Self-esteem, Victimisation and Perception of Peer Relationships in Obese Children and Adolescents

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The candidate confirms that the work submitted is her own and that appropriate credit has been given where reference has been made to the work of others

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ABSTRACT

Obesity in childhood has been associated with psychosocial problems including low self-esteem and body dissatisfaction. Obese children and adolescents are vulnerable to overweight-related victimisation. This too has psychological consequences. This study examined the prevalence of overweight-related victimisation in obese children and adolescents who attended a residential activity-based weight loss camp. The association between obesity and overweight-related teasing to self-esteem, body dissatisfaction and social relationships were considered. In addition, the impact of the camp on these psychological variables was investigated.

Height, weight, self-esteem, victimisation, body dissatisfaction and social relationships were assessed for 109 participants at the start and end of camp. Data were also collected from 68 non-obese comparison children. Obese campers were significantly lower in the self-concept domains of social acceptance, physical appearance, athletic ability and global self-esteem. They showed greater body dissatisfaction. Social relationships were poorer for obese males than non-obese males, and the obese children and adolescents percieved themselves to be less popular than non-obese rated themselves. 40% of obese girls and 50% of obese boys reported overweight-related victimisation, compared with 9% of non-obese males and 4% of non-obese females. Overweight-related victimisation was associated with lower ratings of social acceptance, athletic competence and global self-esteem. It was not associated with increased body dissatisfaction.

Camp attendance was associated with weight loss, improvements in global self-worth, physical appearance and athletic self-competence, and decreases in body dissatisfaction. Improvements were also seen in perception of their popularity.

The results demonstrate the high prevalence and negative impact of overweight-related victimisation in obese children. Difficulties in social relationships of obese children and adolescents are highlighted. Psychological benefits of the weight-loss camp were demonstrated. Further research is required to investigate vulnerability and protective factors for overweight-related teasing.

LITERATURE REVIEW

Introduction

The following literature review starts by considering the psychosocial consequences of obesity, with particular emphasis on self-esteem. Within this is a discussion of some of the theories relevant to consideration of self-esteem of obese children and adolescents. The review then looks at the existing literature regarding self-esteem in obese children and adolescents. The review will then go on to explore the impact of obesity stigmatisation on the social functioning of obese children and adolescents. The impact of victimisation on psychological health is considered, following by a review of the existing literature regarding overweight related victimisation. Other aspects of social functioning are then considered, specifically popularity and friendship. Research regarding the social functioning of obese children and adolescents is reviewed. The impact of weight management programmes on psychological functioning is reviewed. Finally the aims and hypothesis of the current study are presented.

Obesity in Children and Adolescents.

The prevalence of obesity[1] is rising. In 1998 the World Health Organization designated obesity as a global epidemic (World Health Organisation, 1998). Recent research in the UK suggests nearly two-thirds of men and just over half of women are either overweight or obese, which is nearly 3 times greater than the number in 1980 (Bourn, 2001). Prevalence amongst children is also increasing (Reilly and Dorosty, 1999; Reilly, Dorosty, and Emmett, 1999; Rudolf, Sahota, Barth, and Walker, 2001). Obesity in childhood can lead to a number of consequences, both physical and psychological (Must and Strauss, 1999). Childhood obesity is linked to a range of medical conditions, including hyperlipidemia, hypertension and abnormal

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[1] Obesity is an excess of body fat. There is no generally agreed definition of childhood obesity but widely favoured indicators are based on percentiles of UK reference curves: 85th centile for overweight, 95th centile for obesity. These definitions are used in this study.

glucose tolerance ((Dietz, 1998), and there are an increasing amount of obese children at risk of developing Type II diabetes and/or cardiovascular disease (Sabin, Crowne, and Shield, 2004).

Psychological consequences of overweight

Psychosocial problems which have been linked to obesity in childhood and adolescence include poor self-image, social isolation, aggression, suicide, promiscuity, drug/alcohol problems, bulimia, and binge eating (i.e. Britz et al., 2000; Kiess et al., 2001). A systematic review of the consequences of child obesity found that obese children were more likely to experience psychological or psychiatric problems than the non-obese (Reilly, Methven, McDowell, and Hacking, 2003). Girls were at greater risk than boys of psychological morbidity, and risk increased with age. Low self-esteem and behavioural problems were particularly common.

