

**Psychological Distress in Clinical Obesity:
The Role of Eating Disorder Beliefs and Behaviours,
Social Comparison and Shame.**

Thesis submitted as part requirement for the
fulfilment of the degree of Doctorate of Clinical Psychology
University of Leicester

by

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Abstract

A review of the literature suggested that cognitive theories of eating disorders and social ranking theory of psychological distress may contribute to the understanding of psychological factors in the maintenance of obesity. This study examined the relationships between psychological distress and eating disorder beliefs and behaviours; and social comparison beliefs and submissive behaviours and shame, in a sample of seventy four clinically obese ($BMI \geq 30$) males and females currently attending NHS dietetic services for support with weight management.

The results found high levels of psychological distress within this sample. Eating disorder beliefs, binge eating behaviour, negative social comparisons, submissive behaviours and shame were all found to be associated with psychological distress. The high inter correlations between the variables and their association with psychological distress suggested they were all measures of a single construct of distress in this sample population. Body Mass Index was not found to be associated with psychological distress in this sample.

These findings provide support for the applicability of cognitive models of eating disorders and social comparison theory to an understanding of distress in clinical obesity. A comprehensive theoretical maintenance model of psychological distress and further weight gain in obesity is proposed based on these findings. The results highlight clinical assessment, formulation and treatment implications for the care of obese individuals presenting to weight management services and areas for future research are suggested.

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1 Introduction

Clinical obesity is a serious and prevalent public health concern (British Nutrition Foundation Task Force, 1999; Sarlio-lahteenkava, Stunkard & Rissanen, 1995). The social and psychological consequences for the individual can be severe and are well documented (Brownall, 1991; Riva, 1996; Falkner, French, Jeffrey, Neumark-Sztainer, Sherwood & Morton, 1999; Friedman & Brownell, 1995; Goldsmith, Anger-Feld, Beren, Rudolph, Boeck & Aronne 1992; Stunkard & Wadden, 1992). However, the wider social consequences of obesity are also significant. For example, although the direct economic cost of treating obesity is currently estimated at being between 2-4% of the total NHS expenditure, indirect costs of the consequences of obesity, such as absenteeism and lost productivity, mean that the actual economic costs are considerably higher (Seidell, 1995).

Obesity has recently been referred to as a ‘world wide epidemic’ (World Health Organisation, 1997) due to its prevalence and rapid rise in incidence. In England, the prevalence of obesity in the adult population has effectively doubled in the last 20 years and currently stands at 17% of men and 20% of women (British Nutrition Foundation Task Force, 1999). This figure is set to rise and reflects both an increase in the number of people becoming obese and the number of people already obese who are failing to lose weight (Hughes and Martin, 1999).

The importance of the treatment and prevention of obesity has recently been made explicit through its association with coronary heart disease and mental ill health in the National Priorities Guidance for the National Health Service (NHS Executive, 1999/00 – 2001/2).

These strategies have emphasised the need for action at both national and local levels to prevent the incidence of obesity from continuing to rise. A key target in these policies is the development and promotion of effective treatments for obese individuals who are already suffering from weight related medical complications and who are experiencing the adverse psychological and social consequences of obesity.

As a result of a plethora of research over the last few decades, which has failed to identify a consistent aetiological model, obesity is now increasingly recognised as a disorder that has multiple causes and therefore multiple risk factors (Friedman & Brownell, 1995). The rapid increase in prevalence suggests obesity is strongly determined by environmental factors and, although the role of genetic factors remains significant (Fairburn & Cooper, 1996), the research focus has now shifted from biological aetiological models and treatments to an emphasis on the importance of psychosocial factors in the development and maintenance of obesity.

Currently, the most widely used forms of treatment for obesity are weight loss regimes and behavioural programmes focusing on modification of eating patterns. However, these treatments display limited effectiveness and there is a growing recognition that they may fail to address important core issues underlying the disorder (Foryet, Walker & Goodrick, 1996; Marcus, Wing & Hopkins, 1988; Wilson, 1996). Recently, the British Dietetic Association outlined their understanding of the prevention and treatment of obesity as being “a difficult and complex endeavour requiring more than the provision of simple nutritional information and advice on how to use this” (British Dietetic Association, 1997). Recent developments in the understanding of psychological distress and obesity have led to a growing recognition of the role of cognitive and affective factors as a focus for

intervention (Foryet et al., 1996; Fairburn & Cooper, 1996; Marcus et al, 1988), especially as psychological factors have been identified as being important for some obese individuals in the prevention of weight loss (Fitzgibbon & Kirschenbaum, 1990). The development of effective preventative and treatment strategies for obesity may depend on the identification of specific factors associated with psychological distress in this client group (Goldsmith et al, 1992), although research in this area is currently fairly limited.

As an initial step towards addressing this limitation, this study is concerned with understanding the role of cognitive and affective factors in the maintenance of psychological distress in individuals who are clinically obese. Two psychological models of distress are therefore explored in relation to this client group.

Firstly; cognitive theories of eating disorders, which potentially offer an empirically based framework for developing a theoretical understanding of psychological distress in obese individuals, are reviewed. Research concerning cognitive factors in obesity per se is limited. However, there is a large body of literature concerning cognitive factors in individuals who binge-eat. As binge eating is a particular problem for many obese individuals (Agras, 1997; Beumont et al, 1994), this literature shall be examined. Recent work in developing diagnostic criteria for Binge Eating Disorder has identified cognitive factors (e.g. emphasis on evaluating self-worth in terms of weight and shape) as important in mediating the relationship between psychological distress and weight gain/obesity (Marcus, Smith, Santelli & Kaye, 1992).

Secondly; theories associating psychological problems with the perception that one is in an involuntarily subordinate position and the perception of self as inferior to others (Gilbert, 1993) is considered as an alternative, or complimentary explanation of the cause of

psychological distress in obese individuals. Research concerning the negative social consequences faced by obese individuals (Crocker, Cornwell & Major, 1993; Riva, 1996) suggests that psychological distress is likely to be associated with the internalisation of stigmatised roles and the consequent effects on beliefs and behaviours.

This study aims to examine the relative contributions of the key variables associated with these models (i.e. eating disordered beliefs, social comparison, submissive behaviour and shame) to psychological distress in obesity. This chapter will review the current understanding of psychopathology in clinical obesity; will discuss the two aforementioned models; and will evaluate what they are able to offer in terms of understanding psychological distress in clinical obesity.

1.1 Psychological Distress in Obesity.

Studies that have compared obese and normal weight populations have failed generally to find consistent differences in psychological status and functioning between these two groups (Kolotkin, Revis, Kirkley & Janick, 1987; Fitzgibbon & Kirchenbaum, 1990; Goldsmith et al, 1992; Stunkard & Wadden, 1992). A contentious conclusion from this work is that obesity is not associated with any particular mental health problem or personality profile or disorder and therefore does not carry a risk of psychological problems. However, reports from many individuals who are overweight, and from clinicians working in the field do not support this conclusion. Furthermore, a consistent literature identifying a strong negative cultural bias towards the obese, and the impact of this stigmatisation, has also been demonstrated (Crocker et al, 1993). Recent research indicating that psychological well being improves subsequent to weight loss (Mussell,

Mitchell, de Zwaan, Crosby, Selm & Crow, 1996) also appears to undermine this conclusion. In a review of the relevant literature, Friedman and Brownell (1995) have argued that to conclude that obesity and psychological distress are unrelated would be premature. The pattern of findings concerning distress and obesity appears to suggest that a relationship does exist, although it is more complex than has traditionally been reported. The effect of obesity appears to vary between individuals, creating serious psychological problems in some, mild problems in others, and perhaps no distress at all in others. Attention, it is now argued, should move away from the question of whether obese persons suffer psychological distress more so than non-obese persons and address the more relevant question 'why do some obese people suffer psychological distress and others not?'. It has been suggested that such a question may be answered by the examination of the risk factors present within the obese population (Friedman & Brownell, 1995; Molinari, Ragazzoni & Morosin, 1997).

More recent research has attempted to identify the factors associated with psychological distress in obese populations. As a result a number of risk factors have now been identified which, when combined with obesity, make it more likely that the person will experience psychological distress. These risk factors are female gender, juvenile onset of obesity (Adami, Meneghelli & Scopinaro, 1998; Marcus et al., 1992), higher degrees of obesity (Telch, Agras & Rossiter, 1988), disordered eating behaviour, poor body image, experience of teasing or bullying (as a result of shape or weight) (Fabian & Thompson, 1989) or experience of repeated failures to lose weight (Molinari, et al, 1997). Therefore, whilst obesity itself is not necessarily associated with psychopathology, factors have been identified which are believed to undermine self-esteem and interpersonal relations to the detriment of personal well being. This is an important step forward in identifying factors which are associated with distress in obesity, as psychological distress is considered to

play a part in preventing weight loss and furthering weight gain via the mediating role of disordered and maladaptive eating patterns (Kaplan & Ciliska, 1999).

Although obese individuals in the general population do not appear to display significantly differentiated levels of psychological distress from non-obese individuals, those who attend treatment programmes for weight loss do display increased levels of general psychopathology, eating disordered symptomatology (e.g. association of self-worth with weight and shape, binge eating and body image disturbance) and social isolation, when compared with obese individuals who are not seeking treatment and/or with normal weight controls (Fitzgibbon, Stolley & Kirschenbaum, 1993; Goldsmith et al., 1992, Prather & Williamson, 1988; Spitzer, Stunkard, Yanovski, Marcus, Wadden, Wing, Mitchell & Hasin, 1993; Stunkard & Wadden, 1992). Although the treatment programmes included in the research are predominantly hospital based weight loss interventions, the findings they have identified however, are consistent across other forms of weight loss programmes, such as community based commercial slimming clubs and Overeaters Anonymous groups (Spitzer et al., 1993). It is argued that individuals referred to or attending such programmes are experiencing difficulty losing weight and are at risk of encountering significant distress as a result of their obesity and are consequently considered to be more at risk of developing psychological problems (Friedman & Brownell, 1995; Thompson & Thomson, 2000). The literature concerning this area notes that research attempting to understand the psychological problems generated by obesity needs, as a first step, to focus on individuals seeking treatment in order to clarify the important variables that distinguish levels of distress within this population (Friedman & Brownell, 1995; de Zwaan, 1997; Fitzgibbon & Kirschenbaum, 1990; Molinari et al, 1997). Identifying the variables associated with psychological distress has important implications for the assessment and treatment of obesity (Fitzgibbon & Kirschenbaum, 1990).

1.2 Eating Disorder Symptomatology in Obesity

A range of eating disordered symptomatology has been identified as being important in obesity and these will be discussed in the following section.

1.2.1 Obesity and Binge Eating Behaviour

The term ‘binge’ is problematic to define and interpret, as it has no generally accepted specific meaning (Cooper & Fairburn, 1987). For example ‘binge eating’ has both a precise clinical definition as well as a common, vague, everyday notion of excess (Fairburn & Beglin, 1994). Attempts to measure ‘binge eating’ have been further complicated by the fact that even among people who experience episodes of uncontrolled overeating, it is unlikely that every episode will be identical. Binge eating typically occurs in private (resulting in few naturalistic opportunities to observe it) and is often accompanied by an emotional numbing (Wilfrey, Schwartz, Spurrell & Fairburn, 1997) and by high levels of shame and guilt (Sanftner, Barlow, Marschall & Tangney, 1995). It is therefore likely to be under-reported in clinical and research interviews. However, despite these conceptual and practical difficulties, it would appear that binge eating behaviour is a particular problem for obese individuals (Agras, 1997; Beumont et al, 1994).

Obesity is clearly linked to Binge Eating Disorder (BED) in DSM IV (the description of the essential features of BED state that “the vast majority of individuals who have the disorder have varying degrees of obesity”). Indeed, many authors argue that BED refers primarily to overweight people who binge eat (Beumont et al., 1994). BED, initially identified by Stunkard in 1959, is included in the fourth edition of the diagnostic and statistical manual of mental disorders (DSM-IV; American Psychiatric Association [APA],

1994) as an example of an eating disorder not otherwise specified (EDNOS) and is described in an appendix of DSM IV as a provisional diagnostic category requiring further study. BED is conceptualised as an eating disorder characterised by binge eating without compensatory behaviour to avoid weight gain. The basic criteria for BED include recurrent binge eating; associated behavioural features such as rapid or solitary eating; marked distress regarding the binge eating; a minimum average occurrence of binge eating of two days a week for at least six months; and absence during the course of anorexia or bulimia nervosa. BED diagnostic criteria for frequency focuses on binge days per week rather than episodes of bingeing per se, as this is presumed to provide a more accurate measure of binge eating in individuals with this disorder. Although obesity is not included as a diagnostic criterion for BED (DSM IV) it is commonly associated with this disorder (Rossiter, Agras, Telch & Bruce, 1992).

The level of binge eating in obese individuals seeking treatment is a matter of contention and appears to vary depending on the methodology used in the research. Studies providing data on obese binge eaters have used varying inclusion criteria (e.g. infrequent purge behaviours, loss of control) and inconsistent definitions of binge eating (reflected in the measures used). Fitzgibbon et al (1993) reported that as many as 30 – 45% of people entering weight reduction programmes reported clinical levels of binge eating behaviour. However, more recent studies, using interviews to measure binge eating episodes rather than questionnaires, have yielded much lower numbers. Stunkard, Berowitz, Wadden, Tannkut, Reiss & Young (1996) found that only 3.4% of the obese women in their sample, who had identified themselves as binge eaters on questionnaire measures, were eligible for classification of BED following interviews based on DSM criteria. This resulted in a total of 7.6% of the weight reduction participant sample in this study meeting criteria for BED. Although this is lower than frequencies found in other studies, it is higher than reported

levels of binge eating in the obese non-treatment seeking population (estimates range from 1- 5%: Fairburn et al., 1993; Spitzer et al., 1992, 1993). Therefore, binge eaters appear to be a distinct subgroup of obese individuals seeking treatment for weight management (de Zwaan, 1994; Kaplan & Ciliska, 1999; Molinari et al, 1997) and so binge eating constitutes a variable that differentiates distressed obese individuals from non-distressed obese individuals in treatment seeking samples. Research appears to indicate that the presence or absence of binge eating is clinically significant in treatment seeking subgroups of obese individuals (Brownell & Wadden, 1992; Grissett & Fitzgibbon, 1996) . Accordingly, the majority of literature that has focused on the relationship between psychological distress and obesity has focused on binge eaters (de Zwaan et al, 1994; Marcus, Wing, Ewing, Kem, Gooding & McDermott, 1990, 1992, Kaplan & Ciliska 1999; Spitzer et al, 1992; Telch & Agras, 1994; Yanovski, Nelson, Dubbert & Spitzer, 1993). The literature concludes that the presence or absence of binge eating behaviour is clinically significant in obese individuals seeking treatment, independent of weight (Fitzgibbon et al., 1993; Marcus et al., 1992; Spitzer et al., 1993; Telch & Agras, 1994).

Research concerning binge-eating behaviour in obese individuals has distinguished between 'bingeing' (i.e. eating more than is considered appropriate during a set period of time, given the circumstances and experiencing a loss of control regarding this eating episode) and 'Binge Eating Disorder' (i.e. fulfilling the diagnostic criteria for this disorder) (Grissett & Fitzgibbon, 1996; Robertson & Palmer, 1997; Stunkard et al, 1996). The literature therefore provides strong evidence in favour of a continuum of severity regarding binge eating and psychological distress, rather than a dichotomy of binge eaters versus non-binge eaters among obese persons, with those individuals who meet diagnostic criteria for Binge Eating Disorder being identified as the most severely disturbed.

1.2.2 Binge Eating in Obesity: Research Implications

While the clinical features of the two officially recognised eating disorders, anorexia nervosa and bulimia nervosa, are well defined, an understanding of the clinical features of binge eating disorder (BED) is less well advanced (Glenny, O'Meara, Melville, Sheldon & Wilson, 1997). Although there is little doubt concerning the clinical value of assessing for binge eating behaviour in the obese, the specific criteria for Binge Eating Disorder continue to be under review. Therefore, although the need to measure for binge eating behaviour has been made explicit, it also needs to be noted that definitions and assessment measures for this rather complex concept are not always consistent.

Recent research has provided compelling support for emphasising a more subjective dimension to a 'binge', especially as patients who interpret the consumption of an objectively small amount of food as a 'binge' could be considered more disturbed psychologically than those who use the term only for true 'gorging' episodes (Beumont et al., 1994). The validity and significance of the frequency criteria of two days per week for the last six months remains controversial, since research has found few differences on measures of psychological distress, weight and shape concern, restraint, psychiatric distress and history of seeking treatment for an eating or weight problem, between individuals who reported recurrent binge eating at the severity required for a diagnosis of BED and individuals who reported recurrent binge eating at a minimum average level of only once a week for six months – i.e. 'subthreshold binge eating disorder' (de Zwaan, 1994; Striegel-Moore, Wilson, Wilfrey, Elder & Brownell. 1998; 2000; Wilson et al., 1993).

The necessity of including some of the specific criteria for BED such as level of distress experienced and associated behavioural features has also been questioned, as research indicates that it is the presence and severity of the binge eating behaviour per se that is important (Grissett & Fitzgibbon, 1996). Additional research has indicated that ‘over concern with weight and shape’ should be included in the diagnostic criteria for BED. Eldredge and Agras (1996), using the self-report version of the Eating Disorders Examination (EDE-Q; Fairburn & Beglin, 1994) to examine weight and shape concerns in individuals seeking weight loss treatment in a commercial programme, found that individuals with Binge Eating Disorder demonstrated significantly greater concern over their weight and shape than non-disordered eating groups and control subjects, irrespective of weight. They conclude that over concern with weight and shape appears to cluster with the other features of BED and should therefore be included in the diagnostic criteria for BED.

1.2.3 Binge Eating in Obesity: Clinical Implications

The literature suggests that disturbances over control of eating (whether these meet the full criteria for BED or only refer to sub-clinical patterns of disordered eating) may be caused, maintained or exacerbated by dietary restraint. Research in this area shows that obese individuals, especially those seeking treatment for their obesity require a thorough assessment to identify binge eating or other patterns of disordered eating, so that treatments can be effectively and systematically matched to individual problems (Wardle, 1996).

Clearly, the relationship between obesity, dietary restraint, and eating disordered beliefs is complex. Thus, approaches aimed purely at dietary restraint to control obesity may at best be ineffectual and at worse lead to an exacerbation of obesity and psychopathology for a

subgroup of obese patients, yet these remain the most commonly used approaches in the treatment of obesity (Cowburn & Summerbell, 1998, Wilson, 1994). Further research to distinguish between groups for whom this approach is effective and groups for whom interventions need to focus on specific cognitive and affective factors relevant to this client group is clearly needed (Glenny et al, 1997; Marcus et al, 1992).

