficulties can be quick to shift blame of being overweight or obese on genetics, however research states that genetics only play a 25% role in obesity, which would suggest that environmental factors are three times more significant (Addo, Addo & Ohemeng, 2016; Larocque, 2002).

Fildes and colleagues (2015) set out to investigate why the probability of obese people attaining a normal body weight was limited. They analyzed 176 495 electronic health records from obese men and women. It was found that during a maximum of 9 years' follow-up period, 3483 attained a normal body weight. Their research findings noted that the chances of attaining or maintaining weight loss is low and community-based weight loss programs may have little effectiveness. Therefore research to develop modern more effective approaches to successful weight loss is

drastically needed. Strength to this piece of research is the longitudinal design using large population base with a follow up period.

Unfortunately, the inherently complex nature of obesity evades a simple solution, nevertheless intervention programmes that address lifestyle risk factors have been identified as the most effective procedure for treating weight concerns (Daumit et al., 2013). Moreover, maintaining weight loss has been linked with continuous treatment involving a consistent and reinforcement approach. Research highlights the negative impact being overweight or obese has on ones' quality of life, as being overweight has been often linked to poor self-image, depression, anxiety and negative emotions (Vieira et al., 2013; Colombo et al., 2014; Rippe et al., 1998). In addition, cross sectional research implies that both mental health disorders (e.g. depression, anxiety) and obesity are positively correlated, where this relationship was found to be more robust in women compared to men (Groh & Urbancic, 2015).

Weight Loss Interventions

An intervention is a deliberate course of action that focuses on a lifestyle change of an individual's thoughts, feelings and habits (Cavill & Ells, 2010). The primary goal of a lifestyle intervention is to confront the individual about their destructive eating behaviours in a non-threatening manner in order for the individual to see how their self-inflicted behaviour negatively affects them (Horn & Ryan, 2016; Jackicic et al., 2001). Hopkinson and Richardson (2015) found that weight loss interventions hold multi-components with the intention to improve clinical outcomes and the client's experience. Lifestyle interventions usually consist of counseling, frequent contact with clients, nutritional meal plans, information regarding

healthy/unhealthy eating behaviours, behavioural self-management strategies for weight loss, exercise, an individualist approach, motivational influences/restarts and finally a consistent approach of feedback, training and clinical support (Unwin, Shaw, Zimmet & Alberti, 2002).

Lasikiewicz, Myrissa, Hoyland and Lawton (2014) found that weight loss interventions are designed to reduce weight and ameliorate psychological well-being, where the success of such interventions are based on the amount of weight loss obtained. However, the implementations of interventions on a large scale can be rather expensive as they require a lot of time, support and organisation (Rothberg et al., 2014). On the other hand, lifestyle interventions provide an advantage as people learn to integrate healthy eating into their daily lives. This means it is often easier to maintain a healthy eating lifestyle after the intervention is completed (Openacker, Boen, Coorevits & Deleculse, 2008). Openacker and colleagues (2008) research on the effectiveness of a structured lifestyle and exercise intervention found that lifestyle programmes were more efficient in maintaining long-term benefits.

Belsky, Epel and Tomiyama (2014) found that weight loss interventions focusing solely on calorie restriction are often limited in their success rates as majority of the individuals cannot sustain healthy eating behaviours in long term benefits. However, Franz and associates (2007) researched weight loss clinical trials with a minimum of a 1 year follow- up, and found that weight-loss interventions involving both a reduced calorie diet and regular exercise produced weight loss. Although there can be slight regain, it is possible for weight loss to be maintained, along with the long-term benefits. Therefore perhaps calorie restriction alone as a lifestyle intervention is not sufficient for a long-term healthy lifestyle.

It is interesting to note that one study by Nurkkala and colleagues (2015) found that lifestyle interventions that combine nutritional counseling, exercise, and other elements have been found to generate weight loss and maintenance, as well as a positive outcome in eating habits. Moreover, certain eating behaviour traits, such as the restraining of food, have been correlated with successful weight loss and maintenance. This can be contrasted with uncontrolled and binge eating whereby weight loss was found to be unsuccessful. In this regard, emotional eating has been deemed to be a big contributor to unsuccessful weight loss (Stotland & Laroque, 2005; Gillison et al, 2015).

Wang and colleagues (2015) suggest that behavioural interventions can result in individuals obtaining an average weight loss of 10.4 kg in 6 months, and maintaining this weight loss over a prolonged period of time. Similarly an overview of the study from Mardas, Mardas, Walkowiak and Boeing (2014) provides some interesting oversights, the study investigated long-term weight status in re-gainers after a weight loss intervention. It found that a diet which involves self-regulation of dietary intake, coupled with behavioural therapy is instrumental in maintaining successful weight-loss. A limitation to this finding is the inconsistency in the follow-up period as it was spread over a two year time period.

Elghag and Rossner's (2004) research found that successful weight loss was linked to initial weight loss, reaching weight targets, having an active lifestyle, regular meal plans in place and control of excessive eating. Moreover in order for weight loss to be maintained one must be motivated, receive support, be provided with effective coping strategies and the ability to handle negative emotions or encounters. As the author previously noted food addiction and drug addiction share similar methods for recovery as above, therefore it is clear from extensive research that there

is a need for drastic change to ones environment and daily routine in order to succeed in such interventions (Volkow, Fowler & Wang, 2004). A consideration of the above factors will enable the constant weight cycling, which is an inherent by-product of obesity, to be treated more effectively.

In a related more recent study, Appelhans, French, Pagoto and Sherwood (2016) found the number one choice for obesity was a lifestyle intervention centered on calorie restriction, exercise and attitude change strategies. It was found that approximately 50% of obese participants engaging in a lifestyle intervention lost 5 to 10% body fat. The other half of the lifestyle intervention attendees did not respond to the treatment, as relapse was common. With this notion in mind they believed positive weight outcomes needed to involve strengthening current weight loss interventions to aid with temptation strategies as many lapses in overeating stem from temptation. Therefore, future weight loss interventions need to provide nutritional plans but also arm clients with effective temptation managing skills.

Lifestyle intervention strategies are critical in order to aid individuals to move away from their destructive eating habits (Adedoyin et al, 2014). Holistic approaches to weight loss study all aspects of the person, including emotional, physical and quality of life, by emphasizing on growth through expression. Individuals learn ways to cope and help stimulate positive thoughts for the mind and body that can implement a healthy lifestyle. In addition, research suggests that weight loss can have a positive effect on one's quality of life (Raaijmakers, Powels, Berghuis & Nienhujis, 2015). Holistic interventions can aid the development of positive self-esteem and confidence (Adedoyin et al, 2014). However, clients may be hesitant to engage in behaviour therapy as it can be uncomfortable and bring back negative emotions.

Stead and colleagues (2015) set out to explore why some people were more successful at a lifestyle intervention than others. They employed quantitative and qualitative analysis comparing psychological characteristics and lifestyle changes in those who met their target weight loss and those who did not. Interestingly, it was established that success in lifestyle interventions was related to the degree with which the program engaged with the individual and was tailored to their particular needs, while also providing likely ingredients to build on success, such as applying a strategy to deal with relapse triggers or how to avoid cravings. With regard to the above literature it is interesting to note that calorie restriction or exercise increase alone is not enough to lose weight and maintain it, therefore perhaps in order for weight loss interventions to be a success it is important to embark on a more holistic approach targeting several factors contributing to weight gain as opposed to the reduction of adiposity itself.

Contrary to the above findings Vinkers, Adriaanse and Ridder (2013) found that weight loss interventions vary in their success rates regardless of the type of weight management intervention. Moreover they found a high number of drop outs as their reports indicating rates between 63 - 77.3%. Drop-out rates can be defined as a failure to complete the program. The reasons for drop-outs have been associated with age, gender, occupation, low levels of education, unrealistic weight loss goals, prior weight loss attempts, diet, and financial issues, as well as psychological and physiological health i.e. depression, anxiety, self-esteem (Colombo et al., 2014). In support of these findings, Colombo and colleagues (2014) have found that abnormal disorders such as depression and anxiety, combined with a failure to reach weight-loss goals within the first month of treatment are major contributory factors to these high

drop-out rates, therefore future weight loss programmes must aim to target these factors in their treatment. As such, drop-out rates are a serious concern for weight loss interventions, varying from 10% to more than 80% depending on the type of treatment program (Sawamoto et al., 2016).

It is interesting to note that a study from Ghana investigating weight loss interventions and their success rates, found that 50% of participants did not complete the programme due to unsustainability. For example, they could not restrict their carbohydrate intake for a long period of time, while 15% quit because lack of motivation, 10% due to boredom, 10% due to not achieving weight loss goals and 15% for other reasons (Addo, Addo & Ohemeng, 2016). A limitation to this finding is that it lacks generalisability as the representation is solely from African subjects. To conclude, high dropout rates and low enrolment rates (new clients) have limited the effectiveness of weight loss programmes in being able to incorporate them into real life settings (Rutten et al., 2014).

The disturbing trend of increasing obesity rates in recent times will inevitably lead to higher health care costs in the future. Indeed, lifestyle interventions aid individuals to alter their deep-rooted issues sabotaging weight loss and provide them with the support needed to change their behaviours in order to achieve weight loss goals (Skolnik & Horn, 2016). Despite this finding research investigating the effectiveness of weight loss interventions is limited in assessing psychological factors such as stress, emotions, motivation, behaviours and self-esteem associated with weight gain. In this regard, the majority of studies targeting weight difficulties use qualitative and cross sectional designs, thus limiting the ability to explore how an individual's perceptions of barriers to a healthy lifestyle can change over the period of a behavioural intervention. It has been stated that future research should focus on

making weight loss programs more practical to ensure weight loss can be maintained once the individuals have to continue their weight loss journey unsupervised. Moreover, findings constantly stress the need for longitudinal studies in order to aid future weight loss treatments, thus the rationale for the present study.

Aims & Hypotheses

The aim of this study is to investigate the effectiveness of a lifestyle intervention on barriers to weight loss and poor mental health. Emerging evidence states that there can be several factors to weight gain, lack of weight loss maintenance and poor mental health as a result. Therefore this study aims to explore several factors associated with weight difficulties and psychological well-being. These include behaviours, emotions, motivation, self-image, stress and weight. The study will specifically explore three time periods in order to measure weight loss accurately. The time periods are as follows: before treatment, after treatment and a six month follow up period of no treatment.

It is hypothesised that participants' unhealthy eating behaviours, low motivation, poor self-image, high stress levels, negative emotions and BMI status will have significantly improved after, compared to before completing a lifestyle therapy programme for obesity. Moreover, it is hypothesised that these positive outcomes will be maintained to some degree, in the six month follow up period of no clinical contact.

Method

Design

The study employed a quantitative, longitudinal and non-experimental design. The independent variable was the three time points (1) time one: first month of treatment (2) time two: last month of treatment and (3) time three: a follow-up period of 6 months. The primary outcome (dependent variable) was weight change measured in BMI between the first two time points and then between the second and third time point. Additional dependent variables included: (2) eating behaviours (3) motivation (4) self-image (5) stress and (6) emotions.

Participants

A purpose sample was used to meet the required audience as the inclusion criteria required individuals to be attending a motivation weight loss intervention for being overweight or obese. Moreover participants were required to be over the age of 16, either male or female, English speaking in order to be able to communicate with the health advisors and consent was needed from the clients to take part in the follow-up period. The study recruited 56 participants at baseline (time 1 point) (female. n = 38, male. n = 18) aged 21 - 75 (M = 48.16, SD = 12.28). Data for the first and last month of treatment was previously collected by the clinic in order to measure weight loss effectively. For the follow up period (time 3), which was 6 months after participants completed the programme, participants were recruited to re-take the

questionnaire. Out of the 56 participants for the sample, 28 agreed to re-take the questionnaire for the follow up period.

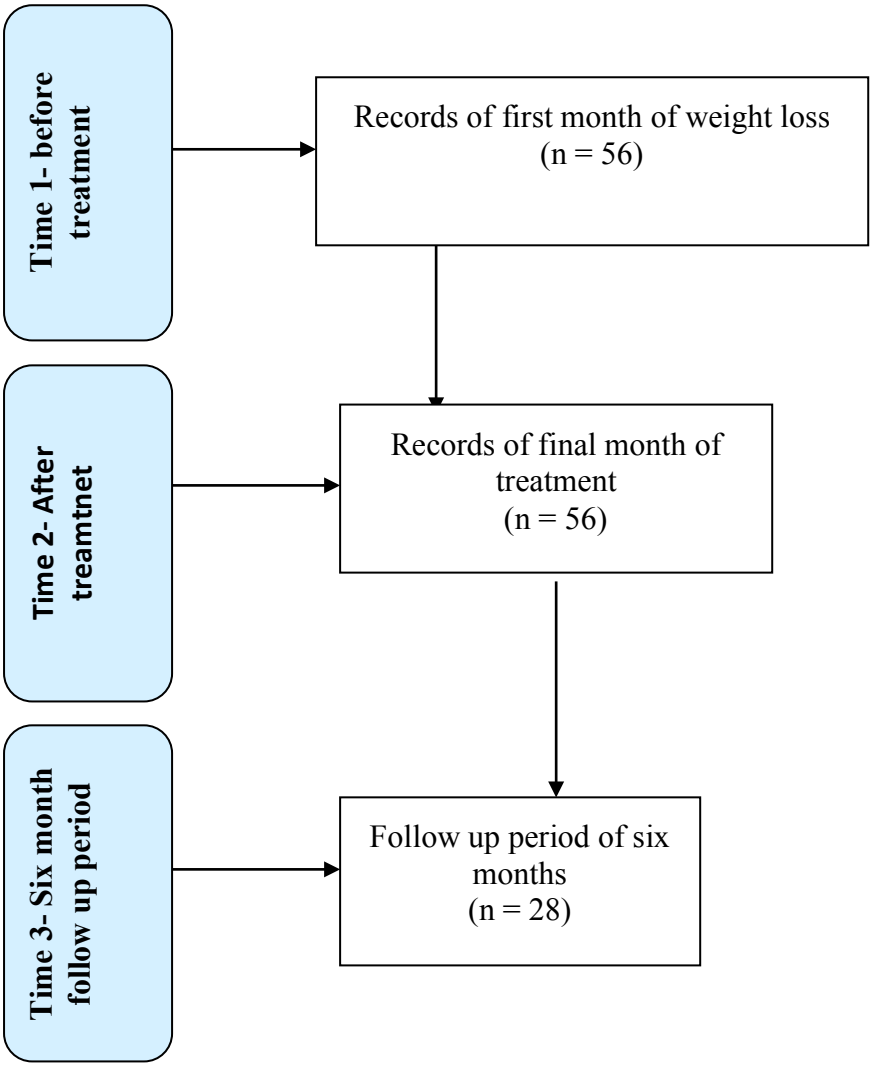


Figure 1: PRISMA diagram of weight loss participants

Materials and Measures

Weight

BMI was used to measure overweight and obesity where a persons weight was defined in kilograms divided by the square of their height in meters (Despres,

Lemieux & Prud'homme, 2001). It is suggested that a BMI between 25 and 30 is overweight and that a BMI at 30 or over is considered obese (Karnani, McFerran & Mukhopadhyay, 2014). Participants' height and weight were recorded at the clinic and measured by a professional working at the clinic.

Participants were asked to complete the Laroque Obesity Questionnaire (LOQ) (Larocque & Stotland, 2000; Stotland & Laroque, 2003) See Appendix A). The LOQ is an online assessment, currently used in a motivation weight management clinic in Ireland. It includes four sub-scales measuring uncontrolled eating (LOQ-UE), stress responses (LOQ-SR), Depression (LOQ-D) and Perfectionism (LOQ-P) with an extra two scales added by the clinic which include motivation and self-image. These dimensions provide a broad overview of both eating behaviours and psychological states with potential relevance for weight control.

The uncontrolled eating includes an 11-item scale that explores a range of eating patterns, including emotional eating, urges to indulge, eating in response to a situation and eating styles i.e. 'during the last month, have you had binges, urge to eat or have eaten without control'. Stress response is a 6-item scale that measures stress responses for example, 'are you quite anxious over the way people feel about you'. Depression is a 7-item scale measures depressive feeling i.e. 'I feel inferior to other people and I rarely achieve anything'. Perfectionism includes a 7item scale measuring tendencies towards perfectionism i.e. 'I demand a lot from myself and everything I do must be perfect'. The last few items are measured in relation to exercise habits, smoking, alcohol, caffeine, purging and weight control motivation. All items were answered on a 4-point rating scale ranging from 0-4. Participants were asked to report their age and gender. Unlike other scales, the higher the scores

on the scales indicated improvement was obtained and low scores meant improvement was needed, for example, (To improve = 0-70, normal = 71-90, excellent = 91-100)(See appendix I).

Clinical Setting and Lifestyle Intervention

The Motivation Weight Management clinic is a private, non-state sector weight loss clinic in Ireland, which offers clients a 20-month treatment course to help with their weight loss goals and improve the psychological factors underlying their weight difficulties such as stress or depression. This clinic takes a more holistic intervention style by focusing on weight struggler's lifestyle apposed to just weight loss itself. The first consultation at the clinic involves a health advisor listening to why the client has decided to enroll in the weight loss program and what they would like to achieve from the programme. Specifically, what their weight loss goals entail and what may be stopping them from achieving them. At the start of treatment clients are given a healthy eating plan booklet, a daily food diary, weekly motivational handouts to encourage positive eating behaviours and motivational tools such as CD'S/books 'be thin through motivation' and 'healthy body healthy mind' to help stimulate positive emotions (See appendix F & G).