Whilst physiological sequelae of obesity may take some years to develop, the psychological and social impact is immediate. Thus it is important to consider the psycholosocial consequences of obesity on children and adolescents.

The current research investigates the self-concept and social relationships of obese children and adolescents, thus it is these areas on which the review of the literature will focus. This will start with an overview of some of the relevant theoretical models driving self-esteem research and a review of the existing literature of the association of self-esteem and obesity.

Self-concept and self-esteem

Children construct an identity and concept of themselves when growing up. Overweight and obese children develop a sense of self and cope with the consequences of their body status within an environment where cultural and societal attitudes value thinness (Edmunds, 2002). This can lead to negative psychological consequences such as low self-esteem.

The popular definition of self-esteem is how much a person likes, accepts, and respects themselves overall as a person. The term self-esteem tends to be used to describe one's global self-concept, an overall sense and evaluation of ourselves. (Harter, 1993) described self-esteem as the level of global regard one has for the self as a person. The term self-concept is primarily used for self-evaluations in different domains as described below.

Self-concept is multi-dimensional, incorporating different domains which develop as a result of ongoing interaction between a child and their social environment. The number of domains which can be differentiated increases across development through early, middle and late childhood, adolescence and adulthood. A hierarchical model has been proposed whereby global self-concept or self-esteem is at the apex and particular domains and subdomains are nested underneath (Harter, 1996). One such model was proposed by Shavelson et al (1976), who identified two broad classes; academic and non-academic. Non-academic self-concept includes social, emotional and physical. Physical self-concept is further sub-divided into physical appearance and physical ability. Academic self-concept is divided into specific school subjects.

Intercorrelations have been reported for different domains of self-concept. For example, the social self-concept and physical self-concept, which measures perceived athletic ability, have been found to be correlated (Bracken, 1996). General self-esteem was most strongly correlated with self perceptions of physical appearance (Harter, 1993). Physical appearance is very important in adolescence, even more so in girls than boys. Children and adolescents who feel they are good-looking and feel happy about their physical appearance are also likely to have high general self-esteem. Girls tend to have lower physical self-esteem than boys.

Certain domains may be considered more important to the individual's overall self-concept than others. James' (1890) theoretical model argued that an individual's sense of global self-esteem may be best explained in terms of perceived successes in those domains to which they attach the most importance. Research with community

samples of older children, adolescents and adults has supported this theory (Harter, 1993). This idea has been used in explaining depression. The social-cognitive theory of depression proposes that individuals who overvalue a single goal or domain, whilst simultaneously undervaluing other domains, are more vulnerable to depression as they lack alternative goals within other domains to which they could turn their attention in the event of failure (Champion and Power, 1995).

Cooley (1902) offered an alternative theoretical explanation of self-esteem. He suggested that self-esteem is a social construction. Social support, in the form of positive regard for others, is the critical determinant of self-esteem. Thus, approval or disapproval from others is incorporated into one's self-esteem. Research with community samples of adolescents has provided support for this theory (Harter, 1990). This demonstrated that those children who reported most support from significant others had highest self-esteem, whilst those reporting lowest support had lowest self-esteem. In older children and adolescents, perceived classmate and parent approval are the best predictors (Harter, 1993).

Harter (1993) suggests that James' and Cooley's theoretical formulations taken together provide an explanation for the level of self-esteem displayed by older children and adolescents. Thus, at each level of self-esteem, greater competence in domains of importance leads to higher self-esteem. Also, at each level of competence in domains of importance, the more support from classmates and parents, the higher the self-esteem. Whilst this theoretical model has been supported by research on community samples, it has not been investigated in a clinical sample of obese children and adolescents. The current research aimed to fill this gap in the literature by exploring the social functioning of obese children and adolescents attending a residential weight loss camp.