1.2.4 Extreme Concerns about Shape and Weight in Obesity

Concerns about weight and shape are central to cognitive models of anorexia nervosa and bulimia nervosa, and other eating disordered behaviours are believed to be secondary to these concerns. This theory has been supported by numerous studies confirming cognitive biases towards weight and shape related information (Garner & Garfinkel, 1985; Cooper et al, 1992; Cooper, 1997; Fairburn, 1985). However, increased weight and shape and body image concerns are not limited to anorexics and bulimics. The findings from studies of obese individuals who have sub-threshold and full syndrome Binge Eating Disorder, for example, indicate that increased weight and shape concerns in this patient group, relative to healthy controls, are associated with psychological distress and highlight the pervasiveness of body image concerns among this clinical population (Stiegel-Moore, Dohm, Soloman, Fairburn, Pike & Wilfrey, 2000). The association between body image dissatisfaction and body weight is well documented (Stiegel-Moore et al, 2000) - increased weight status has been found to be associated with increased weight and shape concerns amongst individuals with disordered eating patterns, including obese recurrent overeaters (Marcus et al, 1992).

Although the area of body image distress in obesity has not been widely studied, few obese individuals appear content with their size and their appearance (Riva, 1996). Recent research in this area highlights the following points. Firstly; individuals who have been obese since childhood are more likely to have a negative body image than are those who developed obesity in adulthood. Secondly; negative body image associated with juvenile obesity is less likely to change as a result of weight loss alone but is thought to be related more to core schema or personality traits (Adami et al., 1998). Thirdly; obese individuals who have experienced teasing and humiliation about their size and weight are more likely to develop a negative body image irrespective of when they became obese (Thompson & Heinberg, 1993). Fourthly; adolescence is the period of greatest risk for the development of body image dissatisfaction and the stigma of being overweight is especially problematic for females from the age of adolescence onwards (Chaiken & Pliner, 1987).

Body image concerns in obesity are associated with normalised pressure to lose weight (Lowe, 1996). Cash, Counts & Huffine (1990) have found that overweight subjects have more weight related anxieties, more negative body experiences and more frequent past year dieting experiences than normal weight subjects. This is perhaps unsurprising given the pervasiveness of the heightened cultural endorsement for the thin ideal (Striegel - Moore, Silberstein & Rodin, 1986; Stice, 1994) and the pressures placed on obese individuals to conform to this ideal. Studies that reveal the cost of obesity in potential marital relationships (Sobal et al, 1989) and to employment prospects (Sorensen, 1995) go some way to revealing the social costs of not meeting up to contemporary standards of thinness. Furthermore, weight and shape concerns may be reinforced in people who are obese because of the detrimental and dangerous effects of obesity on their health (Beumont, Garner & Touyz, 1994).

1.2.5 Dietary Restraint in Obesity

‘Dietary restraint’ refers to the restriction of food intake in order to influence shape and weight. Strict dieting or fasting behaviours are included in the clinical diagnoses of anorexia nervosa and bulimia nervosa. However, dietary restraint is not included in the criteria of the more recently developed Binge Eating Disorder (BED), even though BED is more relevant to obese individuals. The relationship between binge eating, disinhibition and dietary restriction (Fairburn 1985; Garner & Garfinkel, 1985) is unclear. Some studies have identified caloric deprivation as being associated with an increased occurrence of binge eating (Agras & Telch, 1998; Haiman & Devlin, 1997; Spitzer et al., 1993; Telch et al, 1998), whereas other studies have found no relationship between binge eating and increased dietary restraint (Mussell et al, 1996). The inconsistency in these findings appears to support differential diagnoses for bulimia nervosa and binge eating disorder, as discrepant findings may be understood in terms of the different patient samples used in these studies (bulimia patients in the former and binge eating disorder patients in the latter).

Marcus et al. (1992) looked at differences between obese binge eaters and bulimia nervosa patients. Although they found no significant differences in weight, shape and eating concerns, bulimia patients had significantly higher scores on the restraint subscale of this assessment. Thus, although obese binge eaters display an intense preoccupation with shape and weight, and shape and weight play an important role in their self-evaluation, they report levels of restraint significantly lower than those reported by bulimics. Marcus et al therefore conclude that obese binge eaters frequently report strict dieting standards but do not necessarily obey these rules. Many obese binge eaters report being overwhelmed by repeated failures and so abandon all efforts to diet. It has also been hypothesised that

normal weight binge eaters differ from obese binge eaters by adhering to strict dieting regimes between binges.

Research findings concerning the relationship between dietary restraint and binge eating in obesity are inconclusive. Obese binge eaters are less likely than obese non bingers to employ specific dieting strategies (e.g. food restriction, avoidance of specific foods, adherence to a specific diet plan) to control their weight (Wilfrey, Agras, Telch, Rossiter, Schneider, Golomb-Cole, Sifford & Raeburn, 1993). Failure to adhere to set dietary standards and the experience of repeated weight loss disappointments have been found to be associated with increased psychological distress and increased binge eating behaviour.

1.2.6 Purging Behaviours in Obesity

Obese individuals demonstrate low levels of purging behaviours when compared to other eating disorder groups (Marcus et al., 1992; Wilson, Novas & Rosenblum, 1993). However, purging behaviours are not unknown in this population. Using the Eating Disorder Examination (EDE) (Fairburn & Cooper, 1993), Marcus et al (1992) identified that 6.7% of their sample engaged in episodes of self-induced vomiting and 6.7% misused laxatives during the 28 day assessment period. Other studies have also identified similar rates in obese samples (Marcus, Wing & Hopkins, 1988; Hudson & Williams, 1988). Thus, it would appear that purging behaviours do occur in the obese but often without enough frequency to be considered 'regular'.

1.3 Cognitive Models of Eating Disorders and their Relevance to Obesity

Research suggests that cognitive factors are important in the aetiology and maintenance of eating disorders (Butow, Beumont & Tuoyz, 1993; Fairburn & Cooper, 1989; Vitousek & Hollon, 1990). Individuals with eating disorders are considered to have more negative thoughts relating to body shape, weight and diet when compared with individuals who do not have such disorders. Excessive concerns about approval from others and the evaluation of self-worth on the basis of performance accomplishments are central to the eating specific and generalised psychopathology observed. Individuals who have troubled eating patterns tend to make inappropriate connections between their self-esteem, weight and approval from others. Their self-esteem cognitions are therefore related to extreme concerns about shape and weight and are likely to underpin the 'fear of weight gain' hypothesised as being the core psychopathology in eating disorders (Cooper, 1997; Cooper, Todd & Wells, 1998; Cooper & Fairburn, 1992; Vitousek & Hollon, 1990).

A schema model of eating disorders (Markus, Hammill & Sentis, 1984; Vitousek & Hollon, 1990) suggests that dysfunctional assumptions and beliefs are found in three categories of schema. Firstly, self-schemata which refer to negative self judgements pertaining to core beliefs (e.g. I am unlovable, unattractive, fat). Secondly, weight-related schemata, which are propositions about the meaning of body weight and eating in terms of the personal characteristics ascribed to those who are overweight (e.g. being fat equates with being weak, unlovable etc; and general thoughts and attitudes relating to eating, weight and shape). Thirdly, weight-related self-schemata, where weight and shape become the definitive standards by which personal worth is inferred (i.e. negative weight related propositions combined with specific negative self judgements). In this schema model, it is

weight-related self-schemata (the cognitive structures that unite views of the self with beliefs about weight) that are thought to be unique to, and represent the core psychopathology of, eating disorders. Assumptions about eating and subsequent behaviours designed to control weight and shape (extreme dieting, self-induced vomiting, misuse of purgatives and rigorous exercise) are considered to be secondary consequences of such concerns (Cooper, 1997; Cooper & Hunt, 1998; Cooper et al, 1998). In accordance with cognitive models of distress (Beck, Rush, Shaw & Emery, 1987), the belief is considered to drive the behaviour. If concern with weight and shape is a feature of the core psychopathology, it may be important to separate these from food and eating concerns, so that understanding of how beliefs and assumptions are causally related to the development and maintenance of eating disordered behaviours is facilitated (Cooper & Fairburn, 1992; Cooper & Hunt, 1998; Fairburn, 1985; Vitousek & Hollon, 1990).

Cognitive theories of eating disorders have hypothesised that the aforementioned specific beliefs and resultant behaviours are embedded within a wider, more general, dysfunctional cognitive style, characterised by negative self-beliefs common to other psychiatric disorders such as depression (Cooper, 1997; Philips, Tiggeman & Wade, 1997; Vitousek & Hollon, 1990). Support for the role of global dysfunctional attitudes in eating disorders comes from clinical reports and research in this area. This has shown that women with eating disorders exhibit higher levels of general depressive beliefs about the self and the future (e.g. 'I'm worthless, I'll never succeed') and have a cognitive style characterised by a higher level of dysfunctional beliefs and attitudes commonly associated with general psychopathology (e.g. dichotomous thinking, perfectionism, catastrophising) (Butow et al, 1993; Cooper & Hunt, 1998; Philips et al, 1997) when compared with non-eating disordered controls.

Identifying the full range of beliefs that underpin the cognitive and emotional states of eating disorders may have important clinical implications. Measures of eating disordered beliefs and assumptions need to provide a measure of both negative core beliefs (generic beliefs associated with depression) and of the underlying assumptions more specifically related to eating disorders. Identifying the types of beliefs associated with psychological distress for individuals has important treatment implications. For example, cognitive-behavioural treatments specifically for patients with bulimia nervosa have been found to be less effective for those patients that have higher levels of general pathological core beliefs (Newman Leung, Waller, & Thomas, 1999).

Several studies have reported dysfunctional cognitions pertaining to a more general dysfunctional thinking style and to beliefs about weight and eating in normal subjects who have restrained or sub-clinical bulimic patterns of eating (Butow et al, 1993; Thompson, Berg & Shatford, 1987) and in individuals who believe they are overweight (Cash & Hicks, 1990). The cognitive model of eating disorders is therefore not exclusively applicable to people fulfilling all of the formal psychiatric criteria and suggests such cognitions may occur along a continuum rather than sharply differentiating patient and normal groups. The importance of assessing for dysfunctional cognitions associated with general psychological distress and cognitions associated specifically with thoughts and beliefs related to eating and weight concerns within this range of distressed individuals is important so that effective treatment may be administered.

Research has identified significant levels of psychological distress in certain subgroups of the obese population, especially in those seeking treatment for weight management. Weight related schemata might therefore have an automatic effect on the processing of information to perpetuate negative views of the self. Although cognitive behavioural

therapy is the backbone of cognitive mood treatments, little work has been done to investigate whether overweight individuals have characteristic thought patterns as either a cause or consequence of obesity and if so, whether these thought patterns are linked to eating disorders and/or general psychopathology in obese persons. This study will look at how applicable the cognitive model of eating disorders is to predicting psychological distress in clinical obesity.

1.4 Social Comparison and Obesity

Over the last decade, there has been increasing interest in the hypothesis that psychopathology is related to problems associated with perceiving oneself to be inferior to others and / or when one is placed in an involuntarily subordinate position (Gilbert, 1993).

Festinger (1954) introduced the concept of 'social comparison' as an important variable in understanding social interactions. The social comparison theory of self-evaluation describes the process by which individuals use social information to evaluate their own abilities and opinions. Although the theory has undergone several modifications since it was first introduced, the central tenets still remain. Social comparison theory proposes that people need to evaluate their own opinions and attributes in relation to others in order to survive, as this provides an important means of self-evaluation and helps reduce uncertainty about their own performance in social situations. Festinger noted that the most useful self-evaluative information comes from social comparisons with others similar to yourself. Social comparison beliefs are therefore important social cognitions which are used to inform judgement concerning the initiation or termination of social relationships and which exert a powerful effect on mood and behaviour.

Social comparison theory distinguishes between upward social comparison (comparisons against others who are better at something or who possess a more desired attribute) and downward comparisons (comparisons against others who are worse with respect to, or who have less of, a desired attribute). People with high self-esteem tend to compare themselves to others so that their own talents are highlighted. However, people who are unable to view themselves positively in relation to others are vulnerable to feelings of inadequacy and failure. Unfavourable social comparison has been associated with increased psychological distress (e.g. depression, social anxiety, low self-esteem and shame) (Allan, Gilbert & Goss, 1994; Swallow & Kuiper, 1988; Tangney, Wagner & Gramzow, 1992) and with increased levels of aggression (Tangney, Wagner, Fletcher & Gramzow, 1992).

1.4.1 Social Ranking Theory

A related construct is that of ones' relative social 'rank'. An estimation of this is based on social comparison judgements. Gilbert (1993) hypothesises an evolutionary root of social comparison and the importance of judgements pertaining to one's social rank. He suggests that the ability to compare oneself with others is biologically ancient and powerful, but has largely been ignored in the literature. In terms of ranking theory, the ability to assess the self in relation to others acts as a confidence and self-esteem modulator and prevents engagements in challenges the individual perceives him or herself as unlikely to win, and where losing could result in physical harm or social exclusion from the group. The process of social comparison is therefore considered evolutionarily advantageous.

Perceived rank status is also associated with certain types of behaviours. Individuals who judge themselves to be inferior may be likely to be inhibited in some social situations leading them to engage in submissive behaviours (e.g. avoiding eye contact, avoiding confrontational situations, etc.). Involuntary submissive behaviours are associated with

increased levels of general psychopathology, especially depression (Gilbert, 1993), as are negative social comparisons. Those with psychological problems usually lack confidence in social domains of relating, as they fear rejection, criticism or attacks and are consequently more likely to act submissively (Allan & Gilbert, 1997).

Gilbert & Allan (1994) consider that there are two main social hierarchies for humans: hierarchies based on social attractiveness (a non aggressive strategy that can be used to gain status) and hierarchies based on aggression and intimidation. Human ranking and hierarchical systems are determined more by demonstrating attractive qualities than they are on displays of aggression and intimidation (Allan & Gilbert, 1997). This is considered to be because humans need allies to achieve high-ranking positions and social status is usually gained in the context of cooperation and affiliation.

The strategies and skills of affiliation and alliance building differ significantly from those of intimidation and threat. Humans can gain rank and social status by displaying a number of qualities perceived to be attractive (intelligence, cooperation, altruism, artistic talents, etc.) and so for humans it is suggested that gaining or losing attractiveness are key outcomes controlling social status and social success (Gilbert, 1993). Individuals that have qualities that are perceived to be attractive receive more positive social attention and are actively sought out as mates, partners and allies, and so in order to gain status and acceptance in a group or in a relationship one has to display these qualities that others will find attractive. (Gilbert, 1993; Gilbert, Pehl & Allan, 1994).

Ranking based on social attractiveness is linked to concerns of impression management and how the individual 'exists' for the other(s). An aspect of this is physical attractiveness. In recent years social comparison theory has been used to explain the psychological effects

of body image dissatisfaction, i.e. the psychological effects of comparing oneself to others and then falling short. Festinger (1954) suggested that individuals engage in the comparison process to judge their standing on a variety of characteristics. With reference to body image issues, individuals in our society (especially women) are regularly exposed to images that may serve as comparison targets (Stice, 1994). Social comparison theory states that individuals who have a tendency to compare their appearance to those of others whom they consider to be 'more attractive' (i.e. an upward comparison), are more likely to experience body image dissatisfaction and consequent low mood.

1.4.2 Social Ranking and Body Dissatisfaction

Research in the area of body dissatisfaction indicates that appearance related comparisons (including body size, shape and weight comparisons) have a significant role in the development and maintenance of body image dissatisfaction (Striegel-Moore et al., 1986; Thompson et al., 1991). Furthermore, body image appraisal and appearance related social comparisons are more highly associated with eating disordered behaviours than are other factors such as teasing and social pressure to be attractive (Thompson & Heinberg, 1993; Stormer & Thompson, 1996; Striegel-Moore et al., 1986; Thompson et al., 1991). These studies therefore lend support to the potentially important mediating role of appearance related comparisons in the onset of body image and eating related disorders (Thompson & Heinberg, 1993).

Studies documenting the process of stigmatisation in obesity conclude that society perceives obese individuals as unattractive and condemns and blames them for their physical condition (Brownall, 1991; Cash & Hicks, 1990; Crocker et al, 1993; Riva, 1996). Mistreatment due to excess weight is a common experience (Cash & Hicks, 1990; Falkner

et al, 1999). Obesity is immediately visible and may influence most social situations, eliciting negative responses from others. Discrimination and negative attitudes towards the obese may then mediate the relationship between obesity and psychological distress, especially if the obese individual also focuses on the negative impact of their weight on his or her life, internalises societies view of themselves, and alters their behaviour accordingly (Friedman & Brownell, 1995; Crocker et al, 1993; Tanco, Wolfgang & Earle, 1998).

Body image disturbance has a positive association with body mass index and a negative association with psychological well being (Faith, Leone & Allison, 1997; Thompson, 1992). However, the role of social comparison tendencies in relation to body mass index (BMI) is not well understood. Faith et al (1997) found no support for the hypothesis that BMI moderates the association between appearance-related comparisons and body image appraisal and they therefore argue that the effects of these social comparison manipulations are independent of weight status. However, these studies have focused on physical attractiveness comparisons using normal weight and mildly overweight individuals and it is therefore difficult to generalise any findings regarding the relationship between global social comparisons and BMI to clinically obese individuals.

1.5 Shame and Obesity

Shame is a primary human emotion, a painfully devastating experience generated by a sense of having done something wrong, dishonourable, improper or ridiculous. The experience of shame, at least temporarily, leads to a crippling of adaptive self-functions. One of the most influential theorists on shame in recent times, Lewis (1986), describes the experience of shame as involving a sense of scrutiny by a more powerful other(s), leading

to feelings of inferiority, helplessness and self-consciousness. Central to her understanding of the shame experience is the belief that the self is subject to negative self-evaluation and is evaluated negatively by others, resulting in feelings of embarrassment, mortification, humiliation, disgrace and shyness. Shame therefore takes place within a domain of social awareness and involves concepts of disturbed power relationships stemming from negative self-other comparisons. Shame generally seems to focus on both the internal world and the social world – i.e. it encompasses beliefs about how one sees ones-self as a consequence of how one thinks others see the self. Shame may accordingly inhibit specific kinds of positive, social relationships by being associated with negative evaluations of the self and fear of being judged negatively by others.

Some negative rank judgements (e.g. feeling inferior, bad or worthless in the eyes of others) are epitomised in the concept of ‘shame-proneness’. ‘Shame-proneness’ refers to a tendency to see the self as inferior to others and vulnerable to put down, ridicule and rejection. In shame-prone individuals, the pathological effects of shame are global and stable phenomena, central to experiences of the self and ones relationship with others (Cook, 1993; Goss, Gilbert & Allan 1994). Feelings of shame can relate to judgements of rank and power and to the perception of oneself as being unattractive to the group (perceptions of not fitting in) or of having lost attractiveness in the eyes of others.