A consistent approach is reinforced in the weekly consultations where clients BMI'S are taken, they are given a brief form of behaviour therapy and encouraged to express any difficulties they may have during the weight loss procedure. The health advisor fills out a form each week in order to track weight loss and the client's wellbeing (See appendix C & E). In addition a healthy eating plan is drawn up with

the client to help suit their lifestyle in order for sustainability. The intervention at the clinic requires clients to re-take the LOQ questionnaire once a month in order to be consistent in monitoring their weight loss approach.

Ethical approval

This project received full ethical approval from the Psychology Ethics committee and the Regent's University Ethics Committee (See appendix L). It was important to also receive approval from the motivation weight loss clinic in order to carry out the study due to the sensitive nature of the study. As the author had access to participants' data it was important to respect the clients information and use solely for the purpose of this study. A letter was received in March from the clinic agreeing for the author to carry out the research (See appendix B).

Procedure

Once ethical approval was given, the Author and the clinic staff came to an arranged date to collect the data previously collected by the clinic. On June 14th and June 15th 2016, the data was retrieved from the clinic for the first month of treatment and the last month. The author received data from 56 participants who had completed the programme. For the time three period (follow-up), participants were recruited by the author via telephone or email depending on the contact details they had provided at the time of treatment to re-take the questionnaire. Therefore, out of the original cohort of 56 participants a smaller sample, of 28 was obtained for the follow-up element of the study. Participants were asked to re-take the questionnaire by logging

into their motivation account online. In addition they were provided with an information sheet, consent form and de-brief form (See appendix O, M & N) via post with a stamped addressed envelope to return the consent forms. The author ensured that the participants knew the study data were completely anonymous and the information will be used solely for the purpose of this research project.

Data Analysis

Data analysis was performed using SPSS v.22 (IBM SPSS Statistics for Macintosh, Version 22.0). The threshold for significance was set at 5%. Tests of normality were run in order to ensure repeated measures ANOVA was an appropriate analysis. As assumptions of normality were met a within-subjects design using repeated measures ANOVA was used. A Last Observation Carried Forward was used in order to give power to the sample (Streiner & Gedder, 2001). Indeed, the final sample for time 3 is the full sample (n =56).

Results

The repeated measures ANOVA was used to investigate the measures of behaviour, motivation, stress, self-image, emotions and BMI at time 1 (prior to the intervention), time 2 (following the intervention) and time 3 (six-month follow up period). To avoid the risk of type 1 error a Bonforoni correction post hoc was used. Mauchly's test was significant for all comparisons, therefore assumptions of Sphericity were not met and the data was corrected using Greenhouse-Geisser adjustment. Pairwise comparison was used to investigate the differences in the 3 time periods (See table 2). Mean and standard deviation statistics for the scales are shown in (Table 1). Figure 1 displays the means and standard deviations in a chart over the 3 time periods.

Table 1

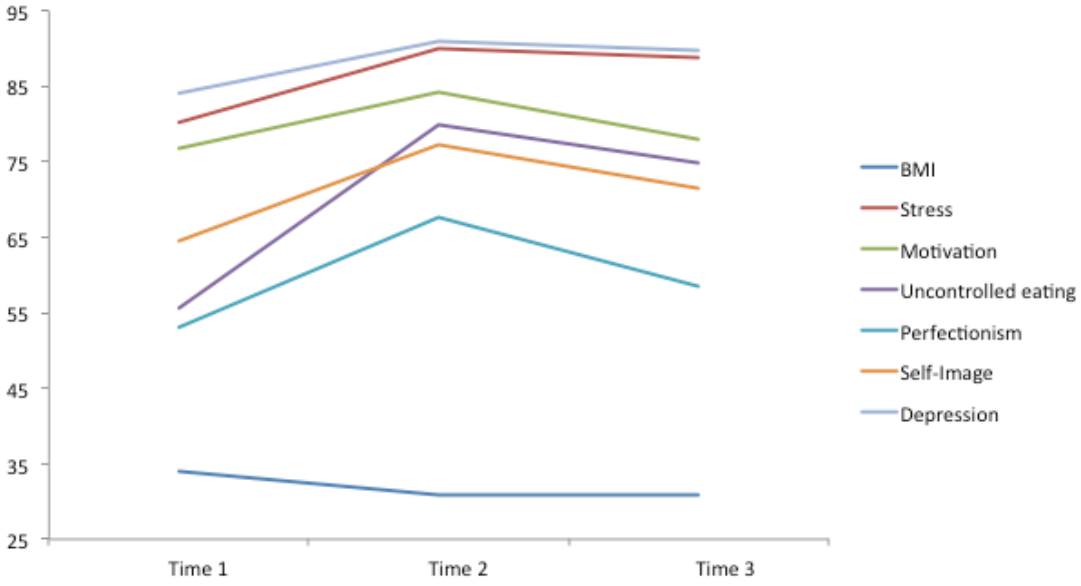
Descriptive statistics for each group, with means and standard deviations

Variable	**Time 1**		**Time 2**		**Time 3**	
	M	**SD**	**M**	**SD**	**M**	**SD**
BMI	34.07	5.79	30.76	5.12	30.89	5.08
Stress	80.19	15.03	89.89	13.18	88.87	13.04
Motivation	76.73	12.16	84.21	13.41	77.83	18.71
Uncontrolled eating	55.55	14.70	79.91	13.23	74.76	15.90
Perfectionism	53.07	20.90	67.64	23.34	58.51	22.94
Self-Image	64.44	17.87	77.19	14.37	71.57	15.93
Depression	84.05	12.58	90.83	11.72	89.76	13.45

Note. M = Mean; *SD* = Standard Deviation.

Figure 1.

Mean scores of BMI, Stress, Motivation, Uncontrolled eating, Perfectionism, Self-Image and Depression at each of the three time points (1) prior intervention (2) post intervention and (3) a follow-up of 6 months.



Inferential Statistics

The repeated measures ANOVA analysis indicated that there was a main effect of time on BMI [F (82.6, 69.8) = 82.6, $p < .001$]. There was a significant improvement in BMI in time 2 compared to time 1 ($p < .001$) which was also maintained in the follow up period as there was no difference in BMI between time 2 and 3 (p=1.00) which can be seen below in (Table 2).

There was a main effect of time on stress [F (1.4, 81.9) = 11.5, $p < .001$]. There was a significant improvement in stress in time 2 compared to time 1 ($p < .001$)

and this improvement was maintained as there was no statistical difference in stress between time 2 and 3 (p=1.00) (Table 2).

There was a main effect of time on motivation [F (1.6, 88.9) = 5.4, p < .05]. There was a significant improvement in motivation at time 2 compared to time 1 (p < .05). However, as table 1 indicates that from time 2 to time 3 motivation decreased so much it went back to original baseline (p=1.00) (Table 2).

There was a main effect of time on uncontrolled eating [F (1.4, 81.9) = 59.6, p<.001]. There was a significant improvement in Uncontrolled eating at time 2 compared to time 1 (p < .001). Interestingly, this improvement was partly maintained as uncontrolled eating decreased in time 3 from time 2 (p<. 05) (Table 2).

There was a main effect of time on perfectionism [F (1.7, 9.7) = 9.1, p <. 001]. There was a significant improvement in perfectionism in time 2 compared to time 1 (p<. 001), however as seen in table 1 this improvement regrettably decreased as it returned to original time 1 (p=. 537) (Table 2).

There was a main effect of time on self-image [F (1.7, 94.0) = 13.1, p < .001]. There was a significant improvement in Self-Image in time 2 compared to time 1 (p< .001) however, this improvement was only partly maintained as the positive outcomes in time 2 were not maintained in time 3 (p=1.00) (Table 2).

Lastly, there was a main effect of time on depression [F (1.6, 92.4) = 8.6 p < .05]. There was a significant improvement in depression in time 2 compared to time 1

(p<. 001) and this improvement was maintained, as table 1 shows that there was no statistical difference in depression between time 2 and 3 (p=1.00) (Table 2)

Table 2.

LSD post-hoc analysis using Bonferroni shows the change of intervention over the three time period first month of programme (time 1), final month of programme (time 2) and a follow-up period (time 3).

Condition	**Time**		**Mean difference (I-J)**	**Std. Error**	**Sig.[b]**
BMI	1	2	3.304*	.349	<. 001
	2	3	-.125	.144	1.000
	3	1	-3.179*	.334	<. 001
Stress	1	2	-9.696*	2.337	<. 001
	2	3	1.108	1.489	1.000
	3	1	8.679*	2.762	.006
Motivation	1	2	-7842*	2.246	.005
	2	3	6.375*	2.030	.008
	3	1	1.107	2.983	1.000
Uncontrolled eating	1	2	-24.357*	2.471	<.001
	2	3	5.143*	1.574	.006
	3	1	19.214*	2.826	< .001

Perfectionism	1	2	-14.571*	3.241	<. 001
	2	3	9.125*	3.006	.011
	3	1	5.446	4.000	.537
Depression	1	2	-6.786*	1.385	<. 001
	2	3	1.071	1.769	1.000
	3	1	5.714*	2.064	0.23
Self-Image	1	2	-12.750*	2.167	<. 001
	2	3	5.625*	2.275	.050
	3	1	7.125	2.958	.058

*. The mean difference is significant at the .05 level.

Discussion

This study is unique in examining whether a lifestyle intervention that targets several factors including emotions, self-image or motivation has a positive impact on both the outcome of an individual's weight loss goals and on their psychological well-being. Firstly, it was hypothesised that the completion of a lifestyle intervention would significantly improve factors such as emotions, self-image, stress, eating behaviours, and motivation as well as the BMI of individuals when compared to the original baseline. Secondly, it was predicted that these positive outcomes would be maintained throughout a follow-up period of 6 months.

Findings fully supported the first hypothesis as ANOVA and post-hoc analysis revealed a significant difference between all of the dependent variables in the mean scores from time 1 to time 2. The second hypothesis was partly supported as majority of the participants' did not continue to maintain all of these positive outcomes in the follow-up period from time 2. However, these participants did not return to original baseline. Therefore, although positive outcomes were not fully maintained, there was an improvement in comparison to baseline. As this is the case, more research into effective treatment methods for obesity and weight loss maintenance is necessary.

BMI

Although weight loss maintenance is deemed a greater challenge than weight loss itself (Yacout & McMaho, 2015), this study found that participants' maintained weight loss to a certain extent as there were no reversions to the original baseline. It

is arguable that the broad basis of a lifestyle intervention, in the sense that it targets several factors (stress, emotions etc.), may explain how BMI was maintained. Indeed, it may be the case that the effectiveness of targeting the underlying issues of obesity can be attributed to changing the entire lifestyle of weight strugglers. This can be contrasted with treatments that focus solely on weight loss, these narrow approaches often lead to an 'all-or-nothing' mentality and it can be difficult for participants to positively react to inevitable setbacks in their weight loss journey. It is clear that a broader approach can provide individuals with the basis to combat the range of complexities which may arise in everyday life. As such, lifestyle interventions are more suited to ensuring a long-term solution for overweight individuals than 'fad diets' which are often unsustainable in the long term.

Piatt, Seidel, Powell and Zgibor (2016) further support this as they found a positive correlation between lifestyle interventions and weight loss maintenance if the patient is aware of the effect decision-making has on their health. Indeed, there is an abundance of research and academic support in favour of such interventions. Allen, Cohn and Aherm (2015) suggest that behavioural weight loss programmes should be a first-line choice as a treatment for obesity. In addition, Haber, Atti, Gerber and Waseem (2015) have also outlined some advantages of obesity interventions including improved quality of life and decreased health risks at an individual level, as well as the broader benefits to society as a whole and they therefore concluded that such tactics are well worth the investment in the long term.

Eating Behaviours

This study found that the eating behaviours of participants significantly improved post treatment. Although there was a slight regression in the follow-up period, participants did not return to their status at time 1 which indicates an overall improvement. This finding may stem from participants engaging in behaviour therapy and learning about healthy eating behaviours as Young and colleagues (2015) suggest that behaviour change is a key component in successful weight loss and maintenance. The findings of the current studies findings are in line with the research of Appelhans, French, Pagoto and Sherwood (2016) which indicated that in order to improve eating behaviours it is vital to arm individuals with strategies to help them avoid habitual and unhealthy food choices which hinder their weight loss goals (Forman, Butryn, Manasse & Bradley, 2015). It may be the case that prior to the intervention participants lacked the knowledge relating to nutrition and healthy eating which would aid them in achieving their weight loss goals. For example, a participant may have considered a chocolate rice cake to be a front line choice as a healthy snack, unaware that this is an ill-advised and unhealthy choice for an obese person. Indeed, the benefits of the education aspect of the lifestyle intervention are clearly represented in the eating behaviours of participants post-treatment. In sum, it has been found that proper education about healthy eating can be translated into ingrained knowledge and healthier eating behaviours, which in turn can be translated into weight loss and maintenance.

Motivation

Contradictory to the above findings, participants' motivation significantly improved after treatment, however this improvement was not maintained in the follow-up period and participants returned to their original baseline. This finding supports a wide body of previous literature regarding the weakening relationship between motivation in weight loss maintenance (Whale, Gillison & Smith, 2014; Schelling, Munsch, Meyer & Margraf, 2011). Numerous previous authors have found that weight strugglers consistently lack motivation to continue to lose weight as maintaining weight loss is a great challenge (Waring et al., 2014; Grave, Suppini, Calugi & Marchesini, 2006). Moreover, Snethen, Broome & Cashin (2006) suggest that the ineffectiveness of long-term weight loss from decreased motivation is a consequence of the reality that individuals are no longer under supervision. The finding's of the current study are interesting and may clarify the more complex relationship between motivation and weight loss maintenance than previously thought. Further research is needed in order to discover the underpinnings of what motivates weight strugglers. As motivation is an internal factor, therefore the impact of lifestyle interventions is limited as people need to have control of their habits. Gillison, Seibire and Stange (2012) also support the proposition that in order for individuals' to remain motivated they must believe they have a choice and that they are in control of their actions. Rotter's social learning theory implies that individuals must believe they have control over their lives (Anastasiou, Fappa, Karfopoulou, Gkza &Yannakoulia, 2015). It is important to remember that keeping motivated in everyday situations such as work or fitness can be an arduous task. Owing to the reality that maintaining a healthy weight requires a continuously health-conscious

lifestyle, an understanding of the complex relationship between motivation and weight loss should certainly be a crucial and integral aspect of any weight loss program.

Self-Image

It was found that participants' self-image significantly improved after treatment and this improvement was partly maintained as it did not return to time 1. This finding is in line with Annesi and Porter's (2015) research which suggests that enhanced self-image can stem from positive outcomes in obesity interventions as participants learn to change their perception of themselves once they have completed weight loss treatment. In addition, it has been found that perceived changes to the body are equally as important as actual physical changes in terms of ameliorating body image (Ginis, McEwan, Josse & Phillips, 2012). Being self-conscious is a universal aspect of human nature and it is an experience we all grapple with at one point or another and is clearly not limited to individuals who struggle with their weight. Taking anorexia as an example, which is at the opposite end of the spectrum to obesity in terms of physical appearance, often results in similar psychological symptoms and in particular, similar patterns of body-hatred and negative self-image (Bjorck, Clinton, Sohlberg & Norring, 2007).

Perfectionism

The study also revealed that perfectionism as a behavioural trait was more prevalent and pronounced in participants post treatment. However, in line with the

other findings, this change was only partly maintained and the follow-up period revealed significant decreases in the trait. This finding can be supported in the relevant body of academic literature as perfectionism consistently remains elevated on completion of weight loss treatment. However, integral to maintaining perfectionist behaviour is completion of fulfillment of weight loss goals. It also bears remembering that perfectionism is centered on exceeding high expectations and the failure to do so results in negative self-evaluation (Placido, Soares, Pereira & Macedo, 2015). Perfectionists are all-or-nothing thinkers, thought processes are often based on an unachievable ultimatum i.e. 'if I do not keep losing weight then I am a failure', this is when relapse occurs and individuals return to an unhealthy lifestyle (Lethbridge, Watson, Egan, Street & Nathan, 2011). This notion bears remembering as it indicates that perfectionism remains prominent after treatment as weight strugglers are in a constant cycle of weight loss and regain. A key element of perfectionism as a behavioural trait is self-judgment and overweight individuals frequently engage in body shaming of themselves and others (Gilbert, Durrant & McEwan, 2006). Although perfectionism and determination can be hugely beneficial, there is clearly a potential downside in that such traits can trigger and reinforce the negative behaviours described above which can in turn impact negatively on weight loss goals and on weight maintenance in particular. It is interesting to note that despite receiving treatment to combat negative body image, individuals with body hatred have been found to engage in excessive calorie intake during weight loss procedures, arguably this may have been the case in the current sample (Mensinger, Calogero & Tylka, 2016). These findings would indicate the importance of tempering participant's expectations and ensuring they understand that nothing is perfect. In addition, a further focus should be placed on improving reactions to negative outcomes so as to

avoid binge eating where individuals have a minor setback and blame themselves. Perfectionism will inherently remain elevated in everyday life as the desire for success and to strive towards excellence are part of human nature. However, although participants should clearly be encouraged to strive for success, they must also be made aware that there will be bumps along the road and be given the tools to create a mentality that will tackle these difficulties. Such a mentality will be necessary to avoid slight setbacks leading to significant ones such as retreating to old eating habits and binge eating.