A further explanation of the nature of self-esteem is offered by the sociometer theory of self-esteem (Leary and Baumeister, 2000). This suggests that self-esteem is a psychological gauge that monitors the quality of people's relationships with others. It assumes that humans possess a drive to maintain significant interpersonal

relationships. The 'sociometer' continuously monitors the social environment for cues about the degree to which other people accept or reject them. Thus, self-esteem is lowered by failure, criticism or rejection and is raised by success, praise and events which are associated with positive relationships. Research shows that people who are characteristically low in self-esteem approach their interpersonal relationships differently, and do not do as well in their social lives (Leary, 2002). People with low self-esteem tend to worry more about interpersonal relationships, feel less accepted and are more concerned about people judging them negatively. Thus, Leary suggests that low self-esteem may not emerge from unfavourable self-evaluation but from people's concerns about being valued and accepted by others. There is evidence to support the view that acceptance and rejection by others is instrumental for feelings of self-esteem (Leary and Baumeister, 2000). Leary also draws upon James' suggestions regarding the importance of domains, suggesting that self-esteem is most strongly influenced by acceptance or rejection of others in domains that one considers important. For example, if someone places much importance on physical attractiveness and feels that others do not find them attractive, this will have the effect of lowering self-esteem (MacDonald, Saltzman, and Leary, 2003)

This theory is particularly pertinent to a discussion of self-esteem in people who are obese. If they do not feel valued or accepted by others, perhaps as a result of the stigmatisation of obesity which is discussed later, this may lead to lower self-esteem. However most research supporting the theory has used community samples, often university students, with little done on specific populations i.e. obese children and adolescents presenting for weight loss treatment.

Self-esteem in obese children and young people.

The next section reviews the existing literature on self-esteem of obese children and adolescents. Research looking at the relationship between self-esteem and obesity in children has produced equivocal results. Some studies have reported decreased self-esteem in obese children (e.g. Strauss, 2000) whilst others have reported normal

levels (e.g. (Wadden, Foster, Brownell, and Finley, 1984). The inconsistency of the results may be due to small sample sizes, varying definitions of obesity and overweight and inconsistencies in self-esteem assessment (Hill, 2003). Differences have also been noted in age. A review of 35 studies on the relationship between overweight and self-esteem found that obese adolescents aged 13 to 18 years had lower self-esteem than non-obese, but found no differences in children aged 7 to 12 years (French, Story, and Perry, 1995).

Some researchers have attempted to explain the discrepancies by investigating whether obese children and adolescents use certain coping mechanisms to maintain self-esteem. Manus and Killen (1995) proposed that obese children engage in discounting and cognitive distortion to minimise the psychosocial impact of obesity and thereby maintain self-esteem. They suggested that obese children may view physical appearance as less important than other domains in which they do well, such as scholastic competence. This allows them to maintain a positive image. An alternative suggestion is that overweight children may maintain self-esteem by blaming an external cause rather than themselves for their excess weight (Pierce and Wardle, 1997).

Miller and Downey (1999) conducted a meta-analysis of publications which included a global measure of self-esteem and the relevant statistics for testing the relationship between overweight or obesity and self-esteem. The results indicated a robust small to moderate size relationship between overweight and self-esteem. The small effect sizes may reflect that these are global measures of self-esteem. The association between self-esteem and obesity was found to be stronger in females than males; in adults than adolescents, and adolescents than children, and in individuals with high socio-economic status compared with those from lower socio-economic status.

Studies based on the theories proposed by James and Harter, which have looked at specific domains of self-esteem show more clear differences. For example, Phillips and Hill (1998) reported that obese 9-year old girls scored significantly lower on

physical appearance and athletic competence than their normal weight peers. A similar pattern was found in 12-year-olds (Murphy, 1999), with obese children reporting lower global self-esteem, athletic competence and physical appearance esteem. However they did not show a difference in importance attributed to each domain. Thus, they did not appear to diminish the importance of success in domains in which they performed poorly. This had previously been proposed as a coping mechanism which obese children may use to maintain self-esteem (Manus and Killen, 1995).

Walker et al (2003) found obese children and adolescents aged 10 years to 18 years had lower global self-esteem, scholastic competence, athletic competence, physical appearance esteem and behavioural conduct esteem compared with non-obese children and adolescents. No significant difference was found in their social competence. Physical appearance esteem was particularly low, and appearance related worries were more frequent and intense than in non-obese children and adolescents.

Israel and Ivanova (2002) found no gender differences in social and academic competence in overweight children and adolescents, which was inconsistent with data from the pattern seen in the general population, where boys tend to have more positive academic competence and girls tend to have more positive social competence. They went on to suggest that overweight children view their self-competencies differently to non-overweight children, in a way that is protective of their self-esteem.