1.5.1 Shame and Psychopathology

‘Shame-proneness’ is recognised as being a major vulnerability factor for psychopathology. The tendency to experience shame across a range of situations may render people more vulnerable to a variety of psychological disorders because of repeated disruptions in self-functioning (i.e. feeling anxious, self-conscious, wanting to conceal the

self, experiencing others as ridiculing and rejecting) and in relating to others. Shame-proneness is highly correlated with feelings of self-conscious, inferiority, helplessness and fear of negative evaluation (Gilbert, Pehl & Allan, 1994). Shame has been identified as a significant predictor of depression and anxiety in a student population (Goss et al, 1994; Tangney et al, 1992b). Shame-proneness has also been associated with increased anger-proneness in social situations (Tangney et al, 1992a). In other words, the more shame-prone an individual is, the more they will experience difficulties in psychological and interpersonal functioning (Tangney et al, 1992b).

1.5.2 Shame and Disordered Eating

Shame is particularly highly correlated with eating disorders, especially bulimia nervosa (Burney & Irwin, 2000; Silberstein, Streigel-Moore & Rodin, 1986, Sanftner et al., 1995). In developing the Internalised Shame Scale (ISS), Cook (1993) found that eating disordered inpatients had the highest average ISS score of the clinical groups tested. Shame is therefore implicated as an important emotion in the psychopathology of eating disorders (Cook, 1993). Feelings of shame (i.e. feelings of self- disgust) following a binge are required for the diagnosis of Binge Eating Disorder in DSM IV (American Psychiatric Association, 1994) and many authors refer to concepts which denote feelings of shame (e.g. ‘public self-consciousness’) that commonly precipitate and follow episodes of bingeing and purging (Fairburn, 1981; Leitenberg, 1993). Furthermore, women with eating disorders are more likely to experience higher general levels of shame and guilt than women who do not have eating disorders (Garner & Garfinkel, 1985; Santfner & Crowther, 1998).

Sanftner et al. (1995) considered the literature focusing on the relation of shame and guilt to eating disorders. A consistent theme they identified was that women who have patterns

of disordered eating feel bad about themselves (a phenomenon consistent with shame) in relation to their bodies and their eating difficulties more than they do about their behaviours (a guilt related phenomenon). Therefore, although both shame and guilt may be implicated, the former would be expected to be more crucial than the latter. This ties in with cognitive models of eating disorders, whereby eating disordered individual's thoughts and feelings about themselves are significantly influenced by their eating difficulties and where they experience difficulty differentiating feelings of self-worth from the actual appearance of the body (Garner & Garfinkel, 1985). Research concerning the cognitive styles of women with eating disorders shows that they have a tendency to blur the distinction between their physical appearance, their self worth and their eating problems and in doing so, succumb to a more shame-like style of thinking (Burney & Irwin, 2000).

Sanftner et al., (1995) hypothesise that the relationship between shame and eating disordered behaviour is likely to be complex. For example, shame may result from eating disordered behaviour; shame prone women may be more vulnerable to the symptoms of eating disorders; or a third factor such as distorted thinking-style (e.g. dichotomous thinking) may affect both the tendency to respond with shame and the tendency to develop an eating disorder. Shame is considered to be one of several variables involved in the complex cause and effect relationship important in the aetiology and maintenance of eating disorders and therefore has important clinical implications (Burney & Irwin, 2000; Sanftner et al, 1995).

The association between shame and eating disorders has been linked to difficulties in interpersonal functioning, specifically to interpersonal sensitivity and rejection sensitivity in relation to episodes of binge eating in bulimic and binge eating disordered women (Arnow, Kenardy & Agras, 1995; Spitzer et al, 1993; Telch & Agras, 1996). At a non-

clinical level, chronic dieters and restrained eaters demonstrate high levels of self-awareness and critical appraisal of how they appear to others. Binge eating is therefore considered to be a response to feelings of having been shamed, since uncontrolled overeating is hypothesised to provide a means of escape from the intense negative affect associated with shame (Heatherton & Baumeister, 1991). Disordered eating (e.g. bingeing, purging) may be only one way in which a person expresses symptomatically the sensitivity to rejection that tends to accompany persons who are 'overly' dependent on emotional support from others. Elldredge, Locke & Horowitz (1998) suggest that binge eaters experience specific problems related to social avoidance and attempt to manage feelings of hostility in a passive or submissive manner (i.e. by refusing to acknowledge them) and this has significant implications for treatment success.

The literature therefore suggests that feelings of shame may be linked to 'uncontrolled' eating patterns, including uncontrolled over-eating and binge eating behaviours, common in obese individuals (Strigel-Moore et al., 2000). Furthermore, social comparison theory predicts that shame can be experienced even if the individual is aware that they have done nothing wrong. In such cases, shame is experienced simply as a consequence of the awareness or belief that the self has created a negative or unattractive image in the eyes of others. An intense sense of inferiority can arise from being treated as weak and incapable and also from being humiliated and devalued, for example by being given signals that one is unattractive - experiences often encountered by obese individuals in social situations (Brownell & Rodin, 1994). Measuring shame may therefore be important when investigating psychological distress in clinical obesity.

1.6 Summary & Rationale

The literature describes a continuum of psychopathology in obese individuals. Within this large body of work, levels of psychological distress are identified as; 1) being higher in obese individuals seeking treatment for weight management; and 2) being more extreme in individuals who engage in binge eating behaviour. Future research is necessary to isolate additional factors implicated, but not yet correlated, with psychological distress in this client group. This study aims to look at the relationship between specific factors (identified as important in the literature) and psychological distress in clinical obesity.

A review of the literature suggests a possible link between degree of overweight and distress in overweight and obese individuals (Telch et al, 1988). Even though this relationship has not been consistently identified (e.g. Molinari et al, 1997), body mass is considered an important variable to investigate when studying psychological distress in obese individuals, especially with regard to the chronic social and physical health problems increasingly associated with morbid obesity (i.e. a BMI of 40+) (Sarlio-lahteenkova et al, 1995). The literature also demonstrates a relationship between binge eating behaviour and distress in obese individuals, which indicates that 'binge eating' is a crucial concept to study in this population even though inconsistencies in the definition and measurement of this concept make it difficult to assess (Agras, 1997; Beumont et al, 1994; Rossiter et al, 1992).

Associations between the symptomatology experienced by obese and eating disordered populations (Marcus et al, 1992) suggests that eating disordered beliefs may be an important factor in understanding psychological distress in obesity. Furthermore, the effects of social stigmatisation and shame on the psychological well being of individuals

who are overweight/obese indicate that variables associated with social ranking theory (e.g. negative social comparisons, submissive behaviours and shame) may also be important in understanding psychological distress in obese individuals. The potential application of the cognitive model of eating disorders and social ranking theory of psychopathology to aid the understanding of distress in obesity is suggested.

The rationale behind this study therefore, is to investigate the role of eating disordered beliefs and social ranking variables (i.e. social comparison beliefs, submissive behaviour and shame) in the maintenance of psychological distress in clinical obesity.

1.7 Research Aims and Hypotheses

The global aim of this study is to examine associations between; i) psychological distress; ii) binge eating behaviour; iii) eating disordered beliefs; iv) social comparison beliefs; and v) submissive behaviour and shame, in men and women who are clinically obese and who are currently attending dietetic services for support with weight management. The participants are a specific clinical group currently experiencing weight loss difficulties.

1.7.1 Hypothesis One

A review of relevant literature indicates that obese individuals seeking treatment for weight management experience high levels of psychopathology, when compared to obese/overweight individuals who are not seeking such treatment. The initial aim of this study was to establish whether levels of psychological distress and eating disordered

symptomatology were more evident in this sample than in non-patient samples reported in the literature.

Hypothesis One (a)

It is hypothesised that higher levels of psychological distress (measured by GSI and BDI) will be identified in clinically obese individuals, compared to levels found in non-clinical populations reported in the literature.

Hypothesis One (b)

It is hypothesised that higher levels of eating disordered symptomatology (measured by EDE-Q subscales of eating concern, weight concern, shape concern and restraint) will be identified in clinically obese individuals, compared to levels found in non-clinical populations reported in the literature.

1.7.2 Hypothesis Two

The second aim of this study is to explore associations between the degree of psychological distress and Body Mass Index (BMI) within the sample. The literature indicates a tentative relationship between higher body mass and distress (e.g. Telch et al, 1988). It is therefore hypothesised that higher BMI will be associated with higher scores on measures of psychological distress in this sample population.

1.7.3 Hypothesis Three

The third aim of this study is to explore associations between psychological distress and binge eating behaviour in this sample group. The general finding in the literature is that binge eating behaviour differentiates distressed obese individuals from non-distressed obese individuals in treatment seeking samples (e.g. Kaplan & Ciliska, 1999). It is

therefore hypothesised that more severe binge eating behaviour will be associated with higher scores on measures of psychological distress in this study.

1.7.4 Hypothesis Four

The fourth aim of this study is to explore associations between psychological distress and eating disorder beliefs (i.e.. negative self beliefs, beliefs concerning self acceptance and acceptance by others, and beliefs concerning control over eating) in clinical obesity. Research concerning anorexics, bulimics and binge eaters indicates a relationship between eating disordered beliefs and psychopathology (e.g. Cooper & Fairburn, 1992). It is therefore hypothesised that higher scores on the measure of eating disordered beliefs will be associated with higher scores on measures of psychological distress in this sample group.

1.7.5 Hypothesis Five

The literature concerning the effects of social stigmatisation and shame strongly suggests a negative effect on the psychological well being of overweight and obese individuals (e.g. Stice, 1994). The fifth aim of this study is to explore associations between psychological distress and social comparison beliefs, submissive behaviours and shame (social rank variables) in this sample.

Hypothesis Five (a)

It is hypothesised that negative social comparison and higher levels of submissive behaviour will be associated with higher scores on measures of psychological distress in this sample.

Hypothesis Five (b)

It is hypothesised that higher scores on measures of shame will be associated with higher scores on measures of psychological distress in this sample.

1.7.6 Hypothesis Six

The final aim of this study is to identify predictors of psychological distress in a clinically obese population and to compare the cognitive model of eating disorders with the social ranking theory of psychopathology. It is hypothesised that the models will predict specific patterns of psychological distress in this sample.

2 Method

2.1 Design

This was a cross-sectional questionnaire study investigating the associations between psychological distress, eating disordered beliefs, social comparison beliefs, submissive behaviour and shame variables in clinically obese males and females. The data was collected using self-report questionnaires, which were completed during a meeting with the researcher.

2.2 Participants

Participants were males and females currently attending regional dietetic services for weight management. The inclusion criteria was a Body Mass Index (BMI) of greater than 30 [BMI calculated using the formula (weight (kg)/height (m)²)]; age 18–60 yrs; ability to give informed consent; fluent use of English; no medical/physical condition known to affect eating behaviour; no current contact with psychological or psychiatric services.

2.3 Procedure

For the purpose of this study, 132 clinically obese patients who met the inclusion criterion were approached by their dietitian at the end of their first follow up dietetic appointment.

They were given an information leaflet (appendix two) about the study and a form requesting permission for them to be contacted if they were interested in participating in the study (appendix three). Completed forms were then returned to the researcher who met with each participant either at the dietetic clinic or at the patient's home. At this meeting an opportunity was provided for the researcher to talk through what would be involved during the study and participants were encouraged to ask questions. Signed consent was then obtained from each participant (appendix four). Participants proceeded to work through the booklet of self-report questionnaires. The researcher remained with each participant for the duration of their involvement and was able to clarify any questions concerning the instruction and /or the concepts used in the measures. Once the questionnaires had been completed, there was further opportunity for discussion. From the initial sample of 132 patients, 58 (43.9%) declined to be involved.

2.4 Background Information

The following demographic and clinically relevant information was obtained for each participant (appendix five);

- i.* **Age**
- ii.* **Gender**
- iii.* **Self-reported height**
- iv.* **Self-reported current weight** - research has identified high correlations between reported and actual weight (Davis & Gergen,1994).
- v.* **Ideal weight** - defined as the weight each subject would like to be, rather than the weight they believe they should be.

- vi. **Source of current motivation to lose weight** - ‘themselves’; ‘family/friends’;
‘GP/health professional’.
- vii. **Age of onset of obesity**
- viii. **Number of times lost and regained 20lbs or more**

2.5 Measures

All subjects completed the following measures;

2.5.1 The Eating Disorder Examination Questionnaire Version (EDE-Q) Third Edition (Fairburn & Beglin, 1994)

The Eating Disorder Examination-Questionnaire (EDE-Q) is the self-report version of the Eating Disorder Examination (EDE) (Cooper & Fairburn, 1987) which was developed to assess the specific psychopathology of eating disorders. The EDE-Q has been designed to address problems encountered in using investigator based interviews such as cost of preliminary training, time consuming administration procedures, and reduced personal anonymity (Fairburn et al., 1994; Wilfrey et al., 1997).

The main focus of the EDE-Q is on the behavioural features of eating disorders and on the items needed to generate the four EDE subscales (restraint, weight concern, shape concern and eating concern). As with the EDE, the EDE-Q focuses on eating behaviour and attitudes toward body shape and weight during the preceding four weeks and is concerned with the number of days (out of the last 28) on which a particular behaviour has occurred.

There is evidence, with regard to binge eating in particular, that this method is more accurate than the number of episodes per se (Marcus et al., 1992; Rossiter et al., 1992).

The EDE-Q has been validated against the EDE and compares favourably on most dimensions. Difficulties in defining and measuring ambiguous concepts such as 'binge eating' are acknowledged, although it remains unclear whether the interview or the questionnaire measure of the EDE provides the most accurate measure of binge eating frequency (Black & Wilson, 1996; Fairburn & Beglin, 1994; Wilfrey et al., 1997). The EDE-Q has good face validity and established test/re-test reliability. Each of the subscales has been found to distinguish between eating disordered and normal populations (Fairburn et al., 1994; Wilfrey et al., 1997) and the measure has impressive positive predictive value as a case-finding instrument (Fairburn & Beglin, 1991).

The items from the EDE-Q used in this study were;

- i. The restraint subscale* - assesses the avoidance of eating in general and of 'forbidden foods' in particular, and assesses for the presence of rigid dietary rules (e.g. 'have you been deliberately trying to limit the amount of food you eat to influence your shape and weight?').
- ii. The eating concern subscale* - measures preoccupation with food, eating in secret, guilt about eating and fear of losing control (e.g. 'have you been afraid of losing control over eating?').
- iii. The weight concern subscale* - assesses extreme emphasis concerning body weight which is characteristic of eating disordered patients (e.g. 'have you had a strong desire to lose weight?').

- iv. **The shape concern subscale** – assesses emphasis on body shape, characteristic of eating disordered patients (e.g. ‘has your shape influenced how you think about yourself as a person?’).

Responses are rated either on; i) a seven point scale denoting the number of days out of the last 28 days in which participants had engaged in a specified behaviour or attitude. This scale ranges from 0 – 6 (0=no days; 1= 1-5 days; 2= 6 – 12 days; 3=13 – 15 days; 4=16 – 22 days; 6= every day); or ii) a seven point scale denoting how much participants has engaged in a particular behaviour. This scale ranges from 0 (not at all) – 6 (markedly).

This study also used the EDE-Q to assess purging behaviours and to characterise ‘binge eaters’ within a sample of clinically obese individuals. Accordingly, the item measuring the frequency of ‘**objective binge eating episodes**’ (i.e., ‘the number of times over the past 28 days when you have felt that you have eaten what other people would regard as an unusually large amount of food given the circumstances, and have experienced a sense of having lost control of your eating during the overeating episode’) was used.

In this study ‘binge eating’ is defined as an overeating episode over which the subject reported a loss of control. For the purpose of data analysis, subjects were either classified as ‘binge eaters’ (if they reported a minimum of four binges during the preceding 28 days) or ‘non-binge eaters’ if they reported fewer than four episodes of binge eating over this time period. Information concerning numbers of ‘binge eaters’ and ‘non-binge eaters’ and the average frequency of binge eating days over the previous 28-day period was therefore generated. No record was obtained concerning a lengthier history of bingeing outside the 28 days on which the measure focuses, so it was not possible to consider whether subjects used in this study met diagnostic criteria for Binge Eating Disorder (BED) (Appendix one),

which requires a frequency of binge eating episodes occurring at least two days a week for a minimum period of six months. Furthermore, information concerning other diagnostic criteria for BED could not be obtained within the limitations of the present study. It is therefore important to note that when 'binge eating' is discussed in this study it refers to the above definition and not to Binge Eating Disorder.

2.5.2 The Eating Disorder Belief Questionnaire (EDBQ) (Cooper, Cohen-Tovee, Todd, Wells & Tovee, 1997)

This is a 32 item self-report questionnaire designed to assess assumptions and beliefs relevant to eating disorders. It consists of four separate factors;

- i. **Negative self-beliefs*** (e.g. 'I am a failure') which provides a measure of generic beliefs associated with depression.
- ii. **Beliefs about weight and shape as a means of acceptance by others*** (e.g. 'if my hips are thin, people will approve of me').
- iii. **Beliefs about weight and shape as a means of self-acceptance*** (e.g. 'If my body is lean I can feel good about myself').
- iv. **Beliefs about control over eating*** (e.g. 'If I binge and vomit, I can stay in control').

Beliefs are rated on a scale ranging from 0 – 100 (0= 'I do not usually believe this at all'; 100= 'I am usually completely convinced this thought is true'). This scale has good psychometric properties and can distinguish between normal and eating disordered populations. The four subscales are significantly correlated with each other and with other measures of the specific and general psychopathology of eating disorders (Cooper et al, 1997).

2.5.3 *An Introduction to Shame Measures*

‘Shame proneness’ is measured in two different ways. Certain measures assess ‘state shame’, i.e. shame as a response to a specific potentially shaming event. For example, the Dimensions of Conscience Questionnaire (Johnson & Noel, 1966) and the Self-Conscious Affect and Attribution Inventory (Tangney et al, 1988) both present a range of scenarios (e.g. spilling a drink in public) and then measure a person’s judgement of their anticipated distress in these situations. Alternatively, other measures assess ‘trait shame’, focusing on global negative self-evaluations. For example, the Internalised Shame Scale, (Cook, 1993) and the Other as Shamer Scale (Goss et al., 1994) focus upon the individual’s internal experience of self (as they perceive themselves or as they believe others perceive them, respectively).

Measures of ‘trait’ shame (i.e. the ISS and OAS) are more highly correlated with measures of psychopathology (especially depression) than are shame scales focusing on shame responses to specific events (Cook, 1993; Goss et al., 1994).

2.5.4 *Internalised Shame Scale (ISS) (Cook, 1993)*

This is a thirty item self-report scale measuring global negative self-perception. Twenty-four of the items constitute a shame scale whilst the remainder comprise a measure of self-esteem. Respondents are asked to rate the frequency with which they experience particular thoughts or feelings (e.g. ‘I feel intensely inadequate and full of self-doubt’) on a five-point scale (1=‘never’; 5=‘almost always’). The total shame score is calculated by re-coding item scores (1=0; 2=1; 3=2; 4=3, 5=4) and summing the results (minus the self-esteem items).

The scale was constructed using large clinical (N=370) and student (N=645) populations. It yields high internal consistency (Cronbach alpha = 0.96, 0.95 respectively). For non-clinical subjects, test-retest correlation at seven weeks was 0.84 for shame items and 0.69 for self-esteem items. Only the shame items from the ISS have been analysed in this study.