Stress

As expected, stress levels significantly improved after treatment and this improvement was maintained in the follow-up period. This finding is in line with that of Johannessen and Berntsen (2013) who concluded that weight loss can reduce the symptoms of stress. Contrary to the author's finding, an overview of the research by Ibrahim, Therale, Karkoff and Gluk (2016) indicated a weak relationship between stress and weight loss during a one-year follow up period. Therefore, it is possible that the length of the current follow-up (6 months) was not sufficient to monitor stress change over a prolonged period of time.

Depression

In terms of depression, the study found that participants' depressive symptoms significantly improved after treatment and this result was maintained in the follow-up period. The prevalence of depression in individuals seeking weight loss treatment is

concerning as research has indicated the high frequency of weight regain on completion of such interventions. In this regard, those individuals are clearly at a high risk of regaining the weight which may retrigger depressive symptoms (Ludman et al., 2009; Strein et al, 2016; Starr, Fischer, Johnson, 2014). Indeed, depressive symptoms have been positively correlated with weight gain as lifestyles that focus on unhealthy eating, smoking, and access alcohol consumption can impact ones' quality of life both socially and physically (Wit, Straten, Lamers, Cuijpers & Penninx, 2015).

Limitations and Future Research

Although the first hypothesis has been fully supported and the second partially supported, various limitations in the study must be taken into account.

As only 28 individuals participated in the follow-up period it is therefore unlikely that the sample would be representative of the general effectiveness of a lifestyle intervention upon completion of the treatment. Furthermore, the sample was predominantly female (over half the respondents were female (n=38)). Therefore, the sample was unequal in terms of gender. A further limitation could be regarded as the lack of dropouts in the study which can be contrasted with statistical drop out rates in other programmes. Indeed, the majority of weight loss interventions have several dropouts (Sawamoto et al., 2016). The lack of dropouts may be owing to the reality that clients were paying high fees for the treatment. Additionally, participants may not have are answered the questionnaire entirely truthfully to avoid scoring low on the measures as there may have been a desire by participants to score high (Mortel, 2008).

Another limitation to the study was the unknown sociodemographic factors such as race, education level, financial status, and the duration of their weight difficulties. These factors can be useful in gaining a deeper understanding of weight loss and the psychological process that correlates to such weight loss (Boo, 2013). Furthermore, the possible reasons for the weight gain in the first place and it's maintenance factors. The current study lacked this knowledge and this deficiency may have impacted the results.

Moreover, it is arguable that the social class of participants in the current sample should be taken into account. Indeed, owing to the reality that the study focuses on a fee-paying weight loss clinic, it is likely that the participants are predominantly upper-middle class. As such, it is fair to suppose that the target groups is not representative of a sufficiently broad cross-section of the general population to fully prove a hypothesis on the impact of lifestyle interventions on weight loss and maintenance. Another limitation is the computer-based monitoring of weight and psychological well-being. Such monitoring requires individuals to rely on human memory, which is inherently unreliable, and is also time consuming to log into a computer. Interestingly, Wharton, Johnston, Cunningham and Sterner (2014) found that the younger generation are more prone to use mobile phones for weight loss tracking interventions compared to web-based equipment.

Future research is needed to expand on the conclusions of the current study. In particular, it would be beneficial to utilise a longer follow up period coupled with a more diverse and larger sample in order to assess how different cultures react to lifestyle interventions. It has been previously discussed how African individuals living in Ghana undergoing a lifestyle intervention struggle considering the type of poor environment they are exposed to (Addo, Addo & Ohemeng, 2016).

It is evident that weight stigmataisation affects an individual's desire to lose weight, therefore incorporating coping strategies to deal with these negative stereotypes about obesity or body shame into a lifestyle intervention would beneficial. Mensinger, Calogero and Tylka (2016) support this statement as they found incorporating information about weight stigma would enhance the outcomes of lifestyle interventions, particularly in terms of improved health and overall life satisfaction. Therefore, future research should focus on implementing this component into a lifestyle intervention in order to enhance the efficacy of the treatment.

Implications and Applications

Taking into account the influx of technology in the 21st Century it may be the case that face-to-face lifestyle interventions are outdated. In the modern world there is an app for almost everything and it is therefore arguable that a well-formulated, weight loss tracker app may be the most effective means of achieving weight loss and maintenance in the 'Internet Age'. The use of smartphones is becoming an increasing trend in the drive to promote healthy lifestyles, this is complemented by the convenience and efficacy of apps in this regard. Indeed, mobile phones are a necessity for every day communication and living. Apps such as 'Calorie Counter' and 'Diet Tracker' had amassed a user-base of over 9 million users as of 2014, and this trend is expected to increase further as technology continues to expand (Hingle & Patrick, 2015). In relation to this Tang, Abrham, Stamp and Geraves (2015) further recognise that there is a need for interventions targeting daily lifestyle choices and they suggest the idea of a weight loss app that is easy to use and has personalised features allowing the individual to monitor their goals and calorie intake. A study

comparing the impact of face to face interventions compared to online interventions could be useful for future research.

It may be of interest to consider the fact that social media has become a mainstream channel of communication (Dahl, Hales, McGreivey, 2016). In this regard, delivering lifestyle interventions through social media may reduce barriers such as expenses, time and effort. Furthermore, using social media to post engaging information regarding weight transformation, motivational posts, recipe ideas, exercise regimes or trending sports gear can aid the desire to engage in lifestyle interventions.

Festinger's (1954) social comparison theory found that individuals are easily socially influenced and often engage in comparative behaviour with others. Festinger's theory is fitting in terms of the relationship between social media and self-evaluation as it revealed that individuals often compare their own achievements or behaviours to others. An example of this can involve a weight struggler posting a weight transformation picture, resulting in others comparing their own weight loss journey to theirs. It may be of interest for future treatments to recognise that social media can now act as a platform of social support during lifestyle interventions or conversely lead to social bullying.

On another note, it is alarming to consider the common trend of childhood obesity continuing to develop into adulthood and such alarm is exacerbated by the prevalence of both childhood and adult obesity in modern society (Hart, Herriot, Bishop & Truby, 2003). Health education programmes aim to provide knowledge about healthy living and nutrition, and correct eating behaviours (Shih, Liu, Liao & Osborne, 2016). It bears remembering that physical education is mandatory in school education, and the author is under the strong belief that a health education lesson

should also be mandatory in schools. If children are educated from a young age about the impact of obesity on their physical and mental wellbeing and the impact on society as a whole, obesity may not be as prevalent in the future as it is today. In modern society, it is common for adults to be completely uneducated about nutrition and healthy living. Coupled with the abundance of processed, unhealthy foods currently available on supermarket shelves, this ignorance has likely contributed to the increased prevalence of childhood obesity as the primary caregivers implementing the food choices of children are unaware of the dangers presented by maintaining an unhealthy lifestyle.

Conclusion

In conclusion, this study set out with two main hypotheses. Firstly, it was hypothesised that a broad approach to weight loss, which targeted not only the physical aspects but also the underlying psychological factors which contribute to obesity and failure to maintain a healthy lifestyle, would be more effective than weight loss treatments which focus solely on the physical side of things. The study sought to investigate the effect of a lifestyle intervention on weight loss and consequently how such an approach can positively impact on various psychological factors such as emotions, self-image, stress, eating behaviours, and motivation. In this regard it was thought that the positive impact on these psychological and physical factors would be mutually reinforcing and therefore lead to a healthier lifestyle that could be sustainable in the long term. Secondly, it sought to investigate a second hypothesis, namely whether the impact of a lifestyle intervention on the aforementioned factors would be maintained after a follow-up period of six months. In relation to the first, it was found that a lifestyle intervention had a significantly

positive impact on both the BMI of participants and on the various psychological factors. In relation to the second, the findings lead to the general consensus that although the improvements which resulted from the intervention did not continue to gain traction in the follow up-period, participants generally did not return to the original baseline and as such weight loss and the other results were partially maintained.

The BMI of individuals was maintained in the follow-up treatment and it is arguable that this can be attributed to the well-rounded mentality of participants post treatment owing to the behavioural therapy which was an important aspect of the programme. The programme ensured that participants were educated on all aspects of healthy eating and the impact of their everyday decisions on their health and well-being. This gave individuals an enhanced awareness and feeling of regaining control which has been proven to contribute to better decisions. It also provided individuals with the tools and strategies to combat the difficulties which could arise in everyday life and ensured that small setbacks did not mean that participants returned to their old ways. In summary, the broad approach inherent in a lifestyle intervention lead to a greater awareness of the key elements of a healthy lifestyle. In turn, this awareness lead to significantly improved eating behaviours that ensured participants maintained a healthier BMI.

However, the study did reveal that participants did not maintain the same levels of motivation in the follow up period with many returning to their baseline. Indeed, the study also revealed a pronounced level of perfectionism in the participants and it is arguable that these results are correlated. As alluded to earlier, it will be necessary to make individuals understand that there will be setbacks along the way and that developing methods to cope with these may be important to successful

outcomes. This will be essential in ensuring that participants maintain their weight loss and do not lose motivation when things get tough. A possible solution could be group discussions so that participants understand that they are not alone and that others are facing the same difficulties.

Finally, the study revealed an improvement in other factors including self-image, stress, and depression. In line with the majority of the findings, although improvements of these factors did not continue in the follow up period, participants did not return to the original baseline. These improvements are clearly correlated to maintenance of weight loss and BMI and it the findings indicate that there is a positive correlation between these physical and psychological factors. The inherently broad nature of using a lifestyle intervention to treat obesity resulted in a broad range of improvements. There was the obvious physical improvement resulting from weight loss, however the benefits extended beyond the physical sense to include reduced stress, fewer depressive symptoms, and enhanced self-image. These benefits fueled the desire to maintain a healthy lifestyle and it can be concluded that the broad approach which was monitored in the study created a positive feedback loop which led to mutually reinforcing behaviours that contributed to both weight loss and maintenance in the long term.

In summary, the current findings suggest that there is an ongoing effort needed to raise awareness about the psychological and physical problems associated with obesity. Obesity remains a ticking time bomb that will continue to escalate unless innovative and effective treatment methods are implemented. It is arguable that many of the current treatments are outdated. In this regard, it would seem logical to incorporate the technological advances that have taken place in recent years resulting in huge cultural and societal change. Creating apps and social media platforms that

are directed towards nutrition and maintaining a healthy lifestyle may prove to be of benefit in tackling this increasingly prevalent concern. Healthcare professionals may need to further investigate the daily challenges overweight individuals face in order to provide a more tailored approach.

Although improvements were found after the lifestyle intervention, maintaining these positive outcomes proves a challenge. More work is needed in order to show promising results to banish obesity for once and all.

In conclusion, although the study revealed significant improvements upon completion of the lifestyle intervention, maintaining these positive outcomes proved to be a challenge. It is clear that further research is needed in order to refine this concept of using a lifestyle intervention as a treatment for weight loss and maintenance. It can be hoped that such research will lead to advances that may contribute to tackling the ever increasing problem of obesity in modern society.

References

Addo-Ayisi, S., Addo-Ayisi. S., & Ohemeng, A. (2016) Weight loss practices among newly enrolling clients in a commercial weight loss program in Ghana. *Original article, 50* (1). DOI: http://dx.doi.org/10.4314/gmj.v50il.6

Adedoyin, C., Burns, N., Jackson, M. H., & Franklin, S. (2014) Revisiting holistic interventions in substance abuse treatment. *Journal of human behaviour in the social environment, 24* (5), 538-546. DOI: 10.1080/10911359.2014.914718

Allen, T. J., Cohn, R. S., Ahern, L. A. (2015) Experiences of a commercial weight-loss programme after primary care referral: a qualitative study. *Journal of general practice.* DOI:10.3399/bjgp15X684409

Anastasiou, A. C., Fappa, E., Karfopoulou, E., Gkza, A., & Yannakoulia, M. (2015) Weight loss maintenance in relation to locus of control: The Med Weight study. *Behaviour research and therapy, 71*, 40 – 44. http://dx.doi.org/10.1016/j.brat.2015.05.010.

Annesi, J. J., & Porter, J. K. (2015) Reciprocal effects of exercise and nutrition treatment-induced weight loss with improved body image and physical concept. *Behavioural medicine, 41,* 18 – 24. DOI: 10.1080/08964289.2013.856284

Appelhans, M. B., French, A. S., Pagoto, L. S., & Sherwood, E. N. (2016) Managing temptation in obesity treatment: A neurobehavioural model of intervention strategies. *Appetite, 96*, 268 – 279. http://dx.doi.org/10.1016/j.appet.2015.09.035.

Barte, M. C. J., Veldwijk, J., Teeixeria, J. P., Sacks. M. F., & Bemelmans, E. J. W. (2014) Differences in weight loss across different BMI classes: A meta-analysis of the effects of interventions with diet and exercise. *International journal of behavioural medicine, 21,* 784-793. DOI 10.1007/s12529-013-9355-5.

Barry, D., Clarke, M., & Petry, M. N. (2009) Obesity and its relationship to addictions: Is overeating a form of addictive behaviour. *Am J Addict, 18* (6), 439-451. DOI:10.3109/10550490903205579.

Belsky, I. C. A., Epel, S. E., & Tomiyama, J. A. (2014) Clues to maintaining calorie restriction? Psychosocial profiles of successful long-term restrictors. *Appetite, 79,* 106 – 112. http://dx.doi.org/10.1016/j.appet.2014.04.006.

Bjorck, C., Clinton, D., Sohlberg, S., & Norring, C. (2007) Negative self-image and outcome in eating disorders: Results at 3- year follow up. *Eating behaviours, 8*, 898 – 406. DOI: 10.1016/j.eat.beh.2006.12.002.

Blanchet, H. A., & Fecteau, S. (2014) Overlap of food addiction and substance use disorders definitions: Analysis of animal and human studies.

Neuropharmacology, 85, 81 – 90. http://dx.doi.org/10.1016/j.neuropharm.2104.05.019.

Boo, S. (2013) Body mass index and weight loss in overweight and obese Korean women: The mediating role of body weight perception. *Asian nursing research, 7,* 191 – 197. http://dx.doi.org/10.1016/j.anr.2013.09.003.

Brauer, P., Gorber, C. S., Shaw, E., Singh, H., Bell, N., Shane, E. R. A., Jaramillo, A., & Tonelli, M. (2015) Recommendations for prevention of weight gain and use of behavioural and pharmacologic interventions to manage overweight and obesity in adults in primary care. *Canadian task force on preventive health care, 187* (3), DOI:10.1503/cmaj.140887.

Brantley, J. P., Stewart, W. D., Myers, H. V., Ewald-Matthews, R. M., Ard, D. J., Coughlin, W. J., Jerome, J. G., Hodge-Samuel, C., Lien, F. L., Gullion, M. C., Hollins, F. J., Svetkey, P. L., & Stevens, J. V. (2014) Psychosocial predictors of weight regain in the weight loss maintenance trial. *Journal of behavioural medicine*, *37,* 1155- 1168. DOI: 10.1007/s10865-014-9565-6.

Britt, W. T., Adler, B. A., & Bartone, T. P. (2001) Deriving benefits from stressful events: the role of engagement in meaningful work and happiness. *Journal of occupational health psychology, 6,* (1), 53 - 63. DOI: 10.1037///1076-8998.6.1.53,

Carels, A. R., Hinman, G. N., Hoffmann, A. D., Burmeister, M. J., Borushok, E. J., Marx, M. J., & Ashrafioun, L. (2014) Implicit bias about weight and weight

loss treatment outcomes. *Eating behaviours, 15,* 648-653. http://dx.doi.org/1016/j.eatbeh.2014.08.026.

Cavill, N., & Ells, L. (2010) Treating adult obesity through lifestyle change interventions, A briefing paper for commissioners. http://www.noo.org.uk/NOO_pub/briefing_papers.

Clark, M. (2006) Patient-centered weight loss programmes. *Patient Diabetes International. 23,* 123 -127.

Colombo, O., Ferretti, V. V., Ferraris, C., Trentani, C. Vinai, P., Villani, S., & Tagiabue, A. (2014) Is drop out rate from obesity treatment a predictable and preventable event? *Nutritional Journal*. http://www.nutritinj.com/content/13/1/13.

Cox, L. T., Krukowski, R., Love, J. S., Eddings, K., DiCarlo, M., Chang, Y. J., Prewitt, E. T., & West, S. D. (2012) Stress management-argumented behavioural weight loss intervention for African American women. *Health education & behaviour, 40* (1), 78-87. DOI:10.1177/1090198112439411.

Dahl, A. A., Hales, B. S., McGrievy, T. M. G. (2015) Integrating social media into weight loss interventions. *Current Opinion in Psychology ,9,* 11 -15. http://dx.doi.org/10.1016/j.copsyc.2015.09.018.

Daumit, G. L., Dickserson, F. B., Wang, N., Dalcin, A., Jerome, G. J., Anderson C. A., C. A. M., Appel, L. J., (2013) A behavioural weight-loss programme for

overweight and obese adults with serious mental health illness significantly reduced weight over an 18- month period. *Journal of occupational therapy, 60* 304-307. DOI: 10.1111/1440-1630.12065.