Thus the existing research suggests that many obese children and adolescents have lower self-esteem in certain domains than normal weight children and adolescents. As not all obese children and adolescents demonstrate low self-esteem, further research is required into moderating factors. Following Harters model of self-esteem (Harter, 1993) and the sociometer theory of self-esteem (Leary 2000), both of which emphasise the importance of significant others, including peers, on self-esteem. it is proposed that the self-esteem of obese children and adolescents will be

affected by their social relationships, their perception of their popularity and how accepted they are. The current research explores the social functioning of obese children and adolescents attending a weight loss camp. The review will go on to look at the impact of victimisation and other aspects of social relationships on children's psychological health. First, the review will explore a possible reason why obese children and adolescents may have difficulties in social relationships, a result of the stigma associated with being obese (Puhl and Brownell, 2003).

Stigmatisation of Obesity

A stigmatised individual is someone who is a member of social groups about which others hold negative attitudes, stereotypes, and beliefs (i.e. Goffman, 1963). The process of stigmatization means that certain individuals are excluded from particular sorts of social interactions because they possess a particular characteristic or are a member of a particular group. One such group is obese people. Some theorists (i.e. Frable, 1993) suggest that one of the dimensions of stigma which is particularly influential is visibility/concealability. The more visible a stigmatizing condition, the greater its impact on interactions. Obesity is a condition which is clearly visible and thus obese people may be particularly susceptible to stigmatisation.

Stigmatisation can decrease quality of life and cause psychological distress. An understanding of stigmatisation of obesity is important in considering the social and psychological consequences of obesity. Unlike racial stigmatisation, prejudicial attitudes towards obesity are often freely expressed on the grounds that weight is controllable and thus overt hostility is more likely. The attribution framework of stigmatisation suggests that people attempt to determine the causes of obesity, and this in turn forms their reactions to obesity. A general belief underpinning stigmatisation of obesity in western society that serves to maintain negative attitudes is that if the person exerted enough discipline, body shape can be shaped and molded as desired, and excess weight reflects a personal failing. If adults (DeJong, 1993) or children (Bell and Morgan, 2000) are given a medical explanation for a peers

obesity, they are seen to be less responsible for the condition, though this has minimal positive effect on children's attitudes towards their obese peers.

Discrimination has been reported against obese people in employment, healthcare, education, and access to services (Puhl and Brownell, 2001). Negative stereotypes include; obese people are ugly, lazy, morally impaired, asexual, weakwilled and unlikable. Obese people are just as likely to hold these attitudes as non-obese (Crandall and Biernat, 1990).

Children also hold stereotypes about overweight and obesity. An early study by Richardson, Goodman, Hastorf, and Durnbusch (1961) asked children to rank six pictures of children, with various physical characteristics and disabilities, in order of whom they would most like as a friend. The majority of children ranked the obese child last. A recent study replicated this and found that prejudice had increased against obese children compared with forty years earlier (Latner and Stunkard, 2003). Girls liked obese children less than boys did. Hill and Silver (1995) found that overweight body shape silhouettes were judged by children to have fewer friends, to do less well at school and be less content with their appearance. The severity of obesity stigma is indicated by the young age at which negative attitudes are seen. Cramer and Steinwert (1998) demonstrated that children as young as 3 years old judge an overweight child to be 'more mean' and a less desirable playmate than an average weight child.

It has been proposed that stigma should be understood in terms of relationships, since it refers to a process of social rejection, devaluation or discrimination (i.e. Goffman, 1963). According to Cooley's (1902) idea's about the 'looking glass self' we come to view ourselves from the standpoint of the community and its values, and come to see ourselves as others do. It is proposed that as a result of this, possession of a stigmatized attribute, such as obesity, is likely to have negative effects on self-evaluation.

More frequent exposure to stigmatising situations has been found to be associated with greater psychological distress in obese adults, including more negative body

image and more negative self-esteem (Myers and Rosen, 1999). Analysis suggested that this was not merely a function of weight but related directly to reported levels of stigmatisation.

The issue of stigma is particularly relevant during childhood and adolescence, as this is a time when the formation of social relationships is particularly important. As a result of this stigmatisation, and as previously mentioned prejudiced views are often freely expressed, it is proposed that obese children are more likely to experience victimisation and bullying. The next section will discuss the literature on teasing, victimisation and bullying in general, before going on to look more specifically at overweight-related teasing, victimisation and bullying.