2.5.5 The Other As Shamer Scale (OAS) (Goss et al, 1994)

This measure is based on the format of the ISS (Cook, 1993) although only 18 items are used. It examines global judgements about how people believe others perceive them and measures proneness to believing others negatively evaluate the self. It consists of 18 descriptions of feelings and experiences (e.g. 'I feel other people see me as not good enough') and respondents are asked to rate on a five-point scale (1 = 'never'; 5 = 'almost always') the frequency with which they make each evaluation (appendix six). The total OAS score is calculated by summing item scores.

This measure has been found to have good internal consistency (Cronbach alpha = 0.92) and test – retest reliability (Goss et al., 1994) and correlates significantly with other measures of shame (e.g. when correlated with the ISS, $r=0.81$: Goss et al, 1994).

2.5.6 Social Comparison Scale (SCS) (Allan & Gilbert, 1995)

This measure (appendix seven) examines respondent's sense of themselves in relation to others. It was designed to include global dimensions relevant to relative judgements of rank and status. The scale consists of eleven items each of which constitutes a pair of bipolar constructs e.g. 'Unlikeable - Likeable'. For each item, respondents are asked to put a mark on a ten-point scale, indicating how they see themselves in relation to others. The

items were derived from clinical observations of frequently employed negative social comparison statements. Factor analysis of this scale measures three separate factors (rank, group fit, and social attractiveness). However, in this study, the total score as a measure of social comparison was used. The Cronbach alpha coefficient for the scale was found to be 0.92 (Goss et al., 1994).

2.5.7 Submissive Behaviour Scale (SBS) (Gilbert & Allan, 1994)

This is a 16 item self-report scale (appendix eight) assessing the estimated frequencies of various involuntary submissive behaviours such as ‘I agree that I am wrong, even though I know that I am not’. The scale examines social behaviour and is not intended to be a measure of depression or anxiety. It has been shown to have good internal consistency (Cronbach alpha = 0.89) and test-retest reliability (0.84) (Glibert, Allan & Trent, 1995).

2.5.8 Beck Depression Inventory (BDI) (Beck, 1978)

This is a 21-item inventory designed to assess the severity of current depressive symptomatology. This scale has been widely used by clinicians and researchers to measure depression in psychiatric and non-psychiatric samples. Subjects respond by selecting the statement from a group of four statements that seems most appropriate for them (e.g. ‘I blame myself for my faults’). A total score is calculated by adding scores from a four-point scale (0 – 3), with scores rising dependent on the severity of the response. The score is the sum of ratings given by each participant, the maximum being 63.

The BDI was used in this study rather than any other measure of depression (e.g. The Hospital Anxiety and Depression Scale, Zigmond & Snaith, 1983; the Hamilton Rating

Scale for Depression, Hamilton, 1960; and the depression of the General Health Questionnaire, Goldberg, 1978) because it is quick and easy to administer and score, it is able to differentiate between psychiatric and non-psychiatric populations (Beck et al, 1988), it can assess current levels of depression while providing a continuum of clinical severity and it has good test/re-test reliability and high internal consistency (Beck et al., 1988).

2.5.9 Symptoms Checklist – 90 Revised (SCL-90) (Derogatis et al., 1976)

This is a 90-item inventory developed to assess psychiatric symptomatology. Each item is rated on a five-point scale of distress (0 = 'not at all'; 4 = 'extremely'). A score can be totalled for each of the nine primary symptom dimensions (somatisation, obsessive-compulsive; interpersonal sensitivity; depression; anxiety; hostility; phobic anxiety; paranoid ideation; psychoticism), plus three global indices of pathology;

- i. **Global Severity Index*** - which combines information on the number of symptoms and intensity of distress and is therefore a good single measure of psychological disturbance.
- ii. **Positive Symptom Distress Index*** - which measures the intensity of each symptom.
- iii. **Positive Symptom Total*** - which provides data on the total number of symptoms for each respondent.

The SCL-90 has established test re-test reliability, has been standardised and validated on several clinical and non-clinical populations, and has been used extensively in previous research (Grissett & Fitzgibbon, 1996). The Global Severity Index (GSI) (computed by adding the score for each of the 90 questions and dividing by the total number of

questions) was used in the present study to represent a measure of psychological distress. The GSI is considered the best single indicator of current level and depth of distress and is therefore recommended as the index that should be utilised when a single summary measure is required (Derogatis, 1977).

2.6 Statistical Analysis

Preliminary statistical tests were carried out to establish characteristics of the data and the appropriate use of parametric and non-parametric statistics.

Kolomogorov-Smirnov Tests were employed to examine whether the data was normally distributed and Levene's Tests were used to assess homogeneity of variance. Consequently, non-parametric statistics were considered the most appropriate.

Where the analyses investigated associations between variables, Spearman's Rank correlation was used. Mann Whitney U tests were employed for two group analyses.

Since directional hypotheses were being investigated, significance testing was one tailed, with the exception of hypothesis six where testing was two tailed.

To control for the increased probability of Type 1 error (i.e. obtaining a significant result by chance) the significance level was adjusted using the Bonferroni correction. For five (or more) comparisons, α was set from $p < 0.05$ to $p < 0.001$.

Multiple regression analysis, to identify predictors of psychological distress and to compare the two models (eating disorder beliefs model and social comparison model), could not be statistically justified due to the high inter-correlations between the predictors comprising the two models and the consequent problems of multicollinearity. Principal component factor analysis with oblique rotation was therefore performed to investigate whether the different predictors were measuring the same construct.

3 Results

This study has generated specific aims and hypotheses from the current literature in order to explore the factors associated with psychological distress in individuals who are clinically obese. Descriptive and inferential statistical analyses, which shall be described in this chapter, have been carried out in order to identify these factors. Preliminary analyses, including exploration of the nature and characteristics of the data will be reported first, followed by the data analyses relevant to each hypothesis.

3.1 Choice of statistical test

Table 1 presents the findings for the Kolomogorov-Smirnov test for all outcome measures. In only three cases (identified by *) are parametric analyses not appropriate. However, only non-parametric tests are used in all subsequent analyses because Levene's Test's failed to demonstrate homogeneity of variance.

3.2 Description of the sample

The sample consisted of 74 participants; 56 females and 18 males. The mean age of the sample was 41.1 years, with a range of 19 – 60 years. The mean 'actual' BMI was 42.7 with a range of 31 – 66. The mean 'ideal' BMI of the sample group was 25, with a range of 20 – 33. The mean weight of the sample was 122.82 kg, with a range of 83.00 – 190.68kg.

Table 1 Presenting outcomes and significance levels for the Kolomogorov-Smirnov Test of normal distribution for all outcome measures.

Variable	Kolomogorov-Smirnov Test
EDBQ NSB	0.95
EDBQ ABO	1.22*
EDBQ SA	1.17
EDBQ COE	1.4
Social Comparison	1.07
Submissive Behaviour	0.75
ISS	1.32
OAS	1.03
BDI	1.07
SCL-90 GSI	1.07
EDE-Q Restraint	0.99
EDE-Q Weight concerns	0.99
EDE-Q Shape concerns	0.88
EDE-Q Eating concerns	1.04
EDE-Q Objective binge	2.24*
BMI	1.62*

EDBQ NSB=Eating Disordered Beliefs Questionnaire, Negative Self-Beliefs subscale; EDBQ ABO=Eating Disordered Beliefs Questionnaire, Acceptance By Others subscale; EDBQ SA=Eating Disordered Beliefs Questionnaire, Self Acceptance subscale; EDBQ COE=Eating Disordered Beliefs Questionnaire, Control Over Eating subscale; ISS=Internalised Shame Scale; OAS=Other As Shamer Scale; BDI=Beck Depression Inventory; SCL-90 GSI=Symptom Checklist-90 Global Severity Index; EDE-Q=Eating Disorder examination-Questionnaire.

Note: * indicates that the distribution of scores on these variables differs significantly from a hypothetical normal distribution, violating one of the assumptions for using parametric tests.

Body Mass Index was not significantly associated with any of the variables ($p = \text{ns}$).

36 out of the 74 participants (48.6%) met this study's criteria for binge eating status; the remaining 38 (51.4%) were classified as non-bingers. The gender difference in binge eating behaviour was non-significant ($U = 0.08 \text{ ns}$).

Only a small proportion of the sample used purging behaviours to control their weight. 5% had used self-induced vomiting (the number of episodes ranged from 4 – 21) over the 28 day period assessed. Similarly, 5% of the sample had misused laxatives (number of episodes ranged from 6 – 16) during the assessment period. 7% reported having exercised excessively (4 – 9 episodes) in order to control their weight during this time period.

58% of the sample developed obesity during childhood (defined in this study as < 18 years of age). 18% of the sample had lost and then regained more than 20lbs at least five times. 61% of the sample had not experienced any significant weight loss since they had become clinically obese. 24% of the sample were motivating themselves to lose weight, whereas 34% of the sample reported that it was a medical professional who was currently motivating them to lose weight.

The measures of psychological distress (GSI and BDI) were not correlated with Body Mass Index (GSI: $r = 0.08$, ns; BDI: $r = 0.01$, ns) nor with age (GSI: $r = -0.12$, ns; BDI: $r = -0.21$, ns)

3.2.1 Gender Differences

Table 2 shows the means and standard deviation (in parentheses) for GSI and BDI scores for males and females.

Table 2 Means (standard deviation) and tests of difference between men and women on the GSI and BDI					
<i>Variable</i>	All (n=74) <u>M</u> (<u>SD</u>)	Men (n=18) <u>M</u> (<u>SD</u>)	Women (n=56) <u>M</u> (<u>SD</u>)	Mann Whitney	Sig
GSI	1.01(.76)	0.35 (0.29)	1.22 (0.75)	U=128	p<0.001
BDI	18.70(10.49)	8.67 (6.13)	21.9 (9.54)	U=240	p<0.001

Note. GSI = Symptom Checklist 90, Global Severity Index; BDI = Beck Depression Inventory.

A significant difference ($p < 0.001$) was found between men and women on measures of current psychological distress. Women scored significantly higher than men on both measures. Whereas women obtained clinical levels of psychological distress on both measures, men obtained levels of clinical distress on the GSI, but levels of distress within

the normal range on the BDI. Although this gender difference is acknowledged, subsequent analyses include data from the total sample (i.e. both males and females), since removing the male participants would reduce statistical power. Gender differences will be discussed in Chapter Four.

3.3 Psychological Distress: Clinically Obese and Non-Clinical Populations

The first hypothesis contained two elements;

3.3.1 Psychological Distress and Clinical Obesity

Hypothesis One (a) predicted that high levels of psychological distress (measured using the GSI and the BDI) would be found within this group of participants, compared to levels found in non-clinical populations reported in the literature. Table 3 shows the mean scores, with standard deviations and confidence intervals (in parentheses) of participants from this study for the nine subscales and the GSI score of the SCL-90. The means for non-clinical and psychiatric populations (Derogatis, 1976) are also presented. Table 3 shows that the clinically obese participants scored higher than the non-clinical sample on the nine symptom subscales of the SCL-90 and on the Global Severity Index (GSI). Table 3 also shows that the psychiatric outpatients scored higher than the clinically obese participants on the GSI and on all the symptom subscales with the exception of 'somatisation'. In addition to obtaining a high score on this subscale, the clinically obese sample also scored highly on the 'interpersonal sensitivity' subscale. The lowest scores for the clinically obese were obtained on the subscales 'hostility' and 'phobic avoidance'.

Table 4 shows that the clinically obese participants in this study scored higher on a measure of current depressive symptomatology when compared with other obese and overweight samples and with non-psychiatric controls.

Table 5 shows that the clinically obese participants in this study scored higher on a measure of current general psychological distress when compared with other obese and overweight samples.

Table 3 . Mean raw scores (standard deviations)[confidence intervals 95%] on the nine symptom dimensions and GSI of the SCL-90 for different sample groups.

	Psychiatric Outpatients (n=1002) (a) M (SD) [CI ₉₅]	Non-patients (n=973) (a) M (SD) [CI ₉₅]	Clinical Obese (n=74) M (SD) [CI ₉₅]	
SOM	.87 (.75) [.82-.92]	.36 (.42) [.33-.39]	.93 (.79) [.75-1.11]	O>P>N
O-C	1.47 (.91) [1.41-1.53]	.39 (.45) [.36-.42]	1.14 (.84) [.95-1.33]	P>O>N
INT	1.41 (.89) [1.35-1.47]	.29 (.39) [.27-.31]	1.36 (1.08) [1.11-1.61]	O=P>N
DEP	1.79 (.94) [1.73-1.85]	.36 (.44) [.33-.39]	1.40 (1.02) [1.17-1.63]	P>O>N
ANX	1.47 (.88) [1.42-1.52]	.30 (.37) [.28-.32]	.93 (.83) [.74-1.12]	P>O>N
HOS	1.10 (.93) [1.04-1.16]	.30 (.40) [.27 - .33]	.63 (.73) [.46-.80]	P>O>N
PHOB	.74 (.80) [.69-.79]	.13 (.31) [.11-.15]	.57 (.70) [.41-.73]	P>O>N
PAR	1.16 (.92) [1.10-1.22]	.34 (.44) [.31-.37]	.85 (.90) [.64-1.06]	P>O>N
PSY	.94 (.70) [.90-.98]	.14 (.25) [.12-.16]	.69 (.74) [.52-.86]	P>O>N
GSI	1.26 (.68) [1.22-1.30]	.31 (.31) [.29-.33]	1.00 (.76) [.83-1.17]	P>O>N

Note. (a)Derogatis, 1977. SOM=Somatisation subscale; O-C= Obsessive-compulsive subscale; INT= Interpersonal sensitivity subscale; DEP=depression subscale; ANX=Anxiety subscale; HOS=Hostility subscale; PHOB= Phobic anxiety subscale; PAR= Paranoid ideation subscale; PSY= Psychotoicism subscale. GSI= Global Severity Index (SCL-90).

O=Obese patients; P=Psychiatric outpatients; N=Non-patients.

Table 4 Mean (SD) [CI₉₅] BDI scores for different sample groups

	Non-psychiatric controls(a)	Overweight (no disordered eating)(b)	Obese (no overeating)(c)	Obese clinical
	N = 24	N = 60	N = 63	N = 74
BDI	5.37(5.32) [3.12-7.62]	5.78(5.52) [4.38-7.18]	8.40* [2.4-14.4]	18.70(10.49) [16.3-21.09]

Note.BDI = Beck Depression Inventory; (a) Philips et al (1997); (b) Telch & Stice (1998);(c) Gladis et al (1998); * SD not available from authors

Table 5 Mean (SD) [CI₉₅] GSI scores for different sample groups

	Obese (no disordered eating)(a) (n = 48)	Obese (no overeating) (b) (n = 56)	Obese Clinical (n =74)
SCL-90 GSI	0.45 (0.36) [0.35-0.55]	0.36 (0.31) [0.28-0.44]	1.00 (0.76) [0.83-1.17]

Note.GSI = Global Severity Index (SCL-90); (a) Grissett & Fitzgibbon (1996); (b) Pekkarinen et al (1996)

Taken together, these results support Hypothesis One (a) - that higher levels of psychological distress are found in a sample of clinically obese patients currently attending dietetic services for support with weight management, compared to levels found in non-clinical populations reported in the literature.

3.3.2 Eating Disordered Syptomatology and Clinical Obesity

Hypothesis One (b) predicted that high levels of eating disorder symptomatology (measured by the restraint, weight concern, shape concern and eating concern subscales of the Eating Disorder Examination-Questionnaire) would be found within this group of participants, compared to levels found in non-clinical populations reported in the literature.

Table 6 compares the means (with standard deviations and confidence intervals) between participant scores from this study and with control groups from other studies. Table 6 shows that the subjects in the present study score higher than the subjects in the other samples on all of the subscales.

Table 6 Means (SD),[CI 95%] EDE-Q subscale scores for different sample groups.

	Overweight not seeking treatment. N = 60(a)	Normal weight controls. N=65(b)	Clinically obese N=74 (c)
EDE-Q Eating concern	0.99 (0.86) [.77-1.21]		2.24 (1.68) [1.86-2.62]
EDE-Q Shape concern	3.31 (1.55) [2.92-3.70]	3.8 [2.53-5.07]	4.25 (1.23) [3.97-4.53]
EDE-Q Weight concern	2.67 (1.25) [2.35-2.79]	3.01 [1.89-4.13]	3.54 (1.21) [3.26-3.82]
EDE-Q Restraint	1.64 (1.34) [1.30-1.98]		2.95 (1.21) [2.67-3.23]

Note.SCL-90 GSI = Symptom Checklist 90, Global Severity Index; BDI = Beck Depression Inventory; EDE-Q = Eating Disorder Examination (Questionnaire).

(a) Telch & Stice (1998); (b) Elrderge & Agras (1996); (c) Present study

Overall, these results provide support for Hypothesis One (b) They show that higher levels of eating disordered symptomatology are found in a sample of clinically obese patients currently attending dietetic services for support with weight management, compared to levels found in non-clinical populations reported in the literature. (N.B. Scores concerning specific eating disordered symptomatology [EDE-Q] were only used in this part of the analysis. Subsequent analyses involved using the GSI and BDI as measures of psychological distress).

3.4 Psychological Distress and Body Mass Index

Hypothesis Two predicted that there would be an association between BMI and scores on measures of psychological distress.

In this study BMI was not significantly related to GSI ($r=0.06$, ns), nor was it related to BDI ($r=0.01$, ns), suggesting that BMI is not associated with psychological distress (measured by GSI and BDI) in this client group.

For hypotheses three to five which involve two group analyses, GSI totals and BDI totals are separated into 'clinical' and 'normal' scores. These figures are ascertained by splitting GSI totals around the mean GSI score of 0.31 for non-patient populations (Derogatis, 1977). BDI scores are split around the total score of nine, as this denotes scores within the range of 'normal depression' (Beck, 1978).

3.5 Psychological Distress and Binge Eating Behaviour

Hypothesis Three predicted that severe binge eating behaviour would be associated with high scores on measures of psychological distress.

Analysis showed objective binge eating severity was significantly correlated with GSI totals ($r = 0.275$, $p < 0.01$), and with BDI totals ($r = 0.378$, $p < 0.001$).

Table 7 shows the means and standard deviations (in parentheses) for GSI and BDI scores for binge eaters and for non-binge eaters. Table 3.4.a shows that non-parametric two group analyses found a significant difference ($U = 467$, $p < 0.05$, 1 tailed) between GSI scores for binge eaters and for non-binge eaters and also between BDI scores ($U=386$, $p < 0.01$, 1 tailed) for binge eaters and for non-binge eaters. Binge eaters scored significantly higher on both measures than non-binge eaters.

Table 7 Means (standard deviation) and tests of difference between obese binge eaters and obese non-binge eaters on the GSI and BDI

Variable	<i>All</i> (n=74) <u>M (SD)</u>	<i>Bingers</i> (n=18) <u>M (SD)</u>	<i>Non Bingers</i> (n=38) <u>M (SD)</u>	Mann Whitney	Sig
GSI	1.01 (.76)	1.22 (0.81)	0.80 (0.66)	U=467	p<0.05
BDI	18.70 (10.49)	22.67 (9.36)	14.95 (10.23)	U=386	p<0.01

Note.GSI = Symptom Checklist 90, Global Severity Index; BDI = Beck Depression Inventory.