Deitel, M. (2003) Overweight and obesity worldwide now estimated to involve 1.7 billion people. *Obesity surgery*, *13*, 329-330.

Despres, P. J., Lemieux, I., Prud'homme, D. (2001) Treatment of obesity: need to focus on high abdominally obese patients. *Clinical review 322,* bmj.com.

Dortland, R. v, B. K. A., Vreeburg, A. S., Giltay, J. E., Licht, M.M. C., Vogelzangs, N., Veen, v. T., Geus, d, C.J. E., Pennix, H.J.W. B., Zitman, G. F. (2013) The impact of stress systems and lifestyle on dyslipidemia and obesity in anxiety and depression. *Psychneuroendocrinology, 38,* 209-218, http://dx.doi.org/10.1016/j.psyneuen.2012.05.017.

Eldridge, D. J., Devine, M. C., Wethington, E., Aceves, L., Caesar, P. E., Wansink, B., & Charlson, E. M. (2016) Environmental influences on small eating behaviour change to promote weight loss among Black and Hispanic populations. *Appetite, 96,* 129-137, http://dx.doi.org/10.1016/j.appet.2015.09.011.

Elfhag, K., & Rossner, S. (2004) who succeeds in maintaining weight loss? A conceptual review of factors associated with weight loss maintenance and weight regain. *Obesity reviews, 6,* 67-85.

Ernst, B., Wilms, B., Thurnheer, M., & Schultes, B. (2015) Eating behaviour in treatment-seeking obese subjects- Influence of sex and BMI classes. *Appetite, 95,* 96-100. http://dx.doi.org/10.1016/j.appet.2015.06.019.

Forman, M. E., Butryn, L. M., Manasee, M. S., & Bradley, E. L. (2015) Acceptance-based behavioural treatment for weight control: a review and future directions. *Current opinion in psychology,* 87-90. http://dx.doi.org/10.1016/j.copsyc.2014.12.020.

Franz, J, M., VanWormer, J, J., Crain, L, A., Boucher, L, J., Histon, T., Caplan, W., Bowman, D, J., & Pronk, P, N. (2007) Weight- loss outcomes: A systematic review and Meta-Analysis of weight-loss clinical trials with a minimum 1-year follow up. *Journal of the American dietetic association*. Doi: 10.1016/j.jada.2007.07.017.

Frayn, M., Sears, R. C., & Ranson, V. M. K. (2016) A sad mood increases attention to unhealthy food images in women with food addiction. *Appetite, 100,* 55-63. http://dx.doi.org/10.1016/j.appet.2016.02.008.

Fraser, S. (2013) Junk: Overeating and obesity and the neuroscience of addiction. *Addiction research and theory, 21,* (6), 496 - 506. DOI: 10.3109/16066359.2012.749868.

Fildes, A., Charlton, J., Rudisill, C., Littlejohns, P., Prevost, T., Gulliford, C. M. (2015) Probability of an obese person attaining normal body weight: Cohort

study using electronic health records. *American Journal of public health, 105*, (9), doi:10.2105/AJPH.2015.302773.

Ganely, M. R. (1989) Emotion and eating in obesity: a review of the literature. *International Journal of eating disorders*, *8*, (3), 343-361.

Gearhardt, A., Roberts, M., & Ashe, M. (2013) If sugar is addictive… what does it mean for the law? *Journal of law, medicine and ethics.* 46- 49.

Gilbert, P., Durrant, R., & McEwan, K. (2006) Investigating relationships between perfectionism forms and functions of self-criticism, and sensitivity to put-down. *Personality and Individual differences, 41,* 1299 – 1308. DOI: 10.1016/j.paid.2006.05.004.

Gillison, F., Sebire, S., & Standage, M. (2011) What motivates girls to take up exercise during adolescence? Learning from those who succeed. *British Journal of Health Psychology, 17,* 536 – 550. DOI: 10.1111/j.2044-8287.2011.02053.x.

Gillison, F., Stathi, A., Reddy, P., Perry, R., Taylor, G., Bennett, P., Dunbar, J., & Greaves, C. (2015) Processes of behaviour change and weight loss in a theory-based weight loss intervention program: a test of the process model for lifestyle behaviour change. *International Journal of behavioural nutrition and physical activity.* DOI: 10.1186/s12966-014-0160-6.

Ginis, M. A. K., McEwan, D., Josse, R. A., & Philips, M. S. (2012) Body image change in obese and overweight women enrolled in a weight-loss intervention: The importance of perceived versus actual physical changes. *Body Image, 9,* 311-317, http://dx.doi.org/10.1016/j.bodyim.2012.04.002.

Grave, D. R., Suppini, A., Calugi, S., & Marchesini, G. (2006) Factors associated with attrition in weight loss programs. *International journal of behavioural consultation and therapy, 2* (3).

Groh, J. C., & Urbancic, C. J. (2015) The impact of a lifestyle change program on the mental health of obese under-served African American women. *Archives of psychiatric nursing, 29,* 76-82. http://dx.doi.org/10.1016/j.apnu.2014.11.001.

Haber, J. J., Atti, S., Gerber, M. L., & Waseem, M. (2015) Promoting an obesity education program among minority patients in a single urban pediatric emergency department (ED). *International journal of emergency medicine.* DOI 10.1186/s12245-015-0086-z.

Halberstadt, J., Strien, V. T., Vet, de. T., Eekhout, I., Braet, C., & Seidell, C. J. (2016) The association of eating styles with weight change after an intensive combined lifestyle intervention for children and adolescents with severe obesity. *Appetite, 99,* 82-90. http://dx.doi.org/10.1016/j.appet.2015.12.032.

Hart, H. K., Herriot, A., Bishop, A. J., & Truby, H. (2003) Promoting healthy diet and exercise patterns amongst primary school children: a qualitative investigation of parental perspectives. *Journal of Human Nutrition dietetics 16*, 89 – 96

Hingle, M., & Patrick, H. (2015) There are thousands of Apps for that: Navigating technology for nutrition education and behaviour. *Journal of nutrition education and behaviour, 48,* (3). http://dx.doi.org/10.1016/j.jneb.2015.12.009.

Hopkinson, B. J., & Richardson, A. (2015) A mixed-methods qualititaive research study to develop a complex intervention for weight loss and anorexia in advanced cancer: The family approach to weight and eating. *Palliative Medicine, 29* (2), 164 – 176. DOI: 10.1177/0269216314556924.

Horn, B. D., & Ryan, D. (2016) Principles of patient management. *The journal of family practice, 65* (7).

Ibrahim, M., Therale, S. M., Krakoff, J., & Gluck, E. M. (2016) Percieved stress and anhedonia predict short- and long-term weight change, respectively, in healthy adults. *Eating behaviours, 21,* 214- 219. http://dx.doi.org/10.1016/j.eatbeh.2016.03.009.

Jakicic, M, J., Clark, K., Coleman, E., Donnelly, E. J., Foreyt, J., Melanson, E., Volek, J., & Volpe, L. S. (2001) Appropriate intervention stratergies for

weight loss and prevention of weight regain for adults. *Medicine & Science in sports & exercise.* 2145 – 2156.

Johannessen, B. K., & Berntsen, D. (2013) Losing the symptoms: weight loss and decrease in posttraumatic stress disorder symptoms. *Journal of clinical psychology, 69 (6),* 655 – 660. DOI: 10.1002/jclp.21962.

Kalodner, R. C., & DeLucia, L. J. (1990) Components of effective weight loss program: Theory, research, and practice. *Journal of counseling and development, 68* 427 – 433.

Karnani, A., McFerran, B., & Mukhopadhyay. (2014) Lean washing: A hidden factors in the obesity crisis. *California management review, 56* (4) 5- 27.

Kuijer, G. R., & Boyce, A. J. (2014) Chocolate cake. Guilt or celebration? Associations with healthy eating attitudes, perceived behavioural control, intentions and weight-loss. *Appetite, 74,* 48-54, http://dx.doi.org/10.1016/j.appet.2013.11.013.

Kopelman, P. (2007) Health risks associated with overweight and obesity. *Obesity reviews, 8,* 13-17. www.blackwell-synergy.com

Larroque, M. (2002) Myths about the obese patient. *Journal of Diagnosis* 83-91.

Lasikiewicz, N., Myrissa, K., Hoyland, A., & Lawton, C, J. (2014) Psychological benefits of weight loss following behavioural and/or dietry weight loss interventions. A systematic research review. *Appetite, 72,* 123-137 http://dx.doi.org/10.1016/j.appet.2013.09.017.

Leehr, J. E., Krohmer, K., Schag, K., Dresler, T., Zipfel, S., & Giel, E. K. (2015) Emotion regulation model in binge eating disorder and obesity – a systematic review. *Neuroscience and biobehavioural reviews, 49,* 125-134, http://dx.doi.org/10.1016/j.neubiorev.2014.12.008.

Lethbridge, J., Watson, J. H., Egan, J. S., Street, H., & Nathan, R. P. (2011) The role of perfectionism, dichotomous thinking, shape and weight overvaluation, and conditional goal setting in eating disorders. *Eating behaviours, 12,* 200 – 206. Doi: 10.1016/j.eatbeh.2011.04.003.

Lim, L. S., & Bruce, S. A. (2015) Can't wait to lose weight? Characterizing temporal discounting parameters for weight-loss. *Appetite, 85,* 8-13, http://dx.doi.org/10.1016/j.appet.2014.11.001.

Ludman, E., Simon, E. G., Ichikawa, E. L., Operskalski, H. B., Arterburn, D., Linde, A. J., Jeffery, W. R., Rohde, P., & Finch, A. E. (2009) Does depression reduce the effectiveness of behavioural weight loss treatment. *Behavioural medicine, 35.*

Mardas-Stelmach, M., Mardas, M., Walkowiak, J., & Boeing, H. (2014) Long-term weight status in regainers after weight loss by lifestyle intervention: status and challenges. *Proceedings of the Nutrition Society, 73,* 509-518. DOI:10.1017/S0029665114000718.

Markus, R. H. (2016) What moves people to action? Culture and motivation. *Current opinion in psychology*, *8,* 161-166, http://dx.doi.org/10.1016/j.copsyc.2015.10.028.

McKee, C. H., & Ntoumanis, N. (2014) Developing self-regulation for dietary temptations: intervention effects on physical, self-regulatory and psychological outcomes. Journal of behavioural medicine, 37:1075-1081, DOI:10.1007/s10865-014-9557.

Mensinger, L. J., Calogero, M. R., & Tylka, L. T. (2016) Internalized weight stigma moderates eating behaviour outcomes in women with high BMI participating in a healthy living program. *Appetite, 102,* 32 – 43. http://dx.doi.org/10.1016/j.appet.2016.01.033.

Murakami, M. J., & Latner, D. J. (2015) Weight acceptance versus body dissatisfaction: Effects on stigma, perceived self-esteem, and perceived psychopathology. *Eating behaviours, 19,* 163-167, http://dx.doi.org/10.1016/j.eatbeh.2015.09.010.

Monsivais, P., Martin, A., Suhrcke, M., Forouhi, G. N., & Wareham, J. W. (2015) Job-loss and weight gain in British adults: Evidence from two longitudinal studies. *Social Science & Medicine, 143,* 223 – 231. http://dx.doi.org/10.1016/j.socscimed.2015.08.052.

Niemeier, M. H., Leahey, T., Reed, P. K., Brown, A. R., & Wing, R. R. (2012) An acceptance-based behavioural intervention for weight loss: A pilot study. *Behaviour therapy, 43,* 427-435.

Nurkkala, M., Kaikkonen, K., Vanhala, L. M., Karhunen, L., Keranen, M. A., & Korpelainen, R. (2015) Lifestyle intervention has a beneficial effect on eating behaviour and long-term weight loss in obese adults. *Eating behaviours, 18,* 179-185. http://dx.doi.org/10.1016/j.eatbeh.2015.05.009.

Raaijmakers, H. C. L., Pouwels, S., Berghuis, A. K., & Nienhuijs, W. S. (2015) Technology-based interventions in the treatment of overweight and obesity: A systematic review. *Appetite*, *95,* 138-151. http://dx.doi.org/10.1016/j.appet.2015.07.008.

Reichert, R. A. (2015) Obesity, weight loss, and employment prospects: Evidence from a randomized trial. *The journal of human resources* , *50* , (3), 759- 784.

Rippe, M. J., Price, M. J., Hess, A. S., Kline, G., DeMers, A. K., Damitz, S., Kreidieh, I., & Freedson, P. (1998) Improved psychological well-being, quality of life,

and health practices in moderately overweight women participating in a 12-week structured weight loss program. *Obesity research, 6* (3) 208- 218.

Rudolph, W. C., Wells, L. C., Weller, D. M., Baltes, B. B. (2009) A meta-analysis of empirical studies of weight-based bias in the workplace. *Journal of vocational behaviour*, *74*, 1-10. DOI:10.1016/j.jvb.2008.09.008.

Rutten, M. G., Meis, MJ. J., Hendriks, CR. M., Hamers, MJ, F., Veenhof, C., & Kremers, J. P. S. (2014) The contribution of lifestyle coaching of overweight patients in primary care to more autonomous motivation for physical activity and healthy dietary behaviour: results of a longitudinal study. *International journal of behavioural nutrition and physical activity.* http://www.ijbnpa.org/content/11/1/86.

Rogerson, D., Soltani, H., & Copeland (2016) The weight-loss experience: a qualitative exploration. *Public Health, 16,* 2 -12. DOI:10.1186/s12889-016-3045-6.

Rothberg, E. A., McEwen, N. L., Kraftson, T. A., Neshewat, M. G., Fowler, E. C., Burant, F. C., & Herman, H. W. (2014) The impact of weight loss on health-related quality-of –life: implications for cost-effectiveness analyses. *Quality life research*, *23,* 1371-1376. DOI: 10.1007/s1136-013-0557-8.

Sallis, F. J., Glanz, K. (2012) Physical activity and food environments: solutions to the obesity epidemic. *The Milbank Quarterly, 87* (1), 123 – 154. http://www.jstor.org/stable/25474362.

Sawamoto, R., Nozaki, T., Furukawa, T., Tanahashi, T., Morita, C., Hata, T., Komaki, G., & Sudo, N. (2016) Predictors of dropout by females obese patients treated with a group cognitive behavioural therapy to promote weight loss. *The European journal of obesity, 9,* 29-38. DOI: 10.1159/000442761.

Schelling, S., Munsch, S., Meyer, H. A., & Margraf, J. (2011) Relationship between motivation for weight loss and dieting and binge eating in a representative population survey. *International journal of eating disorders, 44* , 39 – 43. DOI: 10.1002/eat.20748.

Shih, F. S., Lio, H. C., Liao, L-L. & Osborne, H. R. (2016) Health literacy and the determinants of obesity: a population-based survey of sixth grade school children in Taiwan. *Public Health, 16*, DOI: 10.1186/s12889-016-2879-2.

Skolnik, S. N., & Horn, B. D. (2016) Lifestyle management. *The journal of family practice, 65* (7).

Snethen, A. J., Broome, E. M., & Cashin, E. S. (2006) Effective weight loss for overweight children: A meta-analysis of intervention studies. *Journal of pediatric nursing, 21,* (1) 45-55. DOI:10.1016/j.pedn.2005.06.006.

Sniehotta, F. F., Simpson, A. S., & Greaves, J. C. (2014) Weight loss maintenance: An agenda for health psychology. *Journal of health psychology, 19,* (3), 459-464. DOI:10.1111/bjhp.12107.

Starr, P. K., Fishcher, G. J., & Johnson, A. M. (2014) Eating behaviours, mental health, and food intake are associated with obesity in older congregate meal participants. *Journal of nutrition in Gerontology and geriatrics, 33*, (4), 340-356, DOI: 10.1080/21551197.2014.965375.

Stead, M., Craigie, M. A., Macleod, M., McKell, J., Caswell, S., Steele, C. J. R., & Anderson, S. A. (2015) Why are some people more successful at lifestyle change than others? Factors associated with successful weight loss in the BeWEL randomized controlled trial of adults at risk of colorectal cancer. *International Journal of behavioural nutrition and physical activity.* DOI: 10.1186/s12966-015-0240-2.

Stotland, C. S., & Laroque, M. (2005) Early treatment response as a predictor of ongoing weight loss in obesity treatment. *Journal of health psychology, 10*, 601 – 614. DOI:10.1348/135910705X43750.

Stotland, C, S., and Larocque, M. (2004) Convergent Validity of the Larocque obesity Questionnaire and Self-reported behavioural observations during obesity treatment, *Psychological Reports , 95*, 1031- 1042.

Stotland, S., Laroque, M., & Sadikaj, G. (2011) Positive and negative dimensions of weight control motivation. *Eating behaviours.* Doi:10.1016/j.eatbeh.2011.10.003.

Strein, V. T., Konttinen, H., Homberg, R. J., Engels, E.M.C. R., & Winkens, H.H. L. (2016) Emotional eating as a mediator between depression and weight gain. *Appetite, 100,* 216-224, http://dx.doi.org/10.1016/j.appet.2016.02.034

Streiner, D., & Gedder, J. (2001) Intention to treat analysis in clinical trials when there are missing data. *Evidence based mental health, 4,* 70 – 71, doi:10.1136/ebmh.4.3.70

Tan, C. C., Ruhl, H., Chow, M. C., & Ellis, L. (2016) Retrospective reports of parental feeding practices and emotional eating in adulthood: The role of food preoccupation . *Appetite, 105*, 410-415, http://dx.doi.org/10.1016/j.appet.2016.06.009.