Teasing and victimisation

Teasing is a difficult concept to define as it is often ambiguous, it depends on the intent of the communicator and the interpretation of the recipient. It has been described as consisting of three components, aggression, humour and ambiguity (Shapiro, Baumister, and Kessler, 1991). Thus teasing is an aggressive verbalisation, which if taken literally could be hurtful but is usually accompanied by verbal and non-verbal cues which mean it is not taken literally. Childhood teasing is often more hurtful than adult teasing as it contains less humour and is more likely to be taunting, verbal abuse and insults. Shapiro et al. (1991) identified the most common topics for teasing were physical appearance and intellectual performance.

Bullying is defined as unprovoked negative actions being directed at a person or groups of people over time. Negative actions can include physical aggression or indirect/relational aggression. In physical victimisation, physical damage or physical intimidation is used as the vehicle of harm. Relational victimisation describes acts that cause or threaten to cause damage to peer relations, particularly to friendship and acceptance. Research suggests that physical victimisation is seen

mostly in boys, and relational victimisation is seen mostly in girls (e.g. Crick, 1995; Crick and Nelson, 2002).

A meta-analytical review of victimisation and psychosocial adjustment suggested that those who are victims of peer aggression experience more negative effects and negative thoughts about themselves than non-victims (Hawker and Boulton, 2000). The largest effect sizes were found for loneliness and depression, but it was also related to global self-esteem, social self-concept, generalised anxiety and social anxiety.

Victims are likely to be sociometrically rejected, socially ineffective, generally unpopular with peers, anxious, insecure and lacking in self-confidence (Neary and Joseph, 1994). Boulton and Smith (1995) found that victims of teasing scored significantly lower on scores of athletic competence, social acceptance and global self-esteem.

Whilst there has been much research on the impact of victimisation in general, there has been relatively little research on victimisation of obese children. Pearce, Boergers, and Prinstein (2002) found that obese adolescents reported experiencing more victimisation than their non-obese peers. Obese boys reported more overt victimisation (teasing, punching, hitting, kicking etc). Obese girls reported more relational victimisation (peers refusing to spend time with them, not talking to them, not sitting with them in class).

As discussed earlier, the stigma attached to obesity means that obese children and adolescents may be particularly susceptible to abuse regarding their weight. The next section looks at the effects of teasing and victimisation that is specifically targeted at excess weight.

Weight-related teasing and victimisation

Adolescence is a period of exploratory self-analysis and self-evaluation. with identity formation being a major task at this time (Erikson, 1968). Erikson proposed a widely recognised theoretical framework for conceptualizing identity formation during adolescence. It is generally believed that with adolescence comes a greater interest and concern about interpersonal relationships, especially with peers. Research has demonstrate that peer relationships do have a significant role in the development of an integrated sense of self during adolescence (Meeus, Oosterwegel, and Vollerbergh, 2002). It is therefore proposed that at this age adolescents may be particularly sensitive to weight-related victimisation as their identity formation is influenced by peer relationships and identification with social groups. If they feel stigmatised, as a result of weight-related victimisation this is likely to impact on psychological health.

Research is increasingly looking at teasing as a factor in the development of disordered eating and weight concern and indicates that adolescent girls who are teased about their weight are more likely to display psychological, body image and/or weight disturbances. Several studies have identified weight-related teasing as a risk factor for body dissatisfaction and disordered eating in adolescents and adults (Grilo, Wilfrey, Brownell, and Rodin, 1994; Jackson, Grilo, and Masheb, 2000; Lunner et al., 2000; Neumark-Sztainer et al., 2002; Thompson, Coovert, Richards, Johnson, and Cattarin, 1995), although some studies have found no relationship (Stice and Whitenton, 2000).

Fabian and Thompson (1989) found that both teasing frequency and effect were significantly associated with body dissatisfaction, eating disturbances and depression. In a clinical sample of obese females, the frequency of being teased about one's weight and shape whilst growing up was associated with the degree of body image concerns in adulthood (Grilo et al., 1994). Females with early onset obesity were characterised by greater body dissatisfaction than adult onset. They found that a history of being teased was not related to self-esteem in the overall sample of obese adults. However, when they compared those with child onset

obesity with those with adult onset obesity, teasing history was associated with low self-esteem in those with child-onset obesity. This demonstrates the impact of being obese during the critical period of childhood and adolescence on psychological well being.