These results support Hypothesis Three - that psychological distress is associated with binge eating behaviour in a sample of clinically obese participants.

3.6 Psychological Distress and Eating Disorder Beliefs

Hypothesis Four predicted that higher scores on measures of eating disordered beliefs would be associated with higher scores on measures of psychological distress.

Table 8 presents the associations between GSI and BDI scores and the four subscales of the EDBQ. It can be seen that a significant correlation was found between GSI and all four subscales of the EDBQ and between BDI and all four subscales of the EDBQ.

Table 8 Spearman's rank correlations between GSI and EDBQ subscale scores

	GSI	BDI
EDBQ NSB	0.86***	0.88***
EDBQ ABO	0.66***	0.73***
EDBQ SA	0.59***	0.68***
EDBQ COE	0.71***	0.70***

Note:*** indicates p<0.0001

GSI=Global Severity Index (SCL-90); BDI=Beck Depression Inventory, EDBQ NSB= Eating Disorder Belief Questionnaire Negative Self Beliefs; EDBQ ABO= Eating Disorder Belief Questionnaire Acceptance By Others; EDBQ NSA= Eating Disorder Belief Questionnaire Self-Acceptance; EDBQ COE= Eating Disorder Belief Questionnaire Control Over Eating.

Table 9 presents the mean EDBQ subscale scores for clinical and normal BDI scores. Non-parametric two group analyses identified a significant difference in EDBQ subscale totals for clinical and normal BDI scores, with participants in the clinical group scoring significantly higher than participants in the normal group on all four subscales of the EDBQ.

Table 9 Means (SD) and tests of difference between participants with a clinical BDI score (BDI>9) and participants with a non-clinical BDI score (BDI≤9) on the EDEQ subscales

<i>Variable</i>	<i>All (n=74) M (SD)</i>	<i>Clinical BDI (n=54) M (SD)</i>	<i>Normal BDI (n=20) M (SD)</i>	<i>Mann Whitney</i>	<i>Sig</i>
EDBQ NSB	36.74(28.44)	48.07 (24.62)	6.15 (8.09)	U=46	p<0.01
EDBQ ABO	38.71 (30.60)	47.88 (30.07)	13.95(13.79)	U=145.5	p<0.01
EDBQ SA	67.16(23.96)	75.90 (19.81)	43.58 (17.59)	U=48	p<0.01
EDBQ COE	30.23(22.05)	37.35 (21.05)	11.00 (9.93)	U=98	p<0.01

Note:BDI=Beck Depression Inventory (Beck, 1978).; EDBQ NSB=Eating Disordered Beliefs Questionnaire, Negative Self-Beliefs subscale; EDBQ ABO=Eating Disordered Beliefs Questionnaire, Acceptance By Others subscale; EDBQ SA=Eating Disordered Beliefs Questionnaire, Self Acceptance subscale; EDBQ COE=Eating Disordered Beliefs Questionnaire, Control Over Eating subscale (Cooper, Cohen-Tovee, Todd Wells & Tovee, 1997).

Table 10 presents the mean EDBQ subscale scores for clinical and normal GSI totals. Two way group analyses identifying significant differences in EDBQ subscale totals by clinical and normal GSI scores, with participants in the clinical group scoring significantly higher than participants in the normal group on all four subscales of the EDBQ.

These results support Hypothesis Four by providing evidence that high scores on measures of eating disordered beliefs are significantly associated with clinical scores on measures of current psychological distress within this clinically obese sample.

Table 10 Means (standard deviation) and tests of difference between participants with a clinical GSI score ($GSI > 0.31$) and participants with a non-clinical GSI score ($GSI \leq 0.31$).

<i>Variable</i>	<i>All</i> (n=74) <u>M (SD)</u>	<i>Clinical GSI</i> (n=54) <u>M (SD)</u>	<i>Normal GSI</i> (n=20) <u>M (SD)</u>	Mann Whitney	Sig
EDBQ NSB	38.71 (30.60)	44.80 (26.20)	5.07(4.83)	U=26.50	p<0.001
EDBQ ABO	38.71 (30.60)	45.83 (30.08)	10.73 (9.02)	U=184	p<0.001
EDBQ SA	67.16(23.96)	75.20 (19.23)	35.56 (10.89)	U=135	p<0.001
EDBQ COE	30.23(22.05)	35.79 (21.05)	8.33 (7.45)	U=145.50	p<0.001

Note. GSI=Global Severity Index (SCL-90) (Derogatis, 1977)

EDBQ NSB=Eating Disordered Beliefs Questionnaire, Negative Self-Beliefs subscale; EDBQ ABO=Eating Disordered Beliefs Questionnaire, Acceptance By Others subscale; EDBQ SA=Eating Disordered Beliefs Questionnaire, Self Acceptance subscale; EDBQ COE=Eating Disordered Beliefs Questionnaire, Control Over Eating subscale (Cooper, Cohen-Tovee, Todd Wells & Tovee, 1997)

3.7 Psychological Distress and Social Comparison

Hypothesis Five contained two elements;

3.7.1 Psychological Distress and Social Comparisons/Submissive Behaviours

Hypothesis 5(a) predicted that negative social comparisons and high levels of submissive behaviour would be associated with high scores on measures of psychological distress.

Table 11 shows the significant correlations between measures of social comparison and submissive behaviour and both GSI and BDI.

Table 12 displays the mean social comparison and submissive behaviour scores for clinical and normal BDI scores. Non-parametric two group analyses identified a significant difference in social comparison and submissive behaviour totals by clinical and normal GSI scores. The clinical group scored higher than the non-clinical group on these measures.

Table 11 Spearmans rank correlation coefficients of GSI total score, and BDI score and SCS and SBS.

	GSI	BDI
SCS	-0.75***	-0.85***
SBS	0.75***	0.79***

Note:*** indicates $p < 0.0001$

GSI = Global Severity Index (Symptoms Checklist-90); BDI = Beck Depression Inventory; SCS= Social Comparison Scale; SBS=Submissive Behaviour Scale.

Table 12 Means (standard deviation) and tests of difference between participants with a clinical BDI score ($BDI > 9$) and participants with a non-clinical BDI score ($BDI \leq 9$).

<i>Variable</i>	<i>All</i> (n=74) <u>M (SD)</u>	<i>Clinical BDI</i> (n=54) <u>M (SD)</u>	<i>Normal BDI</i> (n=20) <u>M (SD)</u>	Mann Whitney	Sig
SCS	49.99(21.35)	41.09 (16.68)	74.00 (11.94)	U=65	$p < 0.001$
SBS	31.41(13.97)	36.89 (11.86)	16.60 (6.44)	U=72.5	$p < 0.001$

Note:BDI=Beck Depression Inventory (Beck, 1978); SCS=Social Comparison Scale (Allan & Gilbert, 1995); SBS=Submissive Behaviour Scale (Gilbert & Allan, 1994).

Table 13 shows the mean social comparison and submissive behaviour scores for clinical and normal GSI totals. Non-parametric two group analyses identified a significant difference in social comparison and submissive behaviour totals by clinical and normal GSI scores, with the clinical group scoring significantly higher than the non clinical group on these measures.

Table 13 Means (standard deviation) and tests of difference between participants with a clinical GSI score ($GSI > 0.31$) and participants with a non-clinical GSI score ($GSI \leq 0.31$).

<i>Variable</i>	<i>All</i> (n=74) <u>M (SD)</u>	<i>Clinical GSI</i> (n=59) <u>M (SD)</u>	<i>Normal GSI</i> (n=15) <u>M (SD)</u>	Mann Whitney	Sig
SCS	49.99(21.35)	43.20 (17.99)	76.67 (8.88)	U=59	$p < 0.001$
SBS	31.41(13.97)	35.37 (12.49)	15.80 (6.68)	U=74	$p < 0.001$

Note. GSI=Global Severity Index (SCL-90) (Derogatis, 1977); SCS=Social Comparison Scale (Allan & Gilbert, 1995); SBS=Submissive Behaviour Scale (Gilbert & Allan, 1994).

The results support hypothesis Five (a) - that negative social comparisons and submissive behaviours are associated with psychological distress in this sample.

3.7.2 *Psychological Distress and Shame*

Hypothesis Five (b) predicted that high scores on measures of shame would be associated with high levels of psychological distress. Two components of the experience of shame (i.e. global negative self-perception and global negative judgements concerning how others perceive the self) were measured using the Internalised Shame Scale (ISS) and the Other As Shamer Scale (OAS) respectively.

Table 14 shows the association between GSI and BDI and measures of shame. A significant association ($p < 0.001$) was found between both GSI and BDI and the two measures of shame.

Table 14 Spearman's rank correlations between GSI and shame

	GSI	BDI
ISS	0.85***	0.87***
OAS	0.80***	0.82***

Note:*** indicates $p < 0.0001$; *GSI = Global Severity Index (Symptoms Checklist-90)*; *BDI = Beck Depression Inventory*; *ISS=Internalised Shame Scale*; *OAS= Other As Shamer Scale*.

Table 15 shows the mean ISS and OAS scores for clinical and normal BDI totals. Non-parametric two way group analyses revealed a significant difference in shame score totals by clinical and normal BDI scores, with the clinical group scoring significantly higher on both measures.

Table 15 Means (standard deviation) and tests of difference between participants with a clinical BDI score (BDI>9) and participants with a non-clinical BDI score (BDI≤9).

<i>Variable</i>	<i>All</i> (n=74) <u>M (SD)</u>	<i>Clinical BDI</i> (n=54) <u>M (SD)</u>	<i>Normal BDI</i> (n=20) <u>M (SD)</u>	Mann Whitney	Sig
ISS	51.05(25.41)	63.33 (16.50)	17.90 (11.68)	U=21	p<0.001
OAS	33.62(17.98)	41.69 (13.36)	11.85 (7.82)	U=41.50	p<0.001

Note:BDI=Beck Depression Inventory (Beck,1978); ISS=Internalised Shame Scale (Cook, 1990); OAS=Other As Shamer Scale (Goss et al, 1994)

Table 16 presents the mean ISS and OAS scores for clinical and normal GSI totals. Non-parametric two group analyses identified a significant difference in shame totals by clinical and normal GSI totals, with the clinical group scoring higher on both measures.

Table 16 Means (standard deviation) and tests of difference between participants with a clinical GSI score (GSI>0.31) and participants with a non-clinical GSI score (GSI≤0.31).

<i>Variable</i>	<i>All</i> (n=74) <u>M (SD)</u>	<i>Clinical GSI</i> (n=59) <u>M (SD)</u>	<i>Normal GSI</i> (n=15) <u>M (SD)</u>	Mann Whitney	Sig
ISS	51.05(25.41)	60.42 (18.90)	14.20 (7.93)	U=21	p<0.001
OAS	33.62(17.98)	39.73 (14.49)	9.60 (6.40)	U=35	p<0.001

Note. GSI=Global Severity Index (SCL-90) (Derogatis, 1977); ISS=Internalised Shame Scale (Cook, 1990); OAS=Other As Shamer Scale (Goss et al, 1994)

The results support hypothesis Five (b) - that the two components of shame (global negative self-judgements and global negative judgements concerning how the self is perceived by others) are associated with psychological distress in this sample.

3.8 Predictors of Psychological Distress in Clinical Obesity

To test Hypothesis Six, it was intended that stepwise multiple regression analysis would be used. However, measures of psychological distress (GSI, BDI), eating disordered beliefs (EDBQ) and social comparisons and shame (SCS, SBS, ISS and OAS) were all found to be

highly inter-correlated (Table 17 shows the correlations between the measures). Bryan & Cramer (1999) note that if the correlation co-efficient between each pair of independent variables equals or exceeds 0.80 then multicollinearity is exhibited and regression analysis cannot be used (see also Stevens, 1996).

To examine whether the measures of psychological distress (GSI, BDI), eating disordered beliefs (EDBQ) and social comparisons and shame (SCS, SBS, ISS and OAS) were actually measures of the same construct, a principal component factor analysis with oblique rotation was performed.

If the measures of psychological distress (GSI, BDI), eating disordered beliefs (EDBQ) and social comparisons and shame (SCS, SBS, ISS and OAS) were measuring different constructs, one would expect them to load onto three different factors: one for psychological distress; one for eating disordered beliefs; and one for social comparison variables. The present study's sample size ($n=74$) allowed for seven subjects per variable (Stevens, 1996).

The results of the factor analysis revealed a one-factor solution with an eigen value of 7.7, accounting for 77.1% of the variance. The component matrix is shown in Table 18.

The results indicate that in an obese population, the measures of psychological distress (GSI, BDI), eating disorder belief (EDBQ) and social comparison and shame (SCS, SBS, ISS OAS) effectively measure a single global construct of psychological distress.

To examine the internal consistency, a one-factor scale of psychological dysfunction (consisting of the variables GSI, BDI, EDBQ subscales, SCS, SBS, ISS and OAS) was

produced. Internal consistency was high for this scale – Cronbachs alpha was calculated ($\alpha = 0.82$, $n=74$). This provides further evidence that all of these measures are measures of a single construct in this population.

Table 18. Component matrix for principal components factor analysis with oblique rotation on the measures analysed

	Component 1
ISS shame score total	0.936
OAS shame score total	0.925
BDI total	0.923
EDBQ negative self beliefs	0.921
Social comparison total	-0.888
EDBQ acceptance by others	0.867
Submissive behaviour total	0.865
SCL-90 GSI total	0.855
EDBQ control over eating	0.817
EDBQ self acceptance	0.766

Note. ISS=Internalised Shame Scale; OAS= Other As Shamer Scale; BDI=Beck Depression Inventory; EDBQ=eating Disordered beliefs Questionnaire; SCL-90 GSI= Symptoms Checklist-90, Global Severity Index.

Table 17. Spearman's Rank Correlations between measures of psychological distress, weight and shape concerns, binge eating, eating disordered beliefs, social comparison, submissive behaviour, shame and Body Mass Index.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)		
<u>Psychological Distress</u>															
(1)GSI	1.00														
(2) BDI	.883*	1.00													
<u>Weight and Shape Concern</u>															
(3) EDE-Q Weight Concern	.581	.666*	1.00												
(4) EDE-Q Shape Concern	.654*	.717*	.795*	1.00											
(5) EDE-Q Eating Concern	.632*	.765*	.653*	.778*	1.00										
(6) EDE-Q Restraint	.139	.192	.367	.382	.343	1.00									
<u>Binge eating</u>															
(7) EDE-Q Objective binge eating	.275*	.378	.308	.502	.512	.27	1.00								
<u>Eating Disordered Beliefs</u>															
(8) EDBQ NSB	.856*	.884*	.592	.648*	.706*	.243	.386	1.00							
(9) EDBQ ABO	.658*	.733*	.582	.645*	.780*	.415	.329	.769*	1.00						
(10) EDBQ SA	.585	.679*	.573	.738*	.688*	.315	.458	.618*	.738*	1.00					
(11) EDBQ COE	.707*	.697*	.572	.703*	.733*	.393	.338	.732*	.721*	.634*	1.00				
<u>Social Rank</u>															
(12) Social Comparison Scale	-.752*	-.847*	-.641*	-.626*	-.734*	-.215	-.404	-.850*	-.760*	-.694*	-.597*	1.00			
(13) Submissive Behaviour Scale	.745*	.786*	.565	.676*	.744*	.232	.433	.786*	.660*	.592*	.667*	-.821*	1.00		
<u>Shame</u>															
(14) Internalised Shame Scale	.851*	.856*	.636*	.721*	.765*	.203	.356	.888*	.787*	.635*	.733*	-.815*	.849*	1.00	
(15) Other As Shamer Scale	.802*	.816*	.599*	.704*	.793*	.233	.389	.808*	.807*	.668*	.742*	-.809*	.781*	.895*	
(16) Body Mass Index	.008	.001	-.067	.79	.19	-.204	.183	.108	.125	.015	.201	-.089	.103	.162	.19

Note: Significance level * = $p < 0.001$. GSI= Global Severity Index, Symptoms Checklist-90 (Dergotis et al., 1976); BDI=Beck Depression Inventory (Beck, 1978); EDE-Q=Eating Disordered Examination-Questionnaire Third Edition (Fairburn & Beglin, 1994); EDBQ NSB=Eating Disordered Beliefs Questionnaire Negative Self-Beliefs; EDBQ ABO=Eating Disordered Beliefs Questionnaire Acceptance By Others; EDBQ SA=Eating Disordered Beliefs Questionnaire Self Acceptance; EDBQ COE=Eating Disordered Beliefs Questionnaire Control Over Eating (Cooper, Cohen-Tovee, Todd Wells & Tovee, 1997); Social Comparison Scale(Allan & Gilbert, 1995); Submissive Behaviour Scale (Gilbert & Allan, 1994); Internalised Shame Scale(Cook, 1990); Other As Shamer Scale(Goss et al., 1994);Body Mass Index=(Weight in kg)/(Height in cm)²

4 Discussion

This chapter will begin by interpreting the findings with reference to the literature outlined in chapter one. The significance of the new findings and how these relate to current conceptualisations of psychological distress in obesity will be explored and the main strengths of the present study outlined, with particular attention paid to implications for clinical developments, theory and service provision. Additionally, the limitations of this study will be discussed and consideration given to areas of potential future research.

4.1 Psychological Distress in Clinical Obesity

The findings of this study demonstrate that higher levels of current general psychological distress and depressive symptomatology exist in a clinically obese population, than in a population of overweight and obese individuals not seeking treatment (Telch & Stice, 1998), or in a normal weight population (Derogatis, 1977). This finding is consistent with previous research reporting elevated levels of psychological distress in clinically obese treatment seeking populations (Fitzgibbon et al, 1993; Goldsmith et al, 1992; Prather & Williamson, 1988; Spitzer et al, 1992; Stunkard & Wadden, 1992).

Although gender differences appear to be reflected in these findings, overall, these scores denote levels of distress higher than would be typically expected in a non-psychiatric population (Derogatis, 1977). Indeed, the levels of general psychological distress and depressive symptoms reported in the clinically obese group may be considered to be indicative of clinical levels of psychopathology. Previous research that has identified

clinical rates of psychopathology, especially depression, in obese patient samples, has highlighted the clinical implications of this observation (Marcus et al, 1990; Robertson & Palmer, 1997; Striegel-Moore et al, 1998, 2000; Yanovski et al, 1993). Co-morbid mental health difficulties have been identified as a predictor of attrition in individuals seeking support with weight management (Wilson, 1994) and are also associated with weight loss treatment failure and/or a rapid return to baseline weight if any weight is lost during treatment (Fairburn & Cooper, 1996). The literature concerning eating in response to negative emotional states (Agras & Telch, 1998; Butow et al, 1994; Lehman & Rodin, 1989; Lingswiler et al, 1989) and the biological consequences of dieting on mood (e.g. in Brownell & Foryet, 1986; Wilson 1996) illustrate the importance of comprehensive assessment and formulation procedures to inform treatment provision for all individuals seeking health care support for weight loss (Brownell & Rodin, 1994). This study has highlighted clinical levels of psychological distress in a client population not specifically receiving psychiatric or psychological support and therefore is in agreement with suggestions within the literature for a more comprehensive assessment of these individuals (e.g. Brownell & Wadden, 1992). This is already standard procedure when assessing patients who have anorexia nervosa or bulimia nervosa (Wilson, 1996).