Tang, J., Abraham, C., Stamp, E., & Greaves, C. (2015) How can weight loss-app designers' best engage and support users? A qualitative investigation. *British journal of health psychology, 20*, 151 – 171, DOI: 10.1111/bjhp.12114.

Tranchant, T., Larocque, M., Russel, J., & Stotland, S. (2008) Weight loss, stress responses and depression in obese patients: usefulness of an online questionnaire for assessment and management of psychological and behavioural factors. *Nutrition Society*, *67*. Doi:10.1017/S0029665108008124.

Vieira, N. P., Silva, N. M., Mata, J., Coutinho, R. S., Santos, C. T., Sardinha, B. L., Teixeria, J. P. (2013) Correlates of health-related quality of life, psychological well-being, and eating self-regulation after successful weight loss

maintenance. *Journal of behavioural medicine* , *36,* 601 -610. DOI 10.10.1007/s10865-012-9454-9.

O'Neil, M. P., Theim, R. K., Boeka, A., Johnson, G., & Kovach-Miller, K. (2012) Changes in weight control behaviours and hedonic hunger during 12- week commercial weight loss program. *Eating behaviours, 13,* 354 - 360. DOI:10.1016/j.eat.beh.2012.06.002.

Opdenacker, J., Boen, F., Coorevits, N., & Delecluse, C. (2008) Effectiveness of a lifestyle intervention and a structured exercise intervention in older adults. *Preventive Medicine, 46,* 518 – 524. Doi:10.1016/j.ypmed.2008.02.017.

Puhl, M. R., & Chelsea, A. H. (2010) Obesity stigma: Important considerations for public health. *American Journal of public health , 100* (6).

Piatt, A. G., Sedidel, C. M., Powell, O. R., & Zgibor, C. J., (2016) Influence of patient- centered decision making on sustained weight loss and risk reduction following a lifestyle intervention efforts in rural Pennsylvania. *The Diabetes educator, 42* (3) 281 – 289. DOI: 10.1177/0145721716636962.

Pila, E., Sabiston, M. C., Brunet, J., Castonguay, L. A., & O'Loughlin, J. (2015) Do body-related shame and guilt mediate the association between weight status and self-esteem? *Journal of health psychology*, *20* (5) 659-669, DOI: 10.1177/1359105315573449.

Placido-Peixoto, C., Soares, J. M., Pereira, T. A., & Macedo, A. (2015) Perfectionism and disordered eating in overweight women. *Eating behaviours, 18,* 76 -80. http://dx.doi.org/10.1016/j.eatbeh.2015.03.009.

Vinkers, W. D. C., Adriaanse, A. M., Ridder, T. D. D. (2013) In it for the long haul: characteristics of early and late drop out in self-management intervention for weight control. *Journal of behavioural medicine. 36,* 520 -530. DOI 10.1007/s10865-012-9446-9.

Volkow, D., Fowler, S. J., & Wang, J. G. (2004) The addicted human brain viewed in light of imaging studies: brain circuits and treatment strategies. *Nueropharmacology, 47,* 3- 13. Doi:10.1016/j.neuropharm.2004.07.019

Wang, G. J., Volkow N. D., Thanos, K.P., & Fowler, S. J. (2004) Similarity between obesity and drug addiction as assessed by neurofunctional imaging: A concept review. *Journal of addictive diseases, 23,* (3), 39-53. DOI: 10.1300/J069v23n03_04.

Wang, J., Ye, L., Zheng, Y., Burke, E. L. (2015) Impact of perceived barriers to healthy eating on diet and weight in a 24 month beahvioural weight loss trail. *Journal of nutrition education behvaiour. 47,* (5) 432-436 http://dx.doi.org/10.1016/j.jneb.2015.05.004.

Waring, E. M., Schneider, L. K., Appelhands, M. B., Busch, M. A., Whited, C. W., Rodrigues, S., Lemon, C. S., & Pagoto, L. S. (2014) Early-treatment weight loss predicts 6-month weight loss in women with obesity and depression:

Implications for stepped care. *Journal of psychosomatic research, 76*, 394 – 399. http://dx.doi.org/10.1016/j.jpsychores.2014.03.004.

Williams, C. G., Grow, M. V., Freedman, R. Z., Ryan, M. R., & Deci, L. E. (1996) Motivational predictors of weight loss and weight-loss maintenance. *Journal of personality and social psychology 70,* (1), 115-126.

Whale, K., Gillison, B. F., & Smith, C. P. (2014) 'Are you still on that stupid diet?': Women's experiences of societal pressure and support regarding weight loss, and attitudes towards health policy intervention. *Journal of health psychology, 19* (12), 1536-1546, DOI: 10.1177/1359105313495072.

Wharton, M. C., Johnston, S. C., Cunningham, K. B., & Sterner, D. (2014) Dietary self-monitoring, but not dietary quality, improves with use of smartphone App technology in an 8 – week weight loss trial. *Journal of nutrition and education behaviour, 46,* (5). http://dx.doi.org/10.1016/j.jneb.2014.04.291.

Unwin, N., Shaw, J., Zimmet, P., & Alberti, M. M. G. K. (2002) Impaired glucose tolerance and impaired fasting glycaemia the current statue on definition and intervention. *Diabetic Medicine, 19,* 708 – 723.

Upton, P., Taylor, E, C., Peters, M. D., Erol, R., & Upton, D. (2012) The effectiveness of local child weight management programmes: an audit study. *Journal of child care, health and development.* 39 (1), 125-133. Doi:10.1111/j.1365-2214.2012.01378.x.

Yacout, D., & McMahon, A. (2015) Review: The effects of contemporary behavioural weight loss maintence interventions for long term weight loss: a systmatic review. *Journal of research in Nursing, 29* (6), 497 – 498. DOI: 10.1177/1744987115599901.

Young, D. M., Lubans, R. D., Collins, E. C., Callister, R., Plotnikoff, C. R., & Morgan, J. P. (2015) Behavioural mediators of weight loss in the SHED-IT community randomized controlled trial for overweight and obese men. *Behaviour medicine, 49,* 286 – 292. DOI: 10.1007/s12160-014-9657-0.

Zeeck, A., Stelzer, N., Linster, W. H., Joos, A., & Hartmann, A. (2011) Emotion and eating in binge eating disorder and obesity. *Eating disorders, 19,* 426-437, DOI:10.1002/erv.1066.

Zilberter, T. (2015) Appetite, reward, and obesity: the causes and consequences of eating behaviours. *Frontiers in Psychology, 6.* DOI: 10.3389/fpsyg.2015.00411.

Appendix

Appendix A – The Laroque Obesity Questionnaire (LOQ)

1. Using the past month as a reference, on average, how many complete meals did you eat per day?	No sustainable meal or 1 meal	2 meals	3 or 4 meals	5 or more meals
2. I have the feeling that life is getting me nowhere and is worthless. How do you feel about that sentence?	This sounds just like me	I often think that way	I sometimes think that way	I never think that way
3. Over the past month, when not exerting yourself, have you experienced any of the following symptoms: Pounding heart or shortness of breath?	Never	Occasionally	Often (once a week on average)	Very often(several times a week)
4. Using the past week as a reference, how many minutes do you spend walking every day (both at work and during your leisure time)?	Less than 20 minutes a day	Between 20 and 35 minutes a day	Between 35 and 50 minutes a day	Between 35 and 50 minutes a day
5. Think of the last few meals you had and try to estimate how long it takes you to eat a meal.	Less than 10 minutes	Between 10 and 15 minutes	Between 15 and 20 minutes	More than 20 minutes
6. During the past month, have you experienced any of the following symptoms: headache, backache, sore neck that cannot be attributed to any disease?	Never	Occasionally	Once a week on average	Several times a week
7. When passing a tray of fruit, food or sweets, do you help yourself?	Automatica lly	Quite often	Occasionally	Never

8. I usually do not get involved in any activity, but if you do, I must be sure that I will succeed.	Yes, absolutely	I often have this attitude	I occasionally have this attitude	No, this doesn't apply to me at all
9. I expect a lot from others and I am often disappointed. Does this affirmation reflect how you feel?	Completely	Mostly	Not really	Absolutely not
10. Do you wake up at night to eat?	Never	Occasionally	Once a week	Several times a week
11. I often start arguments; I like to defend lost causes.	That's so much like me	This happens quite often	This may happen occasionally	That's not like me at all
12. I demand a lot from myself and everything I do must be perfect.	I agree completely	I mostly agree	I mostly disagree	I disagree completely
13. Using the regular meals (protein supplements not included) that you have had over the past few days as a reference, have you been able to leave food on your plate?	Yes always	At least every other meal or so	Occasionally	Almost never
14. I feel guilty when things are not going very well.	Absolutely	Quite often	Rarely	Never
15. How many glasses of wine, beer or hard liquor have you had over the past week? (Add them up. Remember that two glasses of wine are equivalent to a glass of hard liquor or beer)	20 or more per week	12 to 12 per week	5 to 11 per week	0 to 4 per week
16. When I am disappointed or upset, I have to compensate by eating	Not at all	A few times a month	Once a week	More than once a week
17. Aside from regular meals, do you pick? (Watching television or	Most of the time	Quite often	Occasionally	never

otherwise)				
18. During the last month, have you had binges, urges to eat or have eaten without control?	Very often (many times a week)	Quite often (many times a week)	Occasionally	Never
19. Do you think these urges to eat may be related to your food intake (previous meal not sufficient or more than 4-5 hour interval	Yes, absolutely	Maybe	Not at all	
20. When I blunder or make an error, I forget it rapidly.	Yes, absolutely	Quite often	Rarely	Never
21. I often criticize others but not maliciously	I never criticize others	I rarely criticize others	I often criticize others	I very often criticize others
22. During the past month, have you experienced one or many of the following symptoms that no exertion, physical condition or disease can explain: unusual fatigue, irritability, mood swings, difficulty to concentrate, sadness?	Very often (several times a week)	Often (once a week on average)	Occasionally	Never
23. Do you thing that these symptoms: unusual fatigue, irritability, mood swings, difficulty in concentrating, sadness, may be related to your food intake (previous meal no sufficient or more than 4-5 hour interval between meals?	Absolutely	Maybe	Not at all	
24. During the past month, have you experienced one or more of the	No	Occasionally	Often (once a week on average)	Very often (several times a week)

following symptoms that no exertion, known disease or physical condition can explain: dizziness, trembling, palpitations, profuse sweating?				
25. Select the sentence that best applies to you: when I am on a diet…..	I smoke more than usual	I smoke as much as before the programme	I remain a non-smoker	
26. Using yesterday as a reference, how many glasses of water or other liquids (expect alcohol) did you drink	0 or 1 glass a day	2 to 4 glasses a day	5 to 7 glasses a day	8 glasses or more a day
27. I am short tempered and I usually attack before being attacked	This is very true	This happens to me quite often	This happens to me sometimes	This almost never happens to me
28. During the past month, have you had any digestive problems that no known disease can explain?	Not at all	On a few occasions	On several occasions	Several times a week
29. Under special dining circumstances, as in a restaurant, on week-ends or while traveling	I do not control myself	I have little control of myself	I have fairly good control of myself	I am in full control of myself
30. I feel inferior to other people and I rarely achieve anything.	I agree completely	I often feel this way	It happens to me sometimes	I never feel that way
31. I have thought about suicide	I very often think about this	I often think about this	I occasionally think about this	I never think about this
32. I do not believe that I can become indifferent to the foods I love and which are not healthy. Select the statement that best	This is totally me	I have become indifferent to at least one of those foods	My taste for certain food has changed	I am now totally indifferent to the foods that were bad for me

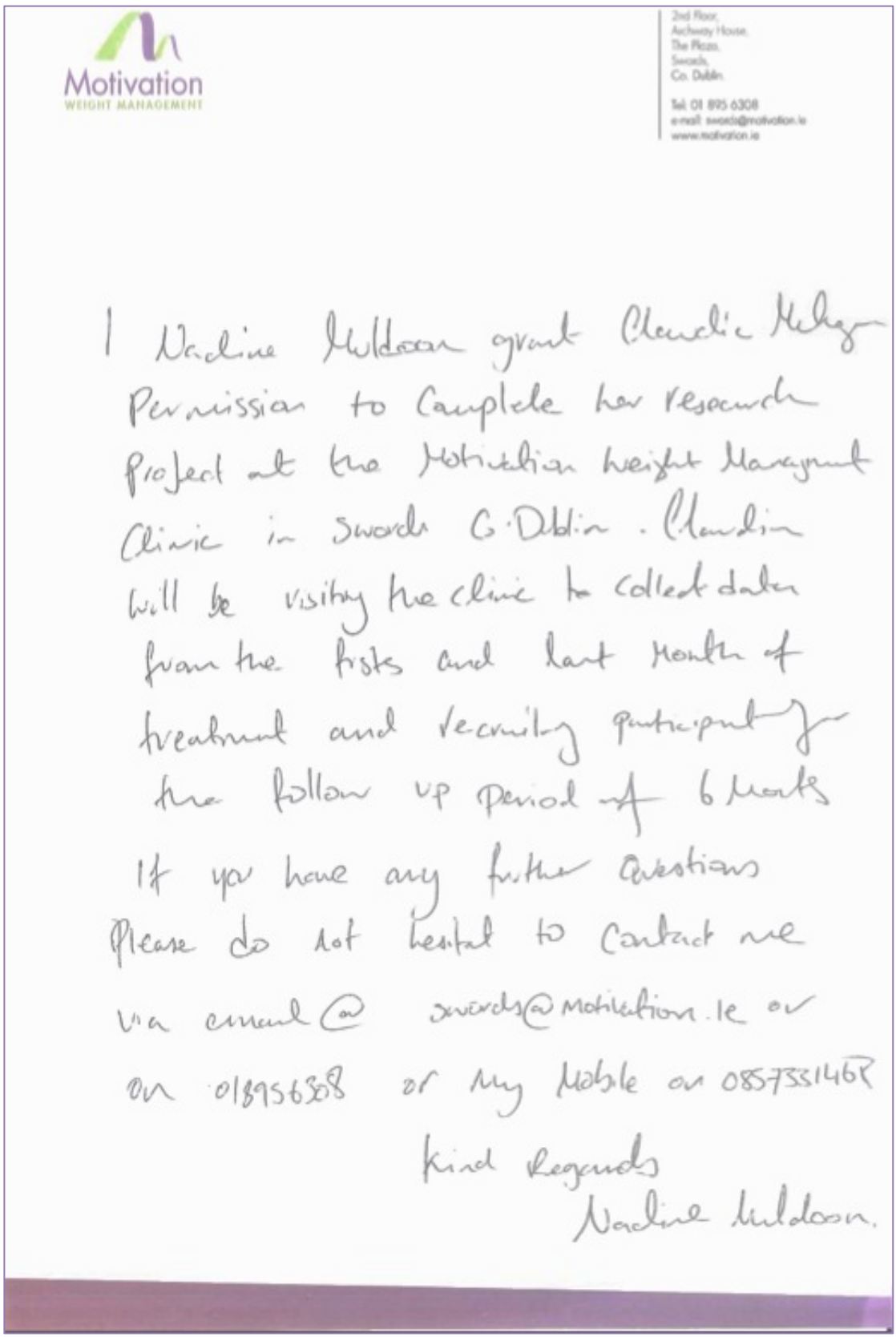
applies to your behaviour in the past or to your most likely behaviour in the future:				
33. How many cups of coffee, tea, cola (diet or not) did you drink daily on an average this week? Add up the total, counting two glasses of cola cups of weak tea as one cup of coffee	Less than 3 cups a day	4 to 5 cups a day	6 to 7 cups a day	More than 7 cups a day
34. Even in a group situation, I usually express what I feel. Select the statement that comes closet to your behaviour:	I express my feelings at every opportunity	I express my feelings quite often	I rarely express my feelings at all	I can never express myself
35. Are you quite anxious over the way people feel about you?	I am, most of the time	It happens quite often	It happens sometimes	It never worries me
36. I must prove that I am best in everything I do	I agree completely	I mostly agree	I mostly disagree	I disagree completely
37. I cry all the time	I agree completely	It happens to me often	It happens to me sometimes	It almost never happens to me
38. Life is hopeless	I agree completely	I often feel this way	I sometimes feel this way	I almost never feel this way
39. Only a lucky few succeed. I've never been lucky myself	I agree completely	I mostly agree	I mostly disagree	I disagree completely
40.During the past month have you had any difficulty concentrating or remembering things?	Not at all	It happened a few times	It happened often	It happened several times each week
41. I have nothing to do. I easily get bored	This is one of my main weakness	Quite often	It is true but it doesn't cause me a problem	I never think that way
42. I sometimes feel alone	It is one of my main	This happens quite often	It is true but it doesn't	I never thing that way

	weakness		cause me a problem	
43. I have lost interest in sex completely	I agree completely	I often feel this way	I sometimes feel this way	I almost never feel this way
44. In our society, eating is important form of recreation and relaxation. Does that statement apply to you?	Yes, absolutely	More than a little	A little	Not at all
45. During the past week, did you eat fried foods, sauces or foods that were rich in fat?	At least twice a day	Once or twice per week	Between 4 to 7 times per week	Less than 4 times per week
46. During the past week, have you ingested "sugary" foods, such as: 1 – soft (non-diet) drinks, fruit juices, sweets, jams, sweet deserts, or any sugar: 2- potatoes, white bread, rice, pasta? Add the two categories	At least 7 servings per day on average	5 to 6 servings per day	3 to 4 servings per day	Less than 3 times per day
47. During the last month, did you make yourself vomit, take medication or laxatives, or overeat yourself in order to control your weight	Yes	No		
48. During the past week, how often did you think or feel the following: thought about the physical benefits(increased fitness, better health, more energy) of weight control	Never	A few times	Every day	Several times a day
49. During the past week, how often did you think or feel the following: thought about the	Never	A few times a day	Every day	Several times a day

psychological benefits (increased self-esteem, look better, feel happier) of weight control.				
50. During the past week, how often did you think or feel the following: thought about the physical pain (illness, disability) or fear of pain associated with your actual weight.	Never	A few times a day	Every day	Several times a day
51. During the past week, how often did you think or feel the following: thought about the psychological pain (guilt, depression, embarrassment) associated with your actual weight.	Never	A few times	Every day	Several times a day
52. During the past week, how often did you think or feel the following: had feelings of resentment about weight control	Never	A few times	Every day	Several times a day
53. During the past, how often did you think or feel the following: felt regretful about all the things I must give up for weight control (e.g. foods I lie, old and comfortable habits, favourite restaurants, parties, etc)	Never	A few times a day	Every day	Several times a day
54. During the past week, how often did you think or feel the following: felt doubtful about succeeding in weight	Never	A few times	Every day	Several times a day

control.				
55. During the past week, how often did you think or feel the following: thought that trying to lose weight or maintain a healthy weight was too big of an effort	Never	A few times	Every day	Several times a day