Schwartz, Phares, Tantleff-Dunn, and Thompson (1999) demonstrated that parent's teasing about weight whilst growing up predicted young women's self-esteem. Myers and Rosen (1999) concluded that obesity stigmatisation is a frequent and distressing experience, becoming more frequent with increasing size. They found that stigmatisation was associated with psychological adjustment, and negative body image. Peer teasing and parent criticism were investigated as a potential mediator of the relationship between girl's weight status and self-concept (Davison and Birch, 2002). Girls with higher BMI reported lower self-concept at both age 5 and 7 years. Peer related teasing was consistently associated with lower body esteem, but not with any other domain of self-concept. At 5 years old, no association was found between parent weight-related criticism and self-concept. At age 7 years it was associated with lower perceived peer acceptance, physical and cognitive ability and marginally lower body esteem. Thus parental criticism seemed to have an impact on a broader range of self-concept domains than peer teasing. The authors concluded that at age 7 years, peer teasing and parent criticism mediated the relationship between girls weight status and self-concept. This was not the case at age 5 years. The research did not look at any older age groups, when the peer group becomes increasingly important.

Neumark-Sztainer et al. (2002) assessed the prevalence of perceived weight-teasing and associations with unhealthy weight control behaviours and binge eating in a large sample of adolescents, looking particularly at overweight young people (mean age 14.9 years). Overweight young people reported higher levels of weight-related teasing than average weight, and there were slightly more girls than boys who reported experiencing teasing 'at some point'. Girls reported being more bothered by the teasing than boys. Obese adolescents were most likely to be teased. 62.3% of obese girls reported being teased by their peers and 47.2% by family members.

58.3% of obese boys reported being teased by their peers, 34% by family members. Reported weight-related teasing was significantly associated with disordered eating behaviour in both overweight and non-overweight youths. This may put them at risk for further weight gain.

Weight-related teasing was the only significant contributor to global self-worth and appearance self-esteem in a sample of African-American children aged 5 to 10 years (Young-Hyman, Schlundt, Herman-Wenderoth, and Bozylinski, 2003). Larger children reported more peer teasing and less social acceptance. The authors suggested that the children did not perceive excess weight as a negative personal characteristic in itself, psychosocial problems instead appeared to be related to being teased.

In a large sample of adolescents in the U.S., which included 14.6% classified as obese and 17.3% classified as overweight weight-related teasing was found to be commonplace (Eisenberg, Neumark-Sztainer, and Story, 2003), with 30% of girls and 24.7% of boys reporting being teased by peers and 28.7% of girls and 16.1% of boys being teased by someone in their family. Those who reported being teased by either peers or family members reported more emotional problems, including low self-esteem, body dissatisfaction, high depressive symptomology, suicidal ideation and suicide attempts. The findings did not specifically indicate percentage of overweight or obese adolescents who were or were not teased. Weight-related teasing was found to be associated with poor emotional health across all weight categories, and therefore they suggested that it was being teased about weight, not shape per se, that was the relevant factor for more emotional problems.

Murphy (1999) looked at fat-teasing in 12 year old children using questionnaire items inserted into Harter's Self-Perception Profile for Children. In this, 12% of girls and 16% of boys described themselves as being teased or bullied for being overweight. Victimised children were heavier than non-victimised but less than half were either overweight or obese. Fat-teased girls and boys had significantly lower global self-worth and lower perceived competence in all domains except behavioural

competence. This was still the case when weight was added as a co-variate, showing the impact of victimisation rather than weight. In a similar study looking at the impact of weight-related victimisation on 9 year-olds, 21% of girls and 16% of boys reported weight-related victimisation, which was associated with lower self-esteem and greater levels of body dissatisfaction, even when controlling for weight (Waterson, 2001). In particular, physical appearance esteem and social acceptance esteem were reduced. They also reported that overweight-related victimisation was more upsetting than general victimisation.

Weight-related teasing or criticism during physical activity has been linked with negative attitudes to sport, less enjoyment of sport and reduced levels of physical activity (Faith, Leone, Ayers, Moonseong, and Pietrobelli, 2002). The direction of the link is unclear, whether criticism puts children off attempting physical activity, or whether children who are more inept at sports are more likely to be criticised. Conversely, general weight criticism was found to be related to greater enjoyment of sports, increased overall activity and mild intensity physical activity. The authors suggested that the criticism may potentially provide a motivating effect for the child to lose weight, and therefore increase physical activity.