The distribution of scores on subscales of the SCL-90 identified in this study are different to those found in a non-psychiatric population but similar to the scores for a psychiatric out-patient population (Derogatis, 1977). The higher score on the 'somatisation' subscale (which reflects distress arising from perceptions of bodily dysfunction), when compared to psychiatric out-patients and to non-patients, may be understood in terms of increased health problems and anxieties associated with excess weight in clinical obesity (Lew & Garfinkel, 1979; Stunkard & Rissanen, 1995).

A relatively high score on the SCL-90 subscale of ‘interpersonal sensitivity’ (which focuses on feelings of personal inadequacy and inferiority, particularly in comparison with others) and a low score on the ‘hostility’ subscale (reflecting thoughts, feelings, or actions characteristic of the negative affect state of anger), as demonstrated for the clinically obese sample, are interesting results when considered in conjunction with the literature concerning interpersonal problems in eating disorders. Research in this area has identified interpersonal distress, social avoidance and fear of confrontation as being characteristic of many individuals who have eating disorders (Eldredge et al, 1998; Goodrick et al, 1999; Spitzer et al, 1993) and suggests that these difficulties may also be experienced by obese individuals as well.

This study failed to identify an association between Body Mass Index (BMI) and psychological distress/depressive symptomatology. Those participants who had the highest BMIs in the sample therefore were not the individuals experiencing the greatest levels of psychological distress. This finding is in accordance with previous research assessing the relationship between body weight and psychopathology in clinical obesity (Eldredge & Agras, 1996; Telch & Agras, 1994) and generates further support for the notion that the relationship between distress and obesity cannot be explained by body weight alone.

4.2 Eating Disorder Symptomatology in Clinical Obesity

4.2.1 Binge Eating Behaviour

Previous research has identified binge eating as being an important factor in differentiating between obese individuals who experience psychological distress and those who do not, in

a treatment seeking sample (Brownell & Wadden, 1992; de Zwaan et al, 1994; Fairburn et al, 1993; Grissett & Fitzgibbon, 1996; Kaplan & Ciliska, 1999; Molinari et al., 1997; Spitzer et al, 1993; Telch & Argas, 1994; Yanovski et al, 1993). This study has produced evidence in support of the association between binge eating behaviour and psychological distress in a clinically obese, treatment seeking sample population. Furthermore, in contrast to Telch et al (1988), this study has identified no relationship between binge eating behaviour and BMI. Therefore, the clinical recommendations made by de Zwaan (1994), Eldredge & Agras (1996) and Molinari et al. (1997) for example, namely that binge eating behaviour needs to be assessed in clinical obesity, irrespective of the degree of excess weight and that normalising eating patterns and behaviour is a good place to start treatment, are also supported by this study.

Objective binge eaters account for 48.6% of this sample population. Research concerned with assessing binge eating behaviour has identified a varying incidence of objective binge eating and this variance appears to be explained largely by the criteria used to describe binge eating. Studies assessing 'binge eating behaviour', typically defined as 'eating more than is usual given the circumstances and experiencing loss of control over the eating episode' (c.f. Stunkard et al, 1996), have identified higher rates of objective binge eaters in their community treatment seeking samples (45.9% [Spitzer et al, 1993]; 63% [de Zwaan et al, 1994]; 34% [Yanovski et al, 1993]) than have studies also using community treatment seeking samples, but who have employed DSM IV criteria for 'Binge Eating Disorder' instead (11.2% [Wilson et al, 1993]; 21% [Eldredge & Agras, 1996]; 7.6% [Stunkard et al, 1996]).

Differences in diagnostic instruments also contribute towards the differential findings reported in these studies, with self-report measures generally identifying a higher incidence of binge eating behaviour than interview methods (Stunkard et al, 1996). The present study, using a self-report method (EDE-Q; Fairburn & Beglin, 1994) to measure binge eating, reported a mean total of 5.4 objective binge days. This was consistent with findings from another study using the same measure to assess binge eating in an obese treatment seeking population that reported a mean total of 6.4 objective binge eating days (Marcus et al, 1992). It is important to note that gender differences - the sample from Marcus et al. (1992) study was all female – do not appear to influence these findings.

Specific psychopathology associated with binge eating behaviour in obesity, identified in the literature, include; i) the perception of having less control over eating; ii) more fear of weight gain; iii) more food and weight preoccupation and impulses to overeat; and iv) stricter dietary goals and standards (Cargill, Clark, Pera, Nianra & Abrums, 1999; Dritschel, Williams & Cooper, 1991; Marcus et al, 1992; Mussell et al, 1996; Telch et al, 1998). Findings concerning *actual* dietary restraint however, are not consistent (see ‘Dietary Restraint’ section for further discussion). This has significant assessment and treatment implications for clinically obese individuals attending dietetic services and other weight management programmes.

4.2.2 Extreme Concerns About Weight and Shape

The findings of this study demonstrate that a clinically obese sample (this study) is more concerned about body weight and shape and more preoccupied with food, guilt about eating and fear of losing control, than are normal weight individuals (Eldredge & Agras,

1996) and overweight individuals not seeking treatment (Telch & Stice, 1998). This finding is consistent with previous research reporting higher levels of eating disordered attitudes and behaviours in obese individuals seeking treatment, than in obese individuals not seeking treatment (Lowe, 1996; Marcus et al, 1992; Striegel-Moore et al, 2000).

Elevated levels of weight and shape concerns in clinical obesity may have a realistic foundation. Cultural stereotypes of the 'slim ideal' (Striegel-Moore et al, 1986) and prejudice against obesity does exist. Therefore the tendency to evaluate self-worth based on shape and weight might be considered a normative reaction to social prejudices. Wilfley, Schwartz & Spurrell (2000) also comment that elevated weight and shape concerns in Binge Eating Disorder patients reflect the combined impact of being objectively overweight and having disordered attitudes and behaviours concerning eating, shape and weight. Experiences of prejudice, discrimination and stigmatisation, combined with comparisons to the ideal physical appearance, may help to explain the differences in the levels of eating concerns and concerns about body size and weight between the clinically obese group (this study) and the overweight group not seeking treatment (Telch & Stice, 1998), identified in this study. However, experiences of prejudice, etc. were not measured in this study and this is therefore an area for future research.

Another possible explanation for the differences in weight, shape and eating concerns between the overweight group and the clinically obese group reported in this study, could be that this finding is due to differences in body weight between the two groups. However, a relationship between BMI and weight and shape concern is not supported in the literature (e.g. Eldredge & Agras, 1996) and no association between BMI and these concerns was identified in this study either.

A further explanation of these findings may be associated with the dietetic treatment in which the clinically obese group are currently involved. The referral and treatment programmes within dietetic services for support with weight management typically involve a focus on current weight, size and shape and eating patterns (Cowburn & Summerbell, 1998; Thompson & Thomas, 2000). This may heighten concerns around these issues for individuals attending these services more so than for individuals who are obese, but who are not attending these services. Although not within the remit of this study, this would be an interesting and potentially important hypothesis to test.

4.2.3 Dietary Restraint

The dietary restraint score was also found to be higher for the clinically obese sample (in this study) than it was for the overweight individuals not receiving treatment in Telch & Stice (1998). It is suggested that this finding reflects the clinically obese sample's awareness of, and adherence to, the dietary plan they are likely to have been advised to try by their dietitian (Thompson & Thomas, 2000). In some obese individuals, the employment of specific strategies (e.g. food restriction, avoidance of specific foods, adherence to a specific diet plan) to control their weight, is accompanied by failure to adhere to set dieting standards, resulting in increased psychological distress and binge eating behaviour. Although the relationship between restraint and binge eating behaviour was not analysed in this study, high levels of dietary restraint (when compared to Telch & Stice's [1998] overweight group) and significant levels of binge eating behaviour (48.6% reported in the clinically obese sample in this study) provide support for the diet –binge cycle identified in the cognitive model of the maintenance of bulimia nervosa (Fairburn, 1985). Future research may need to focus on these findings, especially as dietary restraint

is an important focus of dietetic treatments for weight loss (Cowburn & Summerbell, 1998).

4.2.4 Purging Behaviours

In this study, low levels of purging behaviour were identified in clinical obesity. This fits with a previous study (Wilson et al, 1993) which used the Eating Disorder Examination-Questionnaire (EDE-Q) (Fairburn & Beglin, 1994) to assess purging behaviours in obese binge eaters and obese controls, and identified no episodes of self-induced vomiting and a mean of 0.2 days for laxative abuse in obese non-bingers.

Marcus et al. (1988) assessed purging behaviours in obese binge eaters, using DSM IV Criteria for bulimia nervosa, and found that 13% of their sample reported occasional self-induced vomiting, whilst 26% misused laxatives. Marcus et al (1992) assessed purging behaviours in obese binge eaters using the Eating Disorder Examination (EDE) (Fairburn & Cooper, 1987). 6.7% of the sample reported self-induced vomiting and 6.7% misused laxatives over the previous 28-day assessment period. Hudson & Williams (1981) study of obese individuals meeting DSM III criteria for bulimia nervosa, reported self-induced vomiting in 9% of individuals; laxative abuse in 17% and diuretic abuse in 39%. Increased levels of purging behaviour identified in these studies when compared to the findings in this study and Wilson et al (1993) may be a reflection of the measures used to assess binge eating. If so, then they indicate that interviews methods to assess binge-eating behaviour, identify more dysfunctional eating patterns and appear to be more sensitive than self-report measures to identify purging behaviours.

4.3 Psychological Distress and Eating Disorder Beliefs in Clinical Obesity

This study has identified a relationship between psychological distress and eating disorder beliefs in clinical obesity that suggests the framework of the cognitive model of eating disorders may also be usefully applied to understanding psychological distress in clinical obesity.

Eating disordered beliefs, including beliefs associated with overvalued concerns about the importance of shape and weight, and subsequent beliefs concerning food and eating behaviours, are considered to be the core psychopathology of eating disorders (Cooper & Fairburn, 1992; Fairburn, 1985; Vitousek & Hollon, 1990) and are central to the maintenance model of bulimia (Fairburn, 1985). It is not within the scope of this study to compare the rates of these beliefs for clinically obese individuals with rates identified in research using anorexic and bulimic subjects (Cooper et al., 1997; Cooper & Hunt, 1998). However, the strong correlation between psychological distress and these beliefs, identified in this study, indicates that the dysfunctional assumptions and attitudes, central to a cognitive understanding of the maintenance of eating disorders, may also be important in a cognitive understanding of the maintenance of psychological distress in clinical obesity.

Schema theories of eating disorders (e.g. Vitousek & Hollon, 1990) posit that for individuals who have eating disorders the underlying schemata reflect beliefs and attitudes that emphasise the importance of weight and shape in evaluations of self-worth, etc. The

finding in this study that weight and shape related beliefs appear to have an important effect on the sequencing of information, perpetuating negative views of the self in clinical obesity, indicates that clinically obese individuals may have also developed schema concerned with evaluation of self worth in terms of weight and shape. This study found that clinically obese individuals who experience psychological distress are likely to be more schematic for body size and shape information and will be more likely to invest in their body size and shape as a standard of self evaluation and index of self worth.

Schema driven processes are hypothesised to play a part in the maintenance of dysfunctional behaviours and in psychological distress. However, differences evidently exist between the behaviour of obese individuals and that of anorexics and bulimics. These divergent behaviours (specifically around eating and dietary restraint) are likely to reflect discrepancies in the emotional content of core beliefs and attitudes. Further research is required to ascertain the exact nature of these differences. The recognition of the apparent role of eating disordered beliefs and their association with psychological distress in clinical obesity has important assessment and treatment implications. A detailed assessment of the idiosyncratic nature of these beliefs, and how they reflect schema-driven processes, needs to be undertaken in obese individuals. This could be important in developing effective cognitive treatments for this client group.

4.4 Psychological Distress and Social Comparison Theory in Clinical Obesity

Social comparison theory has not, to the author's knowledge, been applied to the study of psychological distress in clinical obesity. A relationship between psychological distress and social comparison variables was identified in this study. This supports the hypothesis that the cognitive variables implicit in social comparison have an important role in mediating psychological distress in clinical obesity. This supports the hypothesis that obese individuals appear to have internalised the negative social and cultural attitudes towards obesity and perceive themselves as being less attractive in comparison to others. In accordance with cognitive theory (e.g. Beck et al., 1987), beliefs have a subsequent effect on behaviour - the individual who believes him- or her-self to be inferior in social situations is more likely to act submissively and is consequently more likely to experience the affect of shame.

The negative social comparison beliefs measured in this study, and which were found to be associated with psychological distress, concerned global social comparisons. Other research investigating relationships between social comparisons and disordered eating behaviours have focused on physical comparisons (Heinberg & Thompson, 1992; Storer & Thompson, 1996; Striegel-Moore et al, 1986; Thompson et al, 1991). Although these studies have identified associations between appearance related comparisons and eating disorder behaviour, no statistically significant relationships have been identified between BMI and appearance related comparisons. Faith et al (1997) identified no support for the

hypothesis that BMI moderates the association between appearance-related comparisons and body image appraisal in mildly and moderately overweight individuals. The present study has also found no support for associations between, BMI and global negative social comparisons or psychological distress in clinically obese individuals. These findings therefore imply that global negative social comparisons and more specific appearance related comparisons may be a useful focus for treatment of psychological distress in individuals attempting weight loss or who have 'issues' with their weight or shape irrespective of their actual weight. With regard to sequencing of treatment, an initial therapeutic focus on interpersonal relationship issues and on developing a more positive perception of the self may be advisable before, or in conjunction with, dietary restriction techniques (see also Brownell, 1991).

A strong association between high levels of shame proneness and psychological distress in clinical obesity was identified in this study. This is in accordance with research identifying associations between shame and psychopathology in other populations (Gilbert et al, 1992; Tangney et al, 1992) and significantly, with eating disordered populations (Burney & Irwin, 2000; Cook, 1990; Sanftner & Crowther, 1998). Research concerning the relationship between shame and eating disorders suggest that it may be a complex phenomenon and that further study is needed to clarify its exact nature. Certainly, with regard to shame experiences in clinical obesity, future research needs to work towards specifying the focus for that shame: is the shame concerned with the specific context of eating or is it bodily shame? Previous research in this area has identified shame about eating contexts and shame about the body as being associated with eating disorder symptoms in non-eating disorder patient populations (Burney & Irwin, 2000). Research concerning whether a similar focus of shame exists in clinically obese patients is now needed.

Overall, these findings illustrate the proposed role of social comparison and shame-based cognitions in psychological distress in clinical obesity. Negative cultural bias towards obesity (Crocker et al., 1993; Smith, Marcus, Lewis, Fitzgibbon & Schreiner, 1998) suggest that shaming experiences may be real rather than purely psychological. This distinction has important implications for treatment.

4.5 The Interrelations Between Psychological Distress, Binge Eating Behaviour, Eating Disorder Beliefs and Social Comparison Variables in Clinical Obesity.

All the variables studied: psychological distress; binge eating behaviour; eating disordered beliefs; social comparison; submissive behaviour and shame, were highly inter-correlated. Comparisons between the two theoretical models (cognitive model of eating disorders and social comparison theory) with regard to their association with psychological distress were therefore untenable and it is concluded that although both models are applicable in the understanding of psychological distress in clinical obesity, it is not possible to test whether one is more valid or whether it contributes more to the understanding of psychological distress in an obese population than does the other.

4.5.1 A Proposed Cognitive Model of Psychological Distress in Obesity

This finding enables a tentative cognitive formulation to be developed to aid understanding of the maintenance of psychological distress and weight gain in clinical obesity. The development of this formulation is based on the findings of this study and on the relevant literature, and encompasses the cognitive, emotional and behavioural factors identified as associated with distress in obesity. A description of the model shall now be given (please refer to Figure One).

Beck and Freeman (1990) theorise that self-schemas are a central concept in the clinical understanding of a variety of psychological disorders. This model, with reference to the findings of this study, proposes that obese individuals who experience elevated levels of psychological distress have cognitive structures characterised by self-schemata related to the domains of the social self (perceiving the self as inferior to others) and to body weight/shape/appearance (use of weight and shape to evaluate self worth). Therefore, these individuals are likely to process information relevant to these dimensions differently and more readily than would someone who has not developed these schemata (Markus & Sentis, 1984). Using the findings from this study, it is hypothesised that these two clusters of assumptions are both important in characterising psychological distress in obesity. (NB. Although it is likely that other variables and associated assumptions are also involved, consideration of these does not fall within the aims of this research).