Appendix B – Letter of approval from Motivation Weight Management Clinic



Motivation
WEIGHT MANAGEMENT

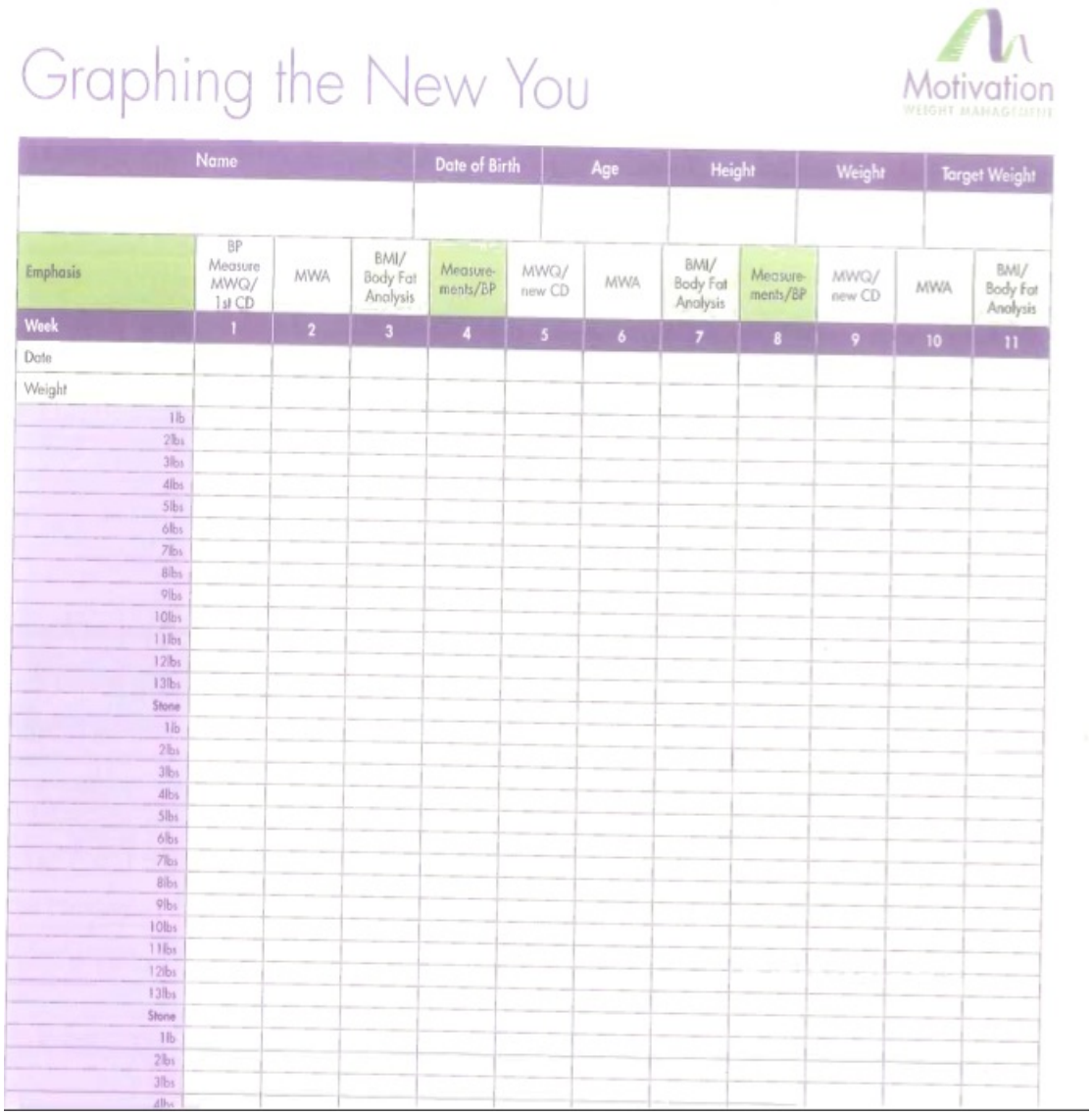
2nd Floor,
Archway House,
The Plaza,
Swords,
Co. Dublin.

Tel. 01 895 6308
e-mail: swords@motivation.ie
www.motivation.ie

I Nadine Muldoon grant Claudia Melgar
Permission to Complete her research
Project at the Motivation Weight Managment
Clinic in Swords Co. Dublin. Claudia
will be visiting the clinic to collect data
from the firsts and last month of
treatment and recruiting participants for
the follow up period of 6 Months
If you have any further Questions
Please do not hesitat to Contact me
via email @ swords@Motivation.ie or
on 01895 6308 or My Mobile on 0857351467

Kind Regards
Nadine Muldoon.

Appendix C – Weekly monitoring of weight loss



Graphing the New You

Motivation
WEIGHT MANAGEMENT

Name				Date of Birth		Age		Height		Weight		Target Weight
Emphasis	BP Measure MWQ/ 1st CD	MWA	BMI/ Body Fat Analysis	Measure-ments/BP	MWQ/ new CD	MWA	BMI/ Body Fat Analysis	Measure-ments/BP	MWQ/ new CD	MWA	BMI/ Body Fat Analysis	
Week	1	2	3	4	5	6	7	8	9	10	11	
Date												
Weight												
1lb												
2lbs												
3lbs												
4lbs												
5lbs												
6lbs												
7lbs												
8lbs												
9lbs												
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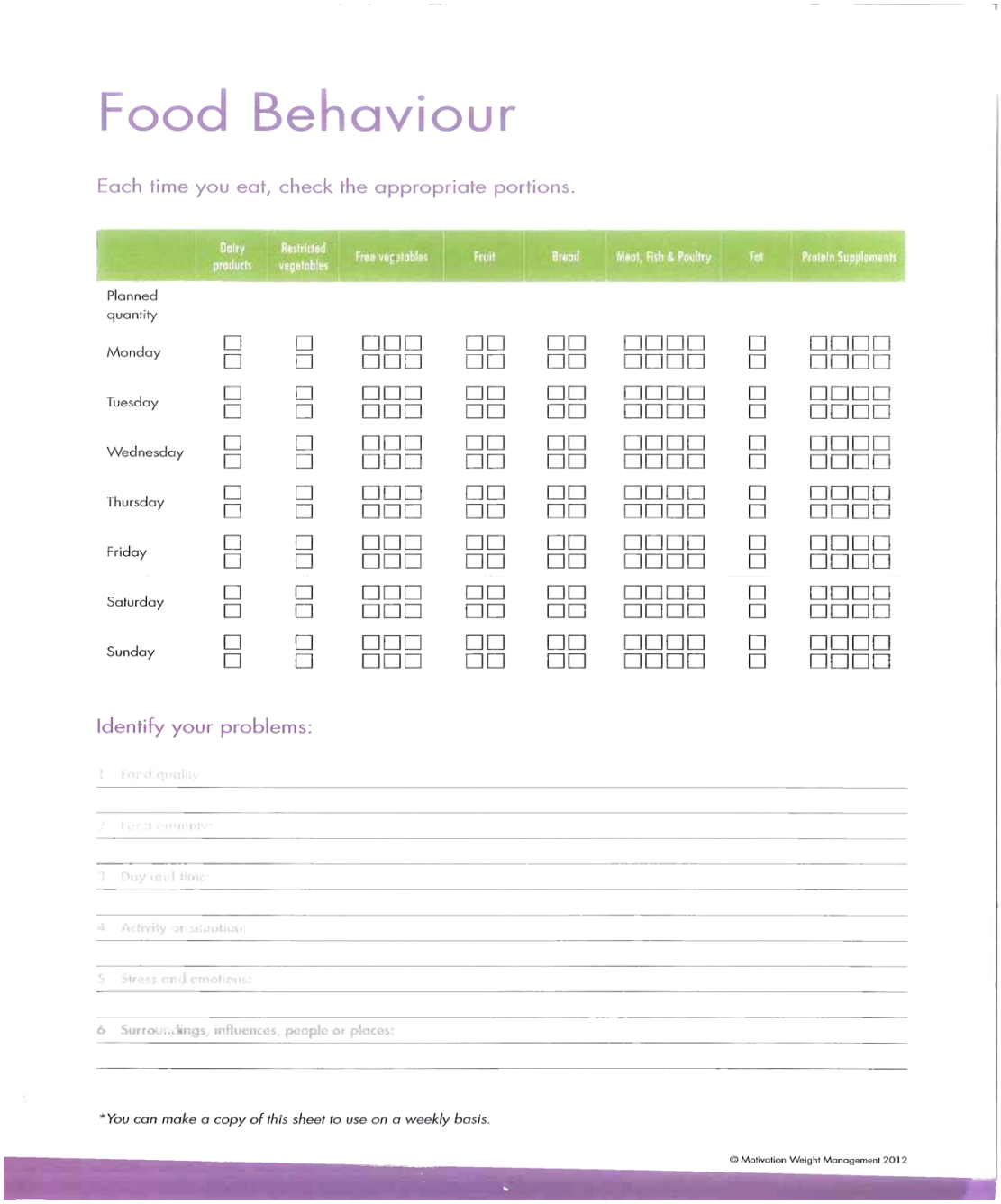
Appendix D- Food behaviour chart



Food Behaviour

Each time you eat, check the appropriate portions.

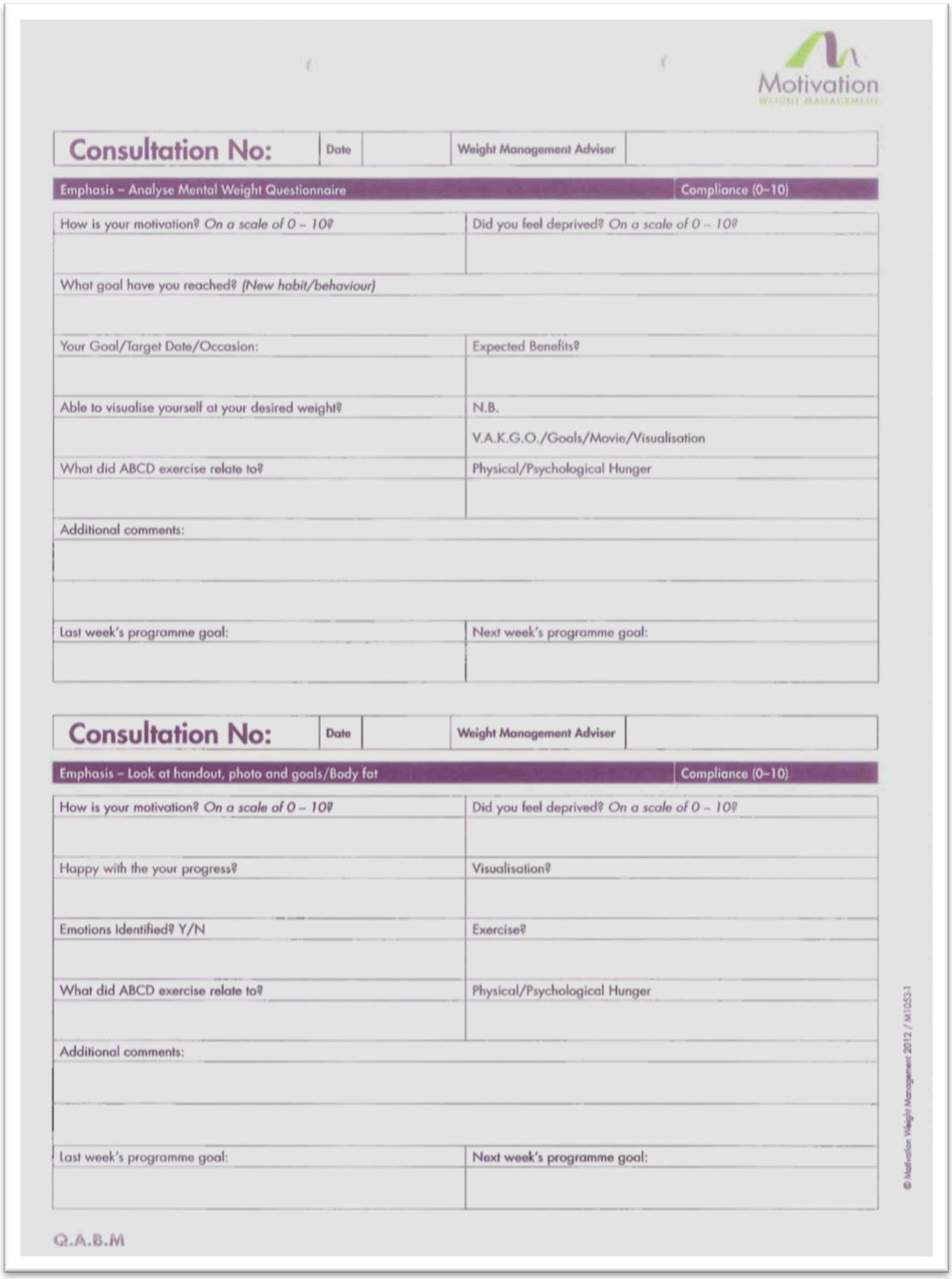
	Dairy products	Restricted vegetables	Free vegetables	Fruit	Bread	Meat, Fish & Poultry	Fat	Protein Supplements
Planned quantity								
Monday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Tuesday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Wednesday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Thursday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Friday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Saturday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐
Sunday	☐☐	☐☐	☐☐☐☐☐☐	☐☐☐☐	☐☐☐☐	☐☐☐☐☐☐☐☐	☐☐	☐☐☐☐☐☐☐☐

Identify your problems:

1. Food quality:
2. Food quantity:
3. Day and time:
4. Activity or situation:
5. Stress and emotions:
6. Surroundings, influences, people or places:

**You can make a copy of this sheet to use on a weekly basis.*

Appendix E – Weekly consultations



Motivation
WEIGHT MANAGEMENT

Consultation No:	Date		Weight Management Adviser	

Emphasis – Analyse Mental Weight Questionnaire	Compliance (0–10)

How is your motivation? *On a scale of 0 – 10?*	Did you feel deprived? *On a scale of 0 – 10?*
What goal have you reached? *(New habit/behaviour)*	
Your Goal/Target Date/Occasion:	Expected Benefits?
Able to visualise yourself at your desired weight?	N.B.
	V.A.K.G.O./Goals/Movie/Visualisation
What did ABCD exercise relate to?	Physical/Psychological Hunger
Additional comments:	
Last week's programme goal:	Next week's programme goal:

Consultation No:	Date		Weight Management Adviser	

Emphasis – Look at handout, photo and goals/Body fat	Compliance (0–10)

How is your motivation? *On a scale of 0 – 10?*	Did you feel deprived? *On a scale of 0 – 10?*
Happy with the your progress?	Visualisation?
Emotions Identified? Y/N	Exercise?
What did ABCD exercise relate to?	Physical/Psychological Hunger
Additional comments:	
Last week's programme goal:	Next week's programme goal:

Q.A.B.M

Appendix F – Motivational Encouragements

It's not just **what** you eat, it's **why**

Motivation
WEIGHT MANAGEMENT

Dear Eternal Dieter,

Hopefully this is the beginning of the end, since that is what we're working towards.

By Week 3, a lot of people I talk to are discouraged by the scale. There's a simple solution: throw it away. Stop weighing yourself. Stop dieting.

Did you know that the scales is wrong every two out of three times that you weigh yourself. The scales is mostly measuring the fluctuation of water at that particular moment. It's far more helpful to measure your success by measuring yourself or by taking an average of the scales on a monthly basis.