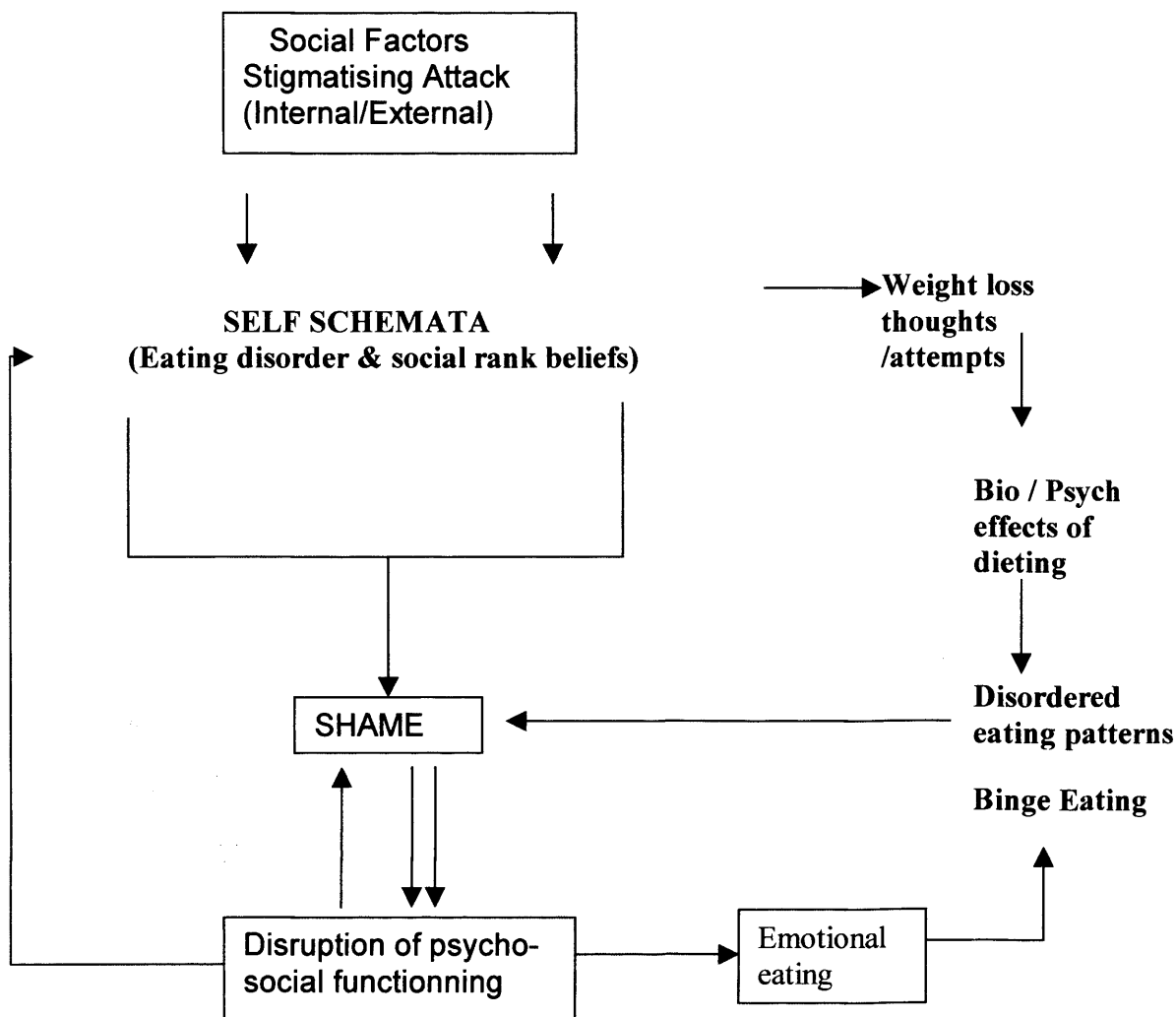
This formulation proposes that contextual events activate schema driven processes. For obese, psychologically distressed individuals, it is hypothesised, these schema are activated primarily by attacks on the self. These attacks may be real (i.e. experiences of bullying, prejudice or stigmatisation understood in relation to weight and size) or internal (i.e. self-attacking behaviour resulting from judgements of the self as being bad, worthless, flawed or unattractive, due to excess weight and 'disgusting' body fat, and the belief that they have therefore created a negative image of themselves in the eyes of others [Gilbert & Andrews, 1998]).

These self-schema are also affect laden and therefore exposure to these events provokes increased body image dissatisfaction and dysphoria. In this model, activation of these schema triggers a shame response (characterised by feelings of being inferior, worthless, of being 'damaged goods' and being perceived as being at fault by others), resulting in the disruption of psychosocial functioning and low self-esteem, depression and anxiety etc. These negative emotions may then result in a feedback loop and a further increase in shame. A negative shame cycle is thereby generated.

The findings from this research also indicate, it is suggested, that activation of these dominant self-schema trigger weight loss attempts, as the individual seeks to achieve a more positive, less flawed, image of themselves (Gilbert & Andrews, 1998). However, it would appear that for many obese individuals experiencing elevated levels of psychological distress, these strict dietary standards are difficult to maintain (due to both biological and psychological factors – see Brownell and Foryet, 1986, for further discussion - and are typically associated with binge eating behaviour and other patterns of disordered eating (Telch & Agras, 1998)). The breaking of dietary rules and associated feelings of failure and self-disgust commonly result in reinforcing or reactivating shame

cognitions, especially if the breaking of the dietary rules is perceived as a reflection of a bad self (Sanftner & Crowther, 1995) and increased psychopathology is a likely result.

Figure 1 A proposed cognitive model of weight and psychological distress maintenance in a clinically obese treatment seeking sample



Finally, the model proposes that the disrupted psychosocial functioning maintains and reinforces the underlying beliefs and assumptions of the core schema and a vicious cycle is created. Social pressures to be slim and negative experiences due to shape and weight further reinforce the content of the core beliefs and contribute to the experience of distress.

As emphasised above, the model is a tentative proposal to help improve understanding of psychological distress in clinical obesity and needs to be tested and validated by future research. It is anticipated that this model may then be applied to the development of case conceptualisations and provide a focus for interventions when working with obese individuals experiencing psychological distress. Extreme caution must be applied when generalising this model to other groups of obese individuals.

4.6 General Strengths of the Study

This study suggests a comprehensive and theoretically based formulation of psychological difficulties in clinical obesity that may be incorporated into the developing field of research examining the complex relationship between psychopathology and obesity. The identification of specific psychological variables is a further departure from the notion of psychological distress as being a unitary concept and extends the theoretical understanding of distress in obese individuals. The proposed model of psychological distress emphasises the significance of very real social pressures and stigmatisation which obese individuals typically encounter in addition to highlighting the importance of internal negative self-evaluative processes.

The detailed investigation of cognitive, affective and behavioural factors associated with psychological distress in obese individuals from a specific clinical population, using valid and reliable assessment instruments, are considered major strengths of this study, and the findings support, and add to, the existing bodies of literature (Fitzgibbon & Kirschenbaum, 1990; Tanco et al, 1998; Yanovski et al, 1993). The consideration of a range of eating disordered behaviours (e.g. restraint, purging) in addition to binge eating is a useful

starting point for encouraging a widening of the research, assessment and treatment foci within clinical obesity.

The subsequent strengths of this research are concerned with the clinical implications of the findings.

4.7 Clinical Implications

4.7.1 Clinical Engagement

This study found that clinically obese people are highly shame prone. Shame prone individuals may find it difficult to approach others for support because of beliefs that they are at fault or a bad person and others will know this and consequently reject, ridicule or scorn them for their inadequacies. Social attitudes towards obesity may also make it difficult for clinically obese individuals to ask for help from others. Prejudice against obese individuals *does* exist and the perception of being inferior to others may be considered a normative reaction to social prejudices. The combination of the current negative social and cultural attitudes towards obesity (Crocker et al., 1993; Sarlio-Lahteenkova et al., 1995) and towards mental health problems (Gilbert & Andrews, 1998) may therefore make it particularly difficult for obese patients to access treatment. These attitudes are also present in health care professionals (Keppie & Lyon, 1999). Even if individuals with such beliefs do seek support from others, it is possible that they will believe that the intention of others in offering support is to assert their own dominance and to ridicule or scorn them (Gilbert & Andrews, 1998).

The recognition that obese individuals are likely to experience high levels of shame, an awareness of the phenomena associated with shame, and its association with psychological and interpersonal difficulties, is needed to help services adapt current practices to facilitate engagement for individuals who experience these problems. At a service level, services could begin to challenge the social prejudice and stigma attached to overweight and obesity and to encourage models of service delivery which discourage dependency and social comparison evaluations, but promote self-efficacy and partnership with the clinician to effect change.

Recognition of shame-based issues has other important implications for the client-therapist relationship as well. Recognition of shame proneness may help the clinician to pay particular attention to several therapeutic issues, such as anger driven self-attacking cognitions, high levels of self-consciousness and involuntary behaviours such as avoidance of eye contact, blushing, which may make it difficult for the client to engage in therapy. Such issues may eventually provide a focus for therapeutic change. Accordingly, therapy may need to focus on encouraging the individual to focus on their performance in specific situations or at specific tasks rather than engaging in global negative self-evaluations based primarily on thoughts and feelings about their weight and shape.

An awareness of transference issues may be particularly important in working with individuals who are obese and who present with shame based difficulties. The therapist should be aware that such clients may place them in the position of a potentially critical, ridiculing, rejecting and superior other. By placing the therapist in this position, reflecting the position of power others are perceived to have in the client's life, the therapist may experience being placed in the role of rescuer or protector as the client experiences feelings

of helplessness, or alternatively, they may experience expressions of resentment or anger directed towards them.

The development of an empathic therapeutic relationship is particularly important for this client group, so that trust in the belief that the therapist will not harm or ridicule them is developed. This is likely to be especially important for obese individuals who have experienced discrimination and stigmatisation as a result of their size and therefore empathy is particularly crucial in discussing weight, size and eating related information likely to epitomise the pain and fear of revelation for these individuals.

4.7.2 Clinical Assessment

Obese individuals who present for weight management treatment at dietetic clinics typically receive an assessment, which focuses on dietary and health/medical factors, with little attention being given to psychological factors associated with their weight (Rapoport, 1998). This study has identified the importance of a number of psychosocial factors that are tentatively proposed to be involved in the maintenance of distress in obesity and in the prevention of weight loss.

The complex nature of obesity means that many factors (biological, environmental, and psychological) constitute causal and maintaining factors (Brownell & Wadden, 1992). A careful and comprehensive assessment procedure is therefore required to identify, describe and evaluate the differing characteristics of individuals who are obese, as appropriate for differential treatment procedures (de Zwaan et al, 1997, Fitzgibbon & Kirschenbaum, 1990; Molinari et al., 1997; Porezelius, Houston, Smith, Arfken & Fisher, 1995).

Consideration of a range of variables in the assessment of other eating disorders (anorexia nervosa and bulimia nervosa, for example) is currently considered imperative and it is argued that similar assessment procedures need to be applied to obesity (Brownell & Wadden, 1992; Mizes & Christiano, 1995). Certainly, the importance of assessing cognitive factors such as beliefs and attitudes concerning weight and eating, prior to case formulation when working with eating disorder patients is emphasised in the literature (e.g. Cooper, 1997; Cooper et al, 1997; Fairburn, 1985; Mizes & Christiano, 1995). The findings of this study suggest that cognitive variables, reflecting underlying self-schemata, may serve as barriers to successful weight loss and as predictors of psychological distress and treatment outcome/success in the clinically obese.

With regard to this study, several psychological variables were identified as being related to psychological distress in clinical obesity. These were; i) eating disordered beliefs; ii) negative social comparisons; and iii) shame (in addition to risk factors already well documented in the literature [e.g. gender, binge eating]). Accordingly, assessment procedures in clinical services aiming to support weight loss in obese individuals need, at a minimum, to assess these areas in addition to assessment of weight history, physical health, current nutritional intake etc.

Specific attention is to be given in this section to the importance of assessing for interpersonal difficulties in this client group, especially as due to their body size/shape and shame responses associated with this, they may be more vulnerable to interpersonal difficulties (Crocker et al, 1993; Heatherton & Baumeister, 1996). This study has highlighted the significance of negative social comparisons and the effects of these on beliefs about social rank and behaviour and consequent effects on psychosocial well-being. High scores on the interpersonal sensitivity subscale of the SCL-90 and low scores on the

hostility subscale are also suggestive of difficulties in interpersonal functioning. Eldredge & Argas (1998) maintain that assessment of interpersonal problems is required when assessing obese binge eaters. They note that individuals reporting distress over problems of social avoidance do less well in standard cognitive-behavioural treatment programmes aimed at addressing weight and shape concerns. They state that interpersonal relationships in these individuals are characterised by the inability to express appropriate anger towards others and instead these individuals internalise these emotions, responding in a characteristically submissive and passive manner to interpersonal problems. Other studies which have identified correlations between interpersonal difficulties, severity of disordered eating behaviour and low self esteem (e.g. Foyet et al, 1996; Spitzer et al, 1993; Yanovski et al, 1993) emphasise the role of maladaptive interpersonal thoughts and behaviours in preventing weight loss in these populations

4.7.3 Clinical Treatment

This study identified a high co-morbid occurrence of psychological distress and depressive symptomatology in clinically obese patients presenting for dietetic treatment. The presence of emotional disorders has been found to increase the risk of dysfunctional eating patterns, possibly acting as a means of affect modulation (Kaplan & Ciliska, 1999). Individuals who attend dietetic services for support with weight management are likely to have been unsuccessful in losing weight or maintaining weight loss in the community or in primary care settings (Cowburn & Summerbell, 1998). They are therefore more likely to have experienced numerous failures concerning weight loss and a high percentage may experience motivation problems. Issues of co-morbidity have relevance in this patient group with regard to issues of sequencing treatments. For example, parallels between binge eating in obesity and binge eating in bulimia and in BED indicate that emotional problems

are likely to be secondary to the eating disorder for some individuals and therefore treatment of the emotional disorder is unlikely, in itself, to resolve the eating/weight problem (British Nutrition Foundation Task Force, 1999).

Treatment targets for obese individuals who experience psychological problems are twofold; -i) to achieve weight loss; ii) to improve psychological well being. These goals are generally highly associated; accordingly a focus on one is likely to affect the other (Kirschenbaum & Fitzgibbon, 1995). Weight loss and improved psychosocial health status are the goals central to dietetic and commercial based weight management programmes. The effectiveness of standard dietetic treatments for obesity has been questioned (Bowyer & Trotter, 1997). The general finding concerning typical behavioural and caloric treatments results is that they result in an initial 5 – 20% weight loss with a steady regain back to baseline weight within about five years (Agras, 1991; Fairburn & Cooper, 1996; Wadden, Foster & Letizia, 1992; Wilson, 1994). Dietetic treatments typically do not address the psychological and interpersonal factors identified in this study as being important in understanding psychological distress in clinical obesity (Rapoport, 1998; Wilson, 1994)

Cognitive-behavioural treatment (CBT) programmes used in the treatment of bulimia nervosa have recently been adapted for use with obese individuals with Binge Eating Disorder (Agras et al, 1997; Fairburn & Cooper, 1996; Rosen, Orosen & Reiter). These treatment programmes focus on normalising eating patterns, improving body image, cognitive restructuring and relapse prevention strategies. Results from the treatment outcome studies appear promising. Measures of improved mood, reduced maladaptive thinking concerning weight, shape and eating and consequent disordered eating behaviours and some weight loss have been reported (Fairburn & Cooper, 1996). Some CBT

treatments have matched specific treatments to particular subgroups and have been effective at modifying binge-eating behaviours in individuals with Binge Eating Disorder (Fairburn et al, 1993). However, uncertainty continues to surround the long-term results of weight loss using these techniques. Furthermore, consideration needs to be given to the sequencing of this treatment in conjunction with weight control and the role, if any, of dietary restraint and purging behaviours.

Interpersonal therapy techniques, also employed in the treatment of bulimia (Fairburn et al, 1995), have been adapted for use with obese non-purging patients (Wilfrey et al, 1993). A focus on interpersonal problems in treatment programmes (i.e. improving social support, working through interpersonal difficulties with significant others) has been shown to be effective in reducing binge eating in individuals with BED (Goodrick et al, 1999; Spitzer et al, 1993; Telch and Agras, 1994). These treatments do not typically focus on thoughts/beliefs about food/shape/weight. This study has proposed that beliefs and assumptions around social comparisons are also associated with psychological distress for some obese individuals and may therefore provide a valid emphasis, separate from concerns with eating and weight, for treatment.

Other approaches have also been developed which have moved treatment targets away from weight loss goals (Brownell & Rodin, 1984; Lehman & Rodin, 1989; Wilson, 1996). The results of this study which found no association between BMI and psychological distress in the sample studied, would suggest that in order to reduce psychological distress it may be appropriate to widen the treatment focus for obesity to include treatment goals other than weight loss and encourage self-acceptance on the basis of a wider range of variables (e.g. Eldredge & Agras, 1996; Kaplan & Ciliska, 1999). Modifications to treatment targets could also include addressing social rank and shame based cognitions,

which would incorporate an interpersonal focus of reducing feelings of shame and self reproach in relation to negative perceptions of the self and the belief that one is inferior to others.

Service provision implications also arise as a consequence of recognising clinical levels of psychological distress in individuals attending dietetic services (Bowyer & Trotter, 1997). It is suggested that the more distressed individuals who have difficulty losing weight may not be amenable to standard behavioural and commercial weight loss treatments as these are unlikely to adequately address their needs and at worst this may lead to a worsening of their disordered eating symptoms. For individuals with very disorganised eating patterns, an initial focus on addressing underlying assumptions and normalising eating patterns may be necessary before weight loss is considered. Improvements in the skilled identification of co-morbidity may develop via multidisciplinary team working.

4.8 Limitations

4.8.1 Characteristics of the Sample

This study focused on clinically obese individuals ($BMI \geq 30$) who were currently attending dietetic services. Previous research has criticised use of patient/clinical samples due to inherent sample bias. It has been argued that findings from individuals seeking treatment may not be representative of individuals who are obese in the general population since individuals with multiple diagnoses are more likely to seek treatment (c.f. Telch & Stice, 1998). Studies of psychological distress in obesity that have used clinical samples

are therefore likely to overestimate the roles of co-morbid psychiatric and psychological problems (Streigel-Moore et al, 2000). Individuals who attend dietetic services for support with weight management are likely to have experienced previous weight loss attempts and experienced failure to achieve or maintain weight loss goals. Medical and physical health problems which can be eased or stabilised by weight loss are also considered to be more prevalent in this population (Thompson & Thomas, 2000).

This study did not provide information concerning obese individuals not currently seeking dietetic treatment, thereby making it difficult to generalise findings to obese individuals *not* seeking treatment. Furthermore, the characteristics of the client population involved in this research may limit the generalisability of results; 43.9% of individuals who met inclusion criteria and who were approached to participate declined this invitation. Therefore, the extent to which the results can be generalised to all clinically obese individuals attending dietetic services for weight management is also limited. It is, however, suggested that using the measures included in this study as part of a standard comprehensive assessment package to assess clinically obese individuals entering dietetic services would reduce the bias inherent in sampling procedures and generate information reflecting more accurate levels and patterns of psychological distress in this clinical group. This would, however, be a costly procedure to implement.

Seventy six percent of the sample in this study was female. The relatively small number of men who participated suggests less confidence can be placed in generalising these findings to obese males. Further research focusing on this population would be advised, to determine, with statistical confidence, the extent to which differences in levels of psychological distress could be accounted for by gender. Research in this area notes that

obesity carries greater stigma in females than it does in males (Brownell, 1991; Tanco et al, 1998). Informal discussion with dietitians involved in this research indicated that the gender ratio observed in this study reflects that seen in dietetic practice. However, these statements are not supported by formal research (e.g. Cowburn & Summerbell, 1998). Furthermore, this gender difference does not reflect the more equal levels of obesity for males and females recently reported in the general population (Obesity task Force, 1999) and suggests that this may reflect more general gender differences regarding accessing health care services and/or accessing research programmes.

4.8.2 Measures

The difficulties and limitations of measuring binge eating have been discussed in a previous section of this study and shall therefore not be focused upon here. However, it is important to note that the use of self-report measures to assess binge eating frequency may have resulted in a higher recorded frequency than if a clinical interview had been used (Fairburn & Beglin, 1994; Stunkard, 1996). When measuring this concept, the use of clinical interviews based on DSM IV criteria for Binge Eating Disorder has been advised to avoid over reporting (Stunkard et al, 1996). The use of a clinical interview in this study may have provided a more accurate measure of the occurrence of this behaviour in this sample and of the relationship between binge eating and the other factors measured. However, administration of a clinical interview requires preliminary training (Fairburn & Cooper, 1996) and interview measures have been criticised for their potential to activate shame cognitions in those who experience shame as a result of their bingeing (e.g. Johnson et al, 1997).