And if you think I'm losing the plot, don't worry, I'm okay – but I really want to help you reach your goal. And to do that, you have to change your attitude.

Don't be a loser – be a winner!

Stop thinking in terms of losing fat or inches or the habits you like, and start putting a more positive spin on it by thinking of gaining a better figure, having more energy and youthfulness, enjoying health and personal satisfaction.

Were you satisfied with your behaviour this past week? Not what the weighing scales told you – but your behaviour. Yes or no? Are you proud of at least one little thing you did, one temptation that you managed to control or one new habit? Think about it.

Stop constantly thinking about the food you can't have and start using that time to think about the incredible benefits and personal satisfaction you're gaining.

I know that it's not easy, and that it's hard to accept the needle on the scale is not going down fast enough after all the work you've put into it. But stop treating your fat and start appreciating what you're doing for your body.

All your life, you'll have to give your body what it needs to be happy and in good health. Become the master of your scales and put it on a leash!

Sincerely,

Maurice Larocque M.D.

Maurice Larocque, M.D.

WEEK 3

Appendix G - Motivational Encouragements

It's not just **what** you eat, it's **why**

Motivation
WEIGHT MANAGEMENT

Dear Objector,

"To be or not to be – that is the question." Since the dropout rate in the first month of most conventional diet programmes is over 50%, I wonder if you are still participating.

As you are reading this letter, I find it very reassuring and encouraging to see the changes you've made in your attitude. Part of the reason for this is that the dropout rate with Motivation is only 10%.

Congratulations for sticking with it – and remember that time is on your side. The more you work on changing bad habits, the more you will be happy and satisfied with yourself.

Believe me when I say that those who dropped out are not happier, nor have they solved their problems since they lost control of their eating.

During Week 4, I've grown accustomed to hearing various objections: "That's childish, useless and boring. I don't want to do it. It's not for me." Or perhaps "I'm not doing the weekly agendas or food diaries – it takes too long." Or maybe even "I don't like writing."

My answer to this is to ask you a question in return. Tell me, do you usually plan parties, trips or business meetings – or do you leave the outcome completely to chance?

For most of us, the answer is that we plan all the important things in our day-to-day life. So why should it be any different when it comes to our health? Surely it's way more important than parties and trips?

And for those of you who say you don't like to write, I reply by saying that you don't have to like it – just do it. When you only do what you want, look at yourself. Look at the results. Has doing it your own way given you the results you want?

I know I'm tough, but I care about you and want you to succeed. A true friend is someone who does his or her best to help you attain your goals.

Be wary of those who skirt around issues, are complacent and don't respect what you really want.
You don't need pity, you need motivation.

A true friend,

Maurice Larocque M.D.

Maurice Larocque, M.D.

WEEK 4

Appendix H – Weekly success rates

Your Weekly Successes

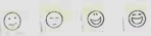
At the end of each day, for each habit that you wish to acquire and thrit you have listed, circle how you would rate your performance. At the end of each week, add up each column and evaluate how you are doing. Choose one or more habits that are easy to acquire. Your choices may be based on the suggestion that the mental weight questionnaire gave you.

Excellent

Good

OK

So-so

	New Habit	Motivational CD	Exercise	Reading
Write your goals				
Monday Results		0 1 2 3	0 1 2 3	0 1 2 3
Tuesday Results	0 1 2 3		0 1 2 3	0 1 2 3
Wednesday Results	0 1 2 3	0 1 2 3		0 1 2 3
Thursday Results	0 1 2 3	0 1 2 3	0 1 2 3	
Friday Results		0 1 2 3	0 1 2 3	0 1 2 3
Saturday Results	0 1 2 3		0 1 2 3	0 1 2 3
Sunday Results	0 1 2 3	0 1 2 3		0 1 2 3
Weekly total for each week				

Evaluation:

If you score between 14 and 21 points for an activity or goal, that's very good. After two weeks, you can add another habit or goal.

If you score between 7 and 13, continue to work on the same goal. Within the next two weeks, you should see a lot of improvement.

If you score between 0 and 7, you don't appear motivated enough or you may have a motivational block. Talk to your weight management adviser.

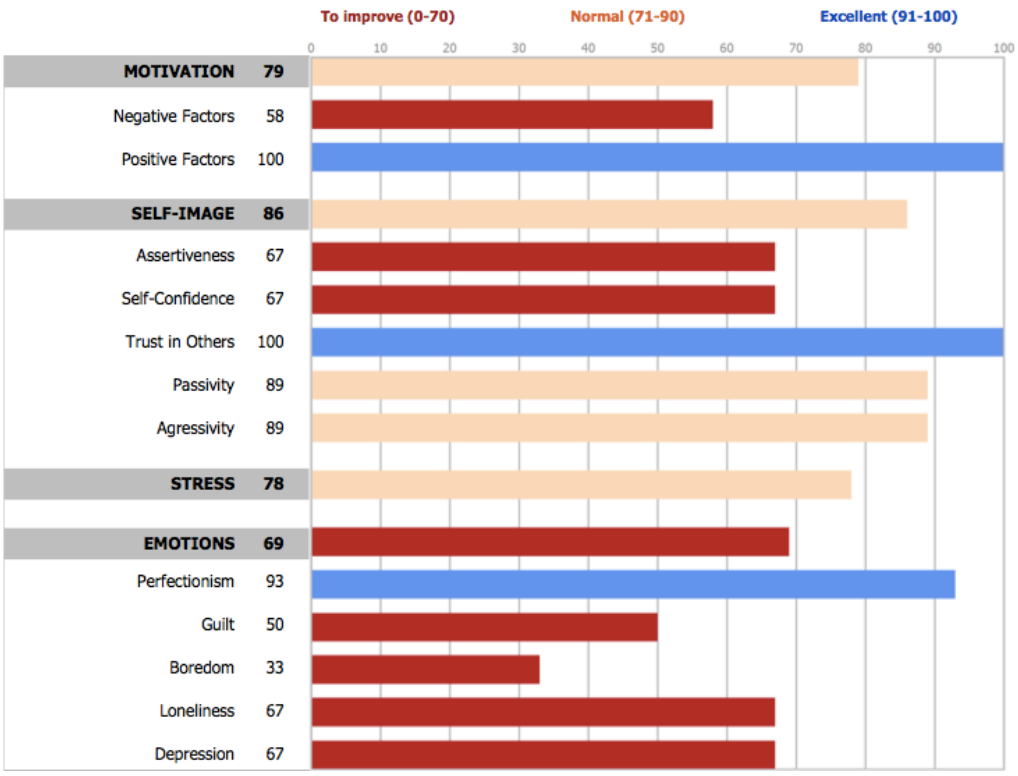
N.B. If you have chosen a goal that is not done daily (eg. walk 15 minutes, three times a week) adjust your scores accordingly. **You can make a copy of this sheet to use on a weekly basis.*

Appendix I –Results from LOQ questionnaire

Motivation
WEIGHT MANAGEMENT

Actual Weight:	**11 st 13 lbs**	**BMI:**	**33**
Desired Weight:	**9 st 7 lbs**	**Height:**	**5' 0"**
Healthy Weight:	**6 st 11 lbs - 9 st 2 lbs**	**TDEE:**	**2,132 Cal.**
Mental Weight® Results:	**9 st 12 lbs**		

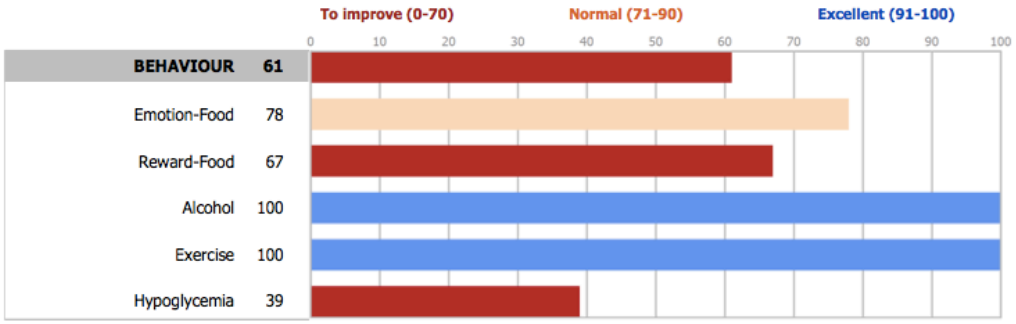
ATTITUDE **RESULTS**



Motivation
WEIGHT MANAGEMENT

Actual Weight:	**11 st 13 lbs**	**BMI:**	**33**
Desired Weight:	**9 st 7 lbs**	**Height:**	**5' 0"**
Healthy Weight:	**6 st 11 lbs - 9 st 2 lbs**	**TDEE:**	**2,132 Cal.**
Mental Weight® Results:	**9 st 12 lbs**		

HABITS **RESULTS**



Appendix J - Ethics documents & Approval

Regent's University London
School of Psychotherapy & Psychology
Application for Ethical Approval- Psychology

No study may proceed until an application for ethical approval has been submitted and granted. For collaborative research with another institution or organisation, ethical approval must be obtained from all institutions involved. This requires you to provide a letter of approval from each institution or organisation involved.

This form is to be completed if you are applying for ethical approval for any research in Psychology at Regent's University London. If you wish to conduct research which involves recruiting participants from NHS services, you will need to make a separate application to the NHS Research Ethics Committee at www.myresearchproject.org.uk. Due to the time such a review takes, students are heavily discouraged from using this route. You are likely to require a DBS check if you pursue this route and the cost would be covered by the University (more information here: https://www.gov.uk/disclosure-barring-service-check/overview)

Student applicants should discuss the completion of the form with their supervisor. A completed and signed form should be submitted to the supervisor who will review the application, complete the relevant checklist and provide a signature to confirm that all sections are complete and that the proposed research meets ethical standards. The student then submits all documentation to the Chair of the Psychology Research Ethics Committee.

Your full ethics application must include: (1) a completed and signed Ethics Application Form, (2) an information sheet, (3) a consent form, (4) a debriefing sheet and (5) any materials you will be using in your research, such as questionnaires, open-ended questions, recruitment posters, and stimuli (which can be submitted electronically via a weblink, e.g., images). Well-known measures in psychology (e.g., the NEO-PI) need not be submitted. If you are running an online study, you must submit your Survey Monkey PDF which the Lab Technician will help you to set up. Any application which does not include 1-4 and, where relevant, 5 will not be reviewed and you will encounter avoidable delays if you submit an incomplete application or if you do not adhere to the standards of this application (for example if you submit a literature review over 800 words, excluding references)

You should complete the form electronically as one document (e.g put the supporting documentation as appendices).

Your full application should be emailed to Dr Amy Harrison (**harrisona@regents.ac.uk**), Chair of Psychology's Ethics Committee. The application will be reviewed by two psychologists at the next available deadline (please see timetable published on Blackboard and on the Ethics information board outside the Psychology Programme Offices). You should expect a decision on this review within 7 working days.

The decision you receive will be either: "Approved," "approved subject to minor revision" (no resubmission required) or "not approved" (revision and resubmission of your application form will be required which addresses fully the concerns and recommendations of the reviewers). You will then have 7 days to resubmit your amended application and then you should allow a further 14 days for the final signatures to be obtained. In total, please anticipate the entire process taking 4 weeks.

Please take your time to complete this form fully and address all sections appropriately, considering all ethical issues in detail. This will offer you the best chance of receiving prompt approval for your research.

SECTION A: Overview of the Proposed Study

A1. STUDENT/STAFF (please delete as appropriate)
A2. Applicant's name: Claudia Mulligan
A3. Applicant's email address (this must be your RUL address): S00904596@regents.ac.uk
A4. Supervisor's name (where appropriate): Amy Harrison
A5. Postgraduate study
A6. Module in which the research is to be conducted PSY709
A7. Title of proposed study: What impact does a lifestyle intervention have on motivation, behviour, self-image, stress, emotions and weight.

A8: Date of submission: 23rd Of March 2016

A9 Resubmitted Applications only (if this is a new submission, go straight to A10)

A9.1. Title of the previous application:
A9.2 Submission date of previous submission:
A9.3 Details of amendments made: (you should include here, in detail, how you have addressed the concerns and recommendations of the reviewer/reviewers)

A10. Research Area (please place a cross in the area(s) of psychology which most closely reflect the theme of your research. You may choose more than one.

Clinical	X	Cognitive		Developmental	
Forensic		Health	X	Occupational	
Psychobiological		Social/Psychosocial		Sport and exercise	
Other (please provide details)					

A11. Proposed Methodology (please place a cross by the methodology that most accurately reflects that used in your proposed study)

Empirical/experimental		Self-report questionnaire	X	Qualitative	
Analysis of existing data source	X	Other (please provide details) Audit			

A12. Issues of sensitivity

Are there any sensitive elements to this study? For example, does the research involve members of political, ethnic, or religious groups/minorities, or sexually explicit material, or issues relating to sexuality, mood induction, or deception. Please see Section 3, p13 of the BPS Code of Human Research Ethics which can be found here:
http://www.bps.org.uk/sites/default/files/documents/code_of_human_research_ethics.pdf for further information

Yes	X
No	

If no, please go to question A13.
If you answered yes, please outline here the steps you intend to take to address issues that may be particularly sensitive and which may affect your participants.

Participants may find answering questions about their weight intrusive. Participants may also be reluctant to divulge their true feelings about their weight, issues, and problems in life or perceived stigma towards overweight individuals. To avoid any feelings of distress, participants will be fully informed about the research intentions before taking part. Participants will be informed of their right to withdraw at any time and will be asked to complete a consent form. Following completion of the questionnaire participants will be fully debriefed and given information on how to contact the researchers and support services.

A13. Vulnerable Populations
Does the proposed study involve working with any of the following: children under 16, clinical populations, vulnerable adults including individuals with mental or physical health problems, prisoners, vulnerable elderly participants, young offenders? Please see Section 10, p31 of the BPS Code of Human Research Ethics which can be found here:
http://www.bps.org.uk/sites/default/files/documents/code_of_human_research_ethics.pdf for further information

Yes	
No	X

If you answered yes, you will need to have a DBS check in place before commencing your study. Please provide a copy of this with this application. The University will cover the costs of this check and more information is available regarding the documents you will need to provide and about the process here:
https://www.gov.uk/disclosure-barring-service-check/overview

SECTION B: Research Proposal
This section should contain sufficient information to enable the reviewers to evaluate the ethical dimensions of the research. A research proposal will be a maximum of two A4 pages in length (size 12 font), i.e., A **MAXIMUM of 800 words,** excluding references. You must attach this proposal to your application. If your proposal is more than 800 words, it will be rejected and you will be asked to

resubmit and will need to wait for the next timetabled deadline for your project to be reviewed. The following must be included in your proposal:
B1. Brief introduction/literature review
B2. Aims and hypotheses
B3. Method -design, participants (including your inclusion and exclusion criteria), materials/apparatus used, and procedure
B4. Description of the proposed data analysis
B5. References

B1. Introduction/literature review

The increase of obesity has lead to an increase in the need for numerous interventions aimed to reduce levels regarding weight concerns, thus the need for weight management programmes (Stotland and Larocque, 2005). The rise in obesity has been mirrored by a parallel increase in the number of weight loss programmes. Research suggests empirical evidence for the long-term effectiveness of these programmes is rather limited (Upton et al, 2012). There is a current gap in the literature to investigate the effectiveness of a motivation programme. As research suggests that these programmes show significant changes in weight after 6 months of a programme, however these results are only represented in short-terms benefits. The effectiveness of commercial slimming programs is limited by high dropout rate and the lack of a perspective, longitudinal, randomised controlled trial with a comparable control group. Moreover individuals that do loose weight, virtually all return to their baseline weight within five years with weight fluctuation having profound effects on physical and mental health (Clark, 2006). Many individuals begin diets, losing and the regaining the same weight (Stotland, Larocque and Sadikaj, 2011). Stotland and Larocque (2004) designed an obesity questionnaire – Larocque Obesity Questionnaire (LOQ) unlike other available obesity measures, the LOQ includes scales measuring general emotional state as well as eating behaviours. LOQ sub scales include uncontrolled eating, physical stress responses, depression and perfectionism. They focus on the idea of mental weight attitudes and behaviourism.

B2. Aims and hypotheses

The aim of this study is to compare individuals eating habits, motivation, attitudes, self-image, stress, emotions and weight before and after treatment within a weight management clinic. It also aims to explore clients 6 months after treatment as research suggests that many clients return to their original weight. The aim is to explore the effectiveness of a motivation program focusing on change to a lifestyle experience.

This research is important as research suggests the success of maintaining weight loss after a program is not strong, however if a change to a lifestyle and consistency (once a week meetings) was implemented would this effect the outcome

1.) Participants Motivation, behaviour, self-image, stress, emotions, habits will have significantly improved after treatment.

2) Participants will have maintained positive outcomes in the follow up period

B3. Method

Design

Data will be collected from the clinic of the first month of treatment and the last month of the treatment. Participants will be recruited via email or telephone re take the questionnaire six months after treatment to see if they have fallen into old habits. The design of this study is a quantitative, longitudinal and non-experimental. The independent variable is the time point, meaning before and after treatment. The dependent variables are participant's measures on the questionnaires (weight, attitudes, motivation, self-image, stress, emotions and habits).

Participants

70 participants, both male and female are required. A purpose sample will be used to meet the required audience for the project.

Criteria

Inclusion: Female and male over the age of 16, attending motivation weight loss clinic for weight issues.
Exclusion: Individuals not attending motivation weight loss clinic for weight issues.

Measures and materials

The Larocque Obesity questionnaire - LOQ (larocque & Stotland, 2000; Stotland & Laroque, 2003). This LOQ is an on-line assessment which include four sub scales measuring uncontrolled eating (LOQ-UE), stress responses (LOQ-SR), Depression

(LOQ-D) and Perfectionism (LOQ-P). These four dimensions provide a broad overview of both eating behaviours and psychological states with potential relevance for weight control. Research highlights obese individuals seeking weight control treatment show higher levels of depression and low self-esteem compared to a control group. The materials used will be a behvaiour evaluation questionnaire looking to uncover what may be contributing to individuals weight problems. Material will be looked at to compare before and after treatment and a follow up of 6 months after no treatment/contact with the clinic.

Procedure:

Once ethical approved I will fly to Ireland for two days to bring back the data from the first and last month of treatment. Moreover for the follow up period particpants will be invited to retake the questionnaire. The consent form and debrief form will be given before the questionnaire is distributed to ensure the participant is informed. Prior to the study participants will be given an information sheet about the research. Participants will be asked a series of close-ended questions from the choice of four options.

Data analysis:

SPSS 22.0 will be used for statistical analysis. A repeated measured ANOVA will be used to analyse several dependent variables. Paired sample *t*-tests will be used to establish any significant differences between before and after treatment concerning available physiological and behavioural measures. For time period 3 data will be collected from participants that consent to re take the questionnaire 6 months after treatment.

References

Clark, M. (2006) Patient-centred weight loss programmes. *Patient Diabetes International.* 23, 123 -127 Published by Wiley Online library

Geliebter, A., & Aversa, A. (2003) Emotional eating in overweight, normal weight, and underweight individuals *Eating Behaviours* (3) 341 -347

Stotland, C,S., and Larocque, M. (2004) Convergent Validity of the Larocque obesity Questionnaire and Self-reported behavioural observations during obesity treatment, *Psychological Reports , 95*, 1031- 1042

Stotland C,S., and Larocque, M. (2005) Early treatment response as a preditor of ongoing weight loss in obesity treatment. *Journal of health psychology.* 10, 601-614.

Stotland S., Larocque, M., and Sadikaj, G. (2011) Positive and negative dimensions of weight control motivation *Eating behaviours* doi:10.1016/j.eatbeh.2011.10.003

Tice, M. D., & Bratslavksy, E. (2000) Giving in the Feel Good: The place of Emotion Regulation in the Context of General Self-Control. *Journal of Psychological Inquiry*, 11(3) 149-159.

Teixeria, J. P., Silva, N. M., Mata, J., Palmeria, L, A,. & Markland D,. (2012) Motivation, self-determination, and long-term weight control. *Journal of Behavioral Nutrition and Physical Activity*

Schneider, L. K., Panza, E., Appelhans, M. B., Whited, C. M., Oleski, L. J., & Pagoto, L. S. (2012) The Emotional Eating Scale: Can a self-report measure predict observed emotional eating. *Appetite*, 58 (2), 563 -566. doi: 10.1016/j.appet.2012.01.2012

Upton, P., Taylor, E, C., Peters, M,D., & Upton, D. (2012) The effectiveness of local child weight management programmes: an audit study. *Journal of child care, health and development.* 39 (1), 125-133. Doi:10.1111/j.1365-2214.2012.01378.x

SECTION C: Ethical Considerations

Please answer yes or no to each to the questions below by placing a cross in the appropriate box. Where requested, please provide further information.

	Yes	No
C1: Will you inform all participants of their right to withdraw from the research at any time without penalty?	X	
If you answered "no", please explain why and describe the measures you will take to ensure participants are dealt with in an ethical way		
C2: Will you provide a full debriefing at the end of the data collection phase?	X	
If you answered "no", please explain why.		
C3: Will you be available to discuss the study with participants, if necessary, to monitor any negative effects or misconceptions?	X	
If you answered "no", please explain why.		
C4: Under the Data Protection Act, participant information is confidential unless otherwise agreed in advance. Will participant anonymity be guaranteed?	X	
If you answered "no", please explain why.		
C5: Is this research, or part of it, going to be conducted in a language other than English?		X
If you answered "yes" to C5, full translations of all non-English materials must be attached to this application.		
C6: Will you be offering your participants any form or reward or remuneration for taking part?		X
C7: Does the research require you to **physically** visit another site outside of the University to collect data? (NB: all online studies are considered to be conducted on campus)	X	
If you answered "yes" to C7, you must complete the risk assessment form		

in Section D, below

SECTION D: Risk Assessment for research in psychology conducted outside RUL premises/off-campus (This DOES NOT apply to online research studies)

All items in Section D must be competed if you intend conducting research outside the University. If you answered "yes" to C7, you must complete the risk assessment below.

D1. Please provide the specific address/addresses at which the research is to be conducted.

Aprtment 2, Archway House The Plaza, Malahide Rd, Swords, Co.Dublin, Ireland

D2. What are the possible risks to your safety in conducting this research outside of the university in this/these location/locations?

There is risk no major risks as the research is ethically. As the site is a well established clinic on a busy street in Dublin. There will be a full staff team and manager on site alongside me.

D3. What steps/precautions have you taken to ensure your safety? (e.g. let friends/colleagues/supervisor know your location; meet people in public places; contact someone to let them know you have returned home safely; sit near the door if conducting research in an enclosed space; carry an alarm/phone etc).

I will let my parents and supervisor no the day and time I am going to be visiting the clinic

D4. Who should be contacted in case of an emergency?

Name: Dianne Mulligan

Address: Annadruman Castleblaney Co Monaghan Dundalk Road

Relation to you: Mother

Phone number: 00353862326244

Your mobile phone number: 00353863378996

D5. If you are conducting research in an external organization (e.g., school, shop, bank, community centre, library etc), a letter of agreement/approval from a person

at the organization authorized to provide this agreement must be submitted with this application.

SECTION E: Applicant's Checklist

Please place a cross in the box or add "not applicable" where necessary. **These sections must be completed otherwise your application will be returned and you may face delays in approval.**

E1. I confirm that I understand that the research for which ethical approval has been submitted cannot commence until ethical approval has been granted.	X
E2. I confirm I have completed all sections of this form	X
E3. I confirm I have attached all of the following documents: information sheet, consent form, debriefing sheet, any advertisement materials, test materials	X
E4. I confirm I that my supervisor has signed this form and has signed the supervisor's checklist (for student projects only)	X
E5. I am aware that any modification to the study will require resubmission (in which case, please resubmit your documentation and provide an outline of the changes in Section A9)	X
E6. I confirm that all materials and data relating to this proposal will be kept in a safe place to which only myself and my supervisor (where relevant) will have access in compliance with confidentiality guidelines. I confirm that any data stored electronically will be protected by a password known only to myself and my supervisor (where relevant).	X
E7. I confirm that I have read, understood and will abide by the British Psychological Society's Code of Ethics and Conduct and Code of Human Research Ethics.	X
E8. I attach signed acceptance letters from external organisations if the research is to be conducted within organisations outside the University	X
E9. I attach a copy of my DBS certificate (where relevant)	n/a
E10. Where my study uses Survey Monkey, I have set it up with the Lab Technician and I attach a copy of the PDF of the website	n/a

SECTION F: Supervisor's Checklist (for student applicants only)

F1. ALL sections of this application have been completed by the student	
F2. The student has included an information sheet, consent form, debriefing sheet, any advertisement materials, and test materials	
F3. I confirm that the research proposed is ethical and is consistent with the British Psychological Society's Code of Ethics and Conduct and Code of Human Research Ethics.	
F4. I confirm I am satisfied that I am able and willing to supervise the research described in this application	
F5. The student has signed this application form	
F6. If the research will be undertaken outside the University, the student has completed the risk assessment in Section D which I have read and approved.	

SECTION G: Signatures

Applicant: Claudia Mulligan
Date: 23/03/2016
Supervisor (for student applications): Amy Harrison (by email)
Date: Amy Harrison

Digital signatures are acceptable.

Applicants should email this application to the Chair of the ethics committee, Dr Amy Harrison via email: harrisona@regents.ac.uk

SECTION H: Ethical Decision
Reviewer's Decision

Approved	
Approved subject to minor revision (address ethical concerns noted below)	
Not approved	

Reviewer's name:
Reviewer's signature:
Date:
If the research is approved subject to minor revision, or if the application is not approved, the following section should be completed

Section	**Further information/amendment requested**
General Feedback (you are strongly encouraged to address this)	
Issues with the research proposal	
Ethical Concerns (if concerns are noted, you must address these and resubmit your forms, detailing in Section A9 how you have amended your application)	
Ethical concerns which need addressing	
Amendments required on attached documents (information sheet, consent form, advertisement, debrief, questionnaires etc)	

Risk assessment	
Additional ethical amendments requested	

Appendix K – Supervision agreement form

Soon after supervision has been agreed please discuss the agreement outlined below with your supervisor. You will find a number of guidelines for 'best practice' during the project which should be personalised/developed in partnership and then agreed. By countersigning this agreement with your tutor, both parties are agreeing to the terms of a supervision partnership.
Program: Submission deadline: Student: Student number: Title of Thesis
Learning Resource and Research Methods responsibilities
Students will:

- • make sure they know how to use SPSS or other appropriate analyses
- • make sure they know how to conduct a literature search, including using electronic journals

Supervisors will:

- • discuss the ethics form with their student fully before it is submitted.
- • give students help in interpreting the results of analyses. Draft Deadline and Feedback Responsibilities
  Students will:
- • meet the first draft deadlines.
- • stick to the word limits.
- • respond to feedback from their supervisor.

Supervisors will:

- • give written and oral feedback on ONE draft only within 10 working days. Your draft should not include the discussion section as it will not be read.
- • be positive and rewarding but give honest feedback. Supervisor-Student Relationship / Professional Responsibilities Students will:
- • take responsibility for their own progress and ownership of the project. It will not serve the intended learning experience if the supervisor does all the work.
- • not expect more supervision than they are entitled to.
- • Keep to the deadlines set out in the module study guide
- • contact the project module leader if they feel their supervisory relationship isn't
- • working, but try to resolve any issues with the supervisor first.
- • tell their supervisor if they are having problems.
- • take responsibility for maintaining regular contact with their supervisor and
- • keep him/her informed of progress

- • find out when their supervisor is likely to be free – don't expect to see them at
- • your convenience.
- • contact their supervisor in advance if they have to miss an appointment, provide an explanation,

and arrange another appointment.

- • Keep a record of, and follow up on, tasks set at each meeting.

Supervisors will:

- • try to build up a relationship of trust. Be approachable. Listen to student's viewpoint, and let them know that they can ask anything without judgement, or it influencing their final project mark.
- • follow up if students miss appointments without adequate reason.
- • inform the project module leader if a student is not attending or is really struggling.
- • negotiate tasks/goals/to-do lists at each appointment to be completed for next meeting.
- • keep a record of appointments and attendance, and whether tasks set from previous meeting

have been accomplished.

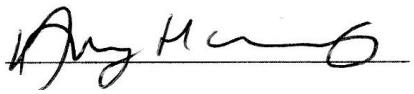
- • answer student e-mails or other queries in a timely manner, normally within three working days.
- • be equitable in how much supervision they give each student.

Together, students and supervisors will:

- • establish lines of communication (e-mail, phone etc) from the start.
- • keep appointments, be on time.
- • be flexible in making appointments – be prepared to come in on additional days to lectures.
- • make your next appointment at the end of the previous one and write it down.

Student's signature:

Supervisor's signature:



Student's Name:

Claudia Mulligan

Supervisor's Name:
Dr Amy Harrison

Date...12..../....04...../...2016.....

Date...12...../....04...../...2016.....

Appendix L – Ethics approval form confirmation

Regent's University London
School of Psychotherapy & Psychology
Application for Ethical Approval- Psychology

Dear Claudia Mulligan
Re: Psychology Research Ethics Committee Ref: 16.33
Title of Study: What impact does a lifestyle intervention have on motivation, attitudes, habits, self-image, stress, emotions and weight?
Date: 05.05.16
Supervisor: Dr Amy Harrison

Thank you for your application to the ethics committee for approval of your psychology study.

I am pleased to inform you that your study has been approved by the Committee and you may now commence your research. Please quote the reference above on any further correspondence with the Committee and ensure that it is clearly displayed on any recruitment materials as well as your information and consent form to inform participants that ethical approval has been granted for this study to be undertaken.

This letter constitutes evidence of formal ethical approval for your study and can be included in the appendices of your final research report where required.

Thank you for your application and good luck with your project.

Yours sincerely,
Dr Amy Harrison
Psychology Ethics Committee Chair

Appendix O – Information sheet

School of Psychotherapy and Psychology
Regent's University London

PARTICIPANT INFORMATION SHEET

PROJECT TITLE

What impact does a lifestyle intervention have on motivation, attitudes, behaviour, self-image, stress, emotions and weight.

INVESTIGATOR

Claudia Mulligan

INVITATION

You are being asked to take part in a research study on the effects of a motivation weight loss program. The aim of the study is to explore some of the possible benefits of these weight loss programs focusing on a lifestyle change. Research is suggests the success of these programs after treatment is completed is limited. As a Psychology MSc student of Regent's University in London, this study will be the focus of my dissertation. My Supervisor, Dr. Amy Harrison from Regent's University London, whose interests and areas of expertise include body image, will be overseeing this study from beginning to end. The Psychology Research Ethics Committee has approved this study.

WHAT WILL HAPPEN

Participants will be requested to re take the mental weight questionnaire consisting of 55 short questions from a choice of 4 answers. In the email I will attach a link to the questionnaire where you must fill in your username and password from your previous login codes. The questions are the exactly the same as previous occasions.

Please go to: http://new.poidsmental.com to re-take questionnaire

TIME COMMITMENT

The questionnaires will take 15 minutes to complete in total.

PARTICIPANTS' RIGHTS

Participation in this research study is completely voluntary. Even after you agree to participate and begin the study, you are still free to withdraw at any time and without having to give a reason for doing so.

BENEFITS AND RISKS/DISCOMFORT

There are no known benefits or risks for you in this study. However if you feel very negatively about your body image or feel that you may have an eating disorder, it would be beneficial to speak to a medical professional.

COST, REIMBURSEMENT AND COMPENSATION

Your participation in this study is voluntary. You will receive no remuneration in return for your participation.

CONFIDENTIALITY/ANONYMITY

The questionnaires that are completed will be kept completely anonymous and confidential. The data we collect does not contain any personal information about you except your age group, gender or results on the LOQ questionnaire. The data collected and analysed will be used solely for my MSC dissertation. No one will link the data you provided to the identifying information you supplied.

FOR FURTHER INFORMATION

Dr. Amy Harrison will be glad to answer your questions about this study at any time. You may contact her at harrisona@regents.ac.uk.
If you would like to find out about the final results of this study (August 2016), you should contact either myself S00904596@regents.ac.uk or Amy harrisona@regents.ac.uk.

Appendix M – Consent Form

Regent's University London
School of Psychotherapy and Psychology
Written Informed Consent- Psychology

Title of study: What impact does a lifestyle intervention have on motivation, attitudes, habits, self-image, stress, emotions and weight.
Researcher's name: Claudia Mulligan
Supervisor's name and email (for student projects): Amy Harrison.
harrisona@regents.ac.uk

I have understood the details of the research project as explained to me by theresearcher, and confirm that I consent to act as a participant: ☐

I have been given contact details for the researcher in the information sheet: ☐

I understand that my participation is entirely voluntary, the data collected during the research will not be identifiable, and I have the right to withdraw from the project at any time without any obligation to explain my reasons for doing so: ☐

I further understand that the data I provide may be used for analysis and subsequent publication, and I provide my consent that this may occur: ☐

Name _____

Signature _____

Date: _____

Two copies of this form must be signed – the participant should keep one and the researcher should keep the other.

Appendix N- Debrief Form

The purpose of this study was to investigate what impact a lifestyle intervention has on motivation, attitudes, behaviour, self-image, stress, emotions and weight.
The participants consisted of men and women who are attended motivation weight loss clinic. In order to measure participant's weight issues Laqoque Obesity Questionnaire was used (LOQ).

It is anticipated that participants who engage in a motivation weight loss program will have improved in all areas (weight, stress, emotions). Moreover these positive outcomes will be maintained in the follow up period.

Thank you very much for your time. If you have any questions about this study, please contact me Claudia Mulligan at S00904596@regents.ac.uk, or my supervisor Dr. Amy Harrison at harrisona@regents.ac.uk.

As this topic is potentially distressing, if you require further support around this topic, please contact a medical practitioner who can advise you on specific mental health services or an online support site such as Beat (b-eat.co.uk).

Confidentiality

The content of the data from this study will be kept confidential. Furthermore, every participant has the right to withdraw from the study at any time. If you would like to remove your data or withdraw from the study please contact me, Claudia mulligan (S00904596@regents.ac.uk).

Findings

After completion of the study, if you would like to receive a summary of the findings, please feel free to contact us.

Please keep a copy of this form for your future reference. Thank you for your participation in this study.