Previous literature (e.g. Gilbert, 1992) has identified high correlations between the Internalised Shame Scale and the Beck Depression Inventory and argues that the correlation may be accounted for by the use of global negative self-evaluative questions. It may therefore have been helpful to remove the self-evaluative questions on the BDI, or to avoid the use of measures that have a large self-evaluative component and to use measures that focused on somatic/behavioural components of psychopathology as an alternative. The 'depression' subscale of the SCI-90 is such a measure, however associations with this subscale were not considered in this study.

4.8.3 Procedure

Although the use of self-report measures has been criticised for not being as accurate or valid in the reporting of symptom frequency (e.g. Stunkard, 1996). The procedure in this study entailed that the researcher remained with each participant for the duration of their involvement, which afforded the opportunity to ensure that no data was omitted in participant's responses and that all questions were answered, and all ambiguities clarified. However, this procedure may have introduced bias into the data collection. For example, participants may have wanted to 'please' the researcher ('social desirability' was not measured). Additionally high shame prone individuals may have felt very uncomfortable with the researcher present as they completed the forms.

Wilson (1996) notes that the stage at which people are at in their weight management treatment will influence their responses on psychological measures. To an extent, 'stage of treatment' was controlled for in the present study as all participants were initially approached at the end of their second dietetic appointment. However information concerning participant's personal weight loss treatment histories and their current

treatment progress would both be considered useful information to record if this research was to be repeated. Current dieting behaviours and success (or not) at adhering to dietary treatment plans would also have been interesting especially as there are strong associations in the literature between failed dieting attempts, current dietary restraint and depression; and the biological effects of dietary restriction on mood and concentration (Agras & Telch, 1998; Brownell & Foreyt, 1986; Cargill et al, 1999; Garrow, 1998).

4.9 Future Research

Consideration of potential future research has been provided throughout this chapter. This section therefore aims to highlight the main areas.

Future research studies with larger sample sizes (to increase the power of the statistical analyses) and using individuals who are overweight and obese from other sample populations are needed to inform understanding of the psycho-social factors associated with obesity in general rather than by focusing on a specific population. Differences in behaviours between anorexics and obese individuals are hypothesised to reflect discrepancies in the content of core beliefs and attitudes. Future research could focus on answering the question of whether different populations of obese individuals (e.g. those attending hospital based weight loss programmes vs. those attending weight watchers vs. those not seeking treatment; or ‘disordered eaters’ vs. ‘simple obesity’) are characterised by specific core beliefs and assumptions. The identification of differences in content of core beliefs has implications for treatments.

This research has found that both the cognitive model of eating disorder beliefs and the social comparison theory of general psychological distress make valid contributions to the understanding of psychological distress in a clinically obese sample. An important question for future research is to address which component of the proposed model constitutes the most effective treatment focus, and for whom. For example, treatment may be targeted towards the use of CBT to address eating disorder beliefs. It may be the case that treatment of this component alone is enough to improve psychological well being. However, it is perhaps more likely that treatment attention will also need to be given to other components of the model. For example, addressing negative social comparisons and shifting attentional bias to incorporate positive self-other evaluations may be appropriate treatment goals when working with shame-prone individuals; assertiveness training and developing a focus on positive self attributes may be useful when working with individuals who experience stigmatisation and prejudice ; and a normalising of eating patterns and removal of the emphasis from weight loss targets to help break the ‘binge-diet cycle’ are all viable areas of treatment focus. It is suggested that research treatment trials, which would specifically address differing components of the model, would be invaluable in the development of effective interventions to help increase psychological well being and reduce weight gain in clinically obese individuals.

Research focusing on the identification of variables other than food or weight/shape specific factors associated with psychological distress would be considered useful in acknowledging that a wider range of variables are suggested to be strongly associated with psychological distress in obesity. Assessment of cognitive, affective and behavioural factors concerning the client’s wider social world and a more detailed understanding of the impact of these on interpersonal functioning and the interpretation of social ‘feedback’ for obese individuals who experience elevated levels of distress is suggested.

Information concerning various patterns of disordered eating (e.g. 'night eating syndrome' 'grazing') in obesity are required to establish whether they are as strongly associated with high scores on measures of shame (as is binge eating). Identification of shame proneness has important implications for the therapeutic relationship and for engagement and treatment procedures.

Gender differences with regard to psychological distress in obesity also need to be investigated. Brownell and Rodin (1994) note that women experience higher levels of stigmatisation when compared to their male peers and this is likely to have a negative impact on psycho-social functioning. The social pressures to be slim make it more difficult for those who are vulnerable to obesity to cease to use dietary restriction techniques. They are therefore more vulnerable to episodes of binge eating (Fairburn et al, 1995). The social pressures are argued to be higher for women to conform to an attractive ideal and therefore it would be anticipated that experience of psychological distress in obese populations would be higher for women than it would be for men, as obese women would rank much lower than normal weight women in social ranking systems based on attractiveness (Gilbert, 1992).

Future research could usefully focus on identifying the early experiences that lead to the development of self-schemata. It is hypothesised, from the relevant literature and from listening to the experiences of individuals who are obese, that a history of being teased or bullied about weight or size may be important in the formation of these beliefs. The results from this study suggest the necessity of careful assessment of experiences and in particular of the meanings of these experiences to the individual. This is a view that has been reinforced for the author in meeting, and talking with the research participants, during data collection. In addition to further quantitative analyses, a more qualitative approach is

implicated. This would focus on the meaning and interpretation of food and dieting, body size and shape and on the negative social or internal experiences experienced due to weight/size/shape. It is anticipated that such a research focus would increase understanding of the content of the core schema for these individuals and the subsequent influence on psychological and interpersonal difficulties.

5 Conclusions

This research provides support for applying the framework of cognitive models of eating disorders and social comparison models of distress to an understanding of psychological distress in obesity. Overall, this findings highlighted tentative links between specific beliefs and behaviours associated with these two models and psychological distress in a sample of clinically obese individuals. These links appear to be theoretically meaningful, especially with regard to cognitive schema models (e.g. Beck & Freeman, 1990), and provide support for further research in this area. However, caution should be applied to generalising these findings to other obese populations. Shame-proneness was identified as a problem within this group and this has specific implications for treatment. Associations between concern with weight and shape, dietary restraint and binge eating in this sample suggest caution in the use of treatments that focus primarily on dietary restraint issues. The complex nature of obesity and the role of psychology in assessment and treatment is implied.

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Appendix One: DSM-IV (APA, 1994) Criteria for 'Binge Eating Disorder'

Binge Eating Disorder

- A. Recurrent episodes of binge eating. An episode of binge eating is characterised by both of the following:
 - (i) Eating, in a discrete period of time (e.g. within any two hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and in similar circumstances; and,
 - (ii) A sense of lack of control over eating during the episode (e.g. a feeling that one can't stop eating or control what or how much one is eating).
 - B. The binge eating episodes are associated with at least three of the following:
 - (1) Eating much more rapidly than normal
 - (2) Eating until feeling uncomfortably full
 - (3) Eating large amounts of food when not feeling physically hungry
 - (4) Eating alone because of being embarrassed by how much one is eating
 - (5) Feeling disgusted with ones self, depresses or feeling very guilty after over-eating.
 - C. Marked distress regarding binge eating
 - D. The binge eating occurs, on average, at least two days a week for six months
 - E. The disturbance does not occur exclusively during the course of Anorexia nervosa or Bulimia nervosa.
-

Investigating the thoughts and beliefs of people who are overweight

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with people if you so wish. Please contact me if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part. Thank you for reading this.

1. What is the purpose of the study?

There currently exists a need for research into the factors contributing to increased levels of depression, anxiety, low self-esteem and binge eating in people who seek support for weight management. I am studying for a Doctorate in Clinical Psychology at the University of Leicester and am interested in researching the styles of thinking and the beliefs held by people who are overweight and the effects of these thoughts and beliefs on their eating behaviours and feelings about themselves. It is anticipated that this study will be completed in July 2000 and the findings will be used to inform treatment services for people who want or need to lose weight.

2. Do I have to take part?

It is up to you to decide whether or not to take part. I shall contact you within the next few days to ask if you are interested in taking part and, if so, to arrange a convenient time and place to meet. At this meeting, there will be the opportunity for full information to be given and any questions answered and you will be asked to sign a consent form if you agree to take part. If you do decide to take part, you are still free to withdraw at any time without giving a reason. This will not affect the standard of care you receive.

3. What will be involved if I take part in this study?

If you agree to take part in this study, when we meet, you shall be asked to complete a booklet of questionnaires that ask questions about your eating patterns, your thoughts about food and your feelings about yourself. This takes approximately 50-60 minutes. I shall be available to answer any questions or give additional information if necessary whilst the questionnaires are being completed. We shall only need to meet on one occasion. Any travel expenses shall be fully reimbursed.

4. Would there be any disadvantages to taking part?

No. There are unlikely to be any disadvantages or risks associated with taking part in this study. However, some of the questionnaires can be distressing to some people as they ask about personal thoughts and behaviours. If this is the case, you are under no obligation to complete the questionnaires and are free to contact me at any time to discuss any concerns you may have.

Leicestershire and Rutland Healthcare NHS Trust provide indemnity cover for this study.

5. What are the potential benefits to taking part?

Your participation in this study is anticipated to produce information to be used to help plan future services for people who require support with weight management. Additionally, in the course of completing the questionnaires, you may begin to think about some issues

relating to your own weight. If so, then I would be happy to talk through these with you when we meet. You may also need to discuss these issues with your GP if you feel you would like further support.

6. Will my taking part in this study be confidential?

The information on the questionnaires will be strictly confidential, a number (not your name) will identify you. Your medical records do not need to be inspected as part of this research and no individually identifiable information will be passed on to anyone who is directly involved in your care. However, your GP will need to be informed of your involvement.

7. What will happen to the results of the research study?

On completion, this study forms the research component of a Doctorate in Clinical Psychology. It is also anticipated that the findings and any implications for treatment provision will be published in relevant journals. No participant will be identifiable in any report or publication relating to this study and all participants will be informed where they may obtain a copy of the published results.

8. Who is organising and funding the research?

The principal investigator in this study is a clinical psychologist in training employed by Leicestershire and Rutland NHS Trust. This research forms part of a Doctoral qualification. Neither the investigator nor your dietitian will be paid for your involvement in this research.

9. Who has reviewed the study?

The research protocol has been reviewed by the Research Subcommittee of the Doctoral Course in Clinical Psychology at Leicester University. Dr K. Loumidis, Clinical Lecturer, University of Leicester, is supervising this study.

If you have any further questions or require any additional information, please do not hesitate to contact me at the address below.

Thank you for your time and co-operation!

Caroline Webb (Clinical Psychologist in Training),
Department of Psychology,
Gulson Hospital,
Gulson Road,
Coventry CV1 2HR

Appendix Three: Permission to Release Personal Information For a Research Study

Investigating the thoughts and beliefs of people who are overweight.

- I have been given the participant information sheet about this form
- I would like the principal investigator to contact me so that I can discuss the study in more detail and consider whether or not I should be included in this study.
- I understand that this is not an agreement to take part in this study.
- I understand that I may withdraw from this process at any time without justifying my decision and without affecting my normal care.

I agree that the principal investigator should be given access to;

☐ My name and address

☐ My telephone number if given here **Phone no**

I agree that the researcher will contact me :

☐ By telephone

☐ In writing

(Please mark all responses that apply)

I understand that all the information that the researchers receive in this way will be treated with the usual strict medical and clinical confidentiality.

Participant details:

Surname:

Forenames:

Address:

GP details:

Name:

Practice address:

Signed

Date

Appendix Four: Consent form

PARTICIPANT CONSENT FORM

**Investigating the thoughts and beliefs of people who are
overweight.**

Principal Investigator: Caroline Webb

**This form should be read in conjunction with the Participant Information
Leaflet**

I agree to take part in the above study as described in the Participant Information
Leaflet.

I understand that I may withdraw from the study at any time without justifying my
decision and without affecting my normal care and medical management.

I understand that medical / psychological research is covered for mishaps in the
same way as for patients undergoing treatment in the NHS i.e. compensation is
only available if negligence occurs.

I have read the participant information leaflet on the above study and have had the
opportunity to discuss the details with Caroline Webb, the principal investigator,
and ask any questions. The nature and the purpose of the study has been
explained to me and I understand what will be requires if I take part in the study.

Signature of participant

Date

Name in (block letters)

I confirm I have explained the nature of the trial, as described in the participant
information sheet, in terms which, in my judgement, are suited to the
understanding of the participant.

Signature of Investigator

Date

Name in (block letters)

Appendix Five: Background Information

Investigating the thoughts and beliefs of people who are overweight.

Background Information

Code No. _____

1. Age:yearsmonths
2. Sex: M / F
3. Height: foot Inches
4. Current weight: stonepounds
5. What is your ideal weight? (i.e. the weight you would most like to be, not the weight you think/have been told you should be):

.....
6. Who is currently motivating you to lose weight?:
 - i) Yourself
 - ii) Family / friends
 - iii) GP / medical professional
7. How old were you when you were first overweight (at least 10 pounds as a child or 15 pounds as an adult)?
If you are not sure, what is your best guess?:

..... Years Months
10. a. Have you always been overweight since this time?: Yes / No
b. How many times approximately have you lost 20 pounds or more (when not sick) and then gained it back:
 - i) Never
 - ii) Once or twice
 - iii) 3 or 4 times
 - iv) 5 times or more

Appendix Six: The Other As Shamer Scale (Goss et al, 1994)

OAS Scale

DIRECTIONS: below is a list of statements describing feelings or experiences that you may have from time to time or that are familiar to you because you have had them for a long time. Most of these statements describe feelings and experiences that are generally painful or negative in some way. Some people will seldom or never have many of these feelings. Everyone has had some of these feelings at some time, but if you find that these statements describe the way that you feel a good deal of the time, it can be painful just reading them. Try to be as honest as you can in responding.

Read each statement carefully and circle the number to the left of the item that indicates the frequency with which you find yourself feeling or experiencing what is described in the statement. Use the scale below. DO NOT OMIT ANY ITEM.

Scale:
0=NEVER 1=SELDOM 2= SOMETIMES 3=FREQUENTLY
4=ALMOST ALWAYS

Scale

- | | | |
|-----------|------|---|
| 0 1 2 3 4 | (1) | I feel other people see me as not good enough |
| 0 1 2 3 4 | (2) | I think other people look down on me |
| 0 1 2 3 4 | (3) | Other people put me down a lot |
| 0 1 2 3 4 | (4) | I feel insecure about others opinions of me |
| 0 1 2 3 4 | (5) | Other people see me as not measuring up to them |
| 0 1 2 3 4 | (6) | Other people see me as small and insignificant |
| 0 1 2 3 4 | (7) | Other people see me as somehow defective as a person |
| 0 1 2 3 4 | (8) | People see me as unimportant compared to others |
| 0 1 2 3 4 | (9) | Other people look for my faults |
| 0 1 2 3 4 | (10) | People see me as striving for perfection but being unable to reach my own standards |
| 0 1 2 3 4 | (11) | I think others are unable to see my defects |
| 0 1 2 3 4 | (12) | Others are critical or punishing when I make a mistake |
| 0 1 2 3 4 | (13) | People distance themselves from me when I make a mistake |
| 0 1 2 3 4 | (14) | Other people always remember my mistakes |
| 0 1 2 3 4 | (15) | Others see me as fragile |
| 0 1 2 3 4 | (16) | Others see me as empty and unfulfilled |
| 0 1 2 3 4 | (17) | Others think there is something missing in me |
| 0 1 2 3 4 | (18) | Other people think I have lost control over my body and feelings |

Appendix Seven: Social Comparison Scale (SCS) (Allan & Gilbert, 1995)

Social Comparison Rating Scale

Please place a mark on each line at a point which best describes the way in which you see yourself in comparison to others.

Example:

Short 1 2 3 4 5 6 7 8 9 10 Tall

If you put a mark at 3 this means you see yourself as shorter than others; if you put a mark at 5 (middle), you see yourself as about average height; and if you place a mark at 7, you see yourself as somewhat taller than others.

If you understand the above instructions please proceed. Circle one number on each line according to how you see yourself in relationship to others.

In relationship to others I feel:

Inferior	1	2	3	4	5	6	7	8	9	10	Superior
Incompetent	1	2	3	4	5	6	7	8	9	10	More competent
Unlikeable	1	2	3	4	5	6	7	8	9	10	More likeable
Left out	1	2	3	4	5	6	7	8	9	10	Accepted
Different	1	2	3	4	5	6	7	8	9	10	Same
Untalented	1	2	3	4	5	6	7	8	9	10	More talented
Weaker	1	2	3	4	5	6	7	8	9	10	Stronger
Unconfident	1	2	3	4	5	6	7	8	9	10	More confident
Undesirable	1	2	3	4	5	6	7	8	9	10	More desirable
Unattractive	1	2	3	4	5	6	7	8	9	10	More attractive
An outsider	1	2	3	4	5	6	7	8	9	10	An insider

Appendix Eight: The Submissive Behaviour Scale (SBS) (Gilbert & Allan, 1994)

The Submissive Behaviour Scale

Below are a series of statements that describe how people act and feel about social situations. Circle the number to the left of the statements which best describes the degree to which a statement is true for you.

Please use the following scale:

0 = NEVER 1 = RARELY 2 = SOMETIMES 3 = MOSTLY 4 = ALWAYS

- | | | | | | |
|---|---|---|---|---|---|
| 1. I agree that I am wrong even though I know that I am not | 0 | 1 | 2 | 3 | 4 |
| 2. I do things because other people are doing them rather than because I want to | 0 | 1 | 2 | 3 | 4 |
| 3. I would walk out of a shop without questioning, knowing I had been short changed | 0 | 1 | 2 | 3 | 4 |
| 4. I let others criticise me or put me down without defending myself | 0 | 1 | 2 | 3 | 4 |
| 5. I do what is expected of me even when I don't want to | 0 | 1 | 2 | 3 | 4 |
| 6. If I try to speak and others continue, I shut up | 0 | 1 | 2 | 3 | 4 |
| 7. I continue to apologise for minor mistakes | 0 | 1 | 2 | 3 | 4 |
| 8. I listen quietly if people in authority say unpleasant things about me | 0 | 1 | 2 | 3 | 4 |
| 9. I am not able to tell my friends when I am angry with them | 0 | 1 | 2 | 3 | 4 |
| 10. At meetings and gatherings, I let others monopolize the conversation | 0 | 1 | 2 | 3 | 4 |
| 11. I don't like people to look straight at me when they are talking | 0 | 1 | 2 | 3 | 4 |
| 12. I say 'thank you' enthusiastically and repeatedly when someone does a small favour for me | 0 | 1 | 2 | 3 | 4 |
| 13. I avoid direct eye contact | 0 | 1 | 2 | 3 | 4 |
| 14. I avoid starting conversations at social gatherings | 0 | 1 | 2 | 3 | 4 |
| 15. I blush when people stare at me | 0 | 1 | 2 | 3 | 4 |
| 16. I pretend I am ill when declining an invitation | 0 | 1 | 2 | 3 | 4 |