Thus, the issue of teasing and bullying is an important one in children and adolescents who are obese or overweight. Weight-related teasing seems particularly important given its association with low self-concept, depression and disordered eating. The current study therefore proposed to investigate the level of teasing encountered by, and initiated by, young people entering the camp, and the impact of this on the young people. Much of the previous research has used either community samples or retrospective reports of obese adults. The current research addresses the gap in the literature by exploring the victimisation experiences of obese children and adolescents who present for weight loss treatment.

Social Relationships

This study aimed to expand on the previous reports on the effects of weight loss treatment by looking at young people's perceived acceptance amongst peers. As Pearce et al (2002) suggest, adolescence is a crucial time to investigate peer relationships, as adolescents are particularly reliant on peers for social support, identity and self-esteem. It is a time when body image is more salient and therefore more strongly related to peer popularity. Thus, if appearance is different (i.e. they are obese), this may make them particularly vulnerable to victimisation by peers. The following section discusses the existing research on social relationships of children and adolescents, focussing particularly on friendships and popularity.

In considering social relationships, an understanding of the social self-concept is useful.

William James (1890) stated that:

"A man's *social self* is the recognition he gets from his mates. We are not only gregarious animals, liking to be in sight of our fellows, but we have an innate propensity to get ourselves noticed, and noticed favourably, by our kind"

According to Cooley (1902) the attributions you make of yourself are a function of your perception of the attributions others make of you, termed as 'the looking glass self'. Following this, children and adolescents of high weight are predicted to experience low self-concept as a result of negative reactions of others.

As referred to above, some theorists describe social self-concept as people's perceptions of how much other people like and admire them; their self-perception of social acceptance. This has been supported by a number of studies which have compared social self-concept and actual social acceptance (Boivin, Vitaro, and Gagnon, 1992; Cornell et al., 1990). Others define social self-concept by people's perception of their social competence or social skills (i.e. Fitts, 1965). These definitions overlap; those who perceive themselves as more accepted by others are

likely to perceive themselves as socially skilled. Children's social self-concepts are affected by the reactions of other people, the extent to which they are accepted or approached in positive ways and their ability to achieve goals and objectives through successful social interactions (Cooley 1902).

A problem with much of the research of social acceptance is the reference group used. Most use classmates as the defined reference group. However, children do have friendships outside of the classroom. Also, they have different relationships with same-sex and different-sex peers which has not often been accounted for in research.

The nature of children's interpersonal relationships change with age (Bracken and Crain, 1994). Children's social relationships when young focus primarily on their family. As they grow older their social network expands to include their peers. Relationships with parents tend to deteriorate with increasing age. Same gender relationships tend to remain fairly positive and stable over the 9 – 19 years age range. Opposite sex relationships become increasingly important with age. The current research looks at all peer relationships, not just those with classmates, and considers relationships with each sex individually.

The development and maintenance of positive peer relationships is an important social task for all individuals. It is well established that interpersonal relationships are related to and influence a child's functioning in many different contexts (Bracken and Newman, 1994). Adolescents' social relationships have a strong impact on their emotional and social development, and emotional health (Parker and Asher, 1987). Peer acceptance plays an important role in the development of children's self-concepts and social skills.

There are two ways in which peers can affect children's development. Acceptance or rejection within the peer group affects development, as does mutual, dyadic friendships (Hartup, 1996). There is an important distinction between being popular (i.e. being liked or accepted by peers) and friendships (i.e. the experience of close, mutual, dyadic friendships) (Bukowski and Hoza, 1989). Investigation of the social

relationships of children attending a summer camp found that peer acceptance before camp predicted peer acceptance, though not friendship quality, at camp (Hanna, 1998). Physical attractiveness was a stronger predictor of positive friendships and peer acceptance than sociability. Behaviours necessary for peer acceptance in a new peer group differed from those necessary for positive friendships, though attractiveness was important to both.

The correlation between peer support (in terms of classmate approval) and global self-esteem increases with development, and by early adolescence it is as important as parental support and approval (Harter, 1990). It has been consistently found that approval in the 'public domain' (classmates, peers) is more predictive of self-esteem than having close friends (Harter, 1993). Different types of support have been identified. 'Approval' is how much others like an individual as a person. 'Emotional support' is how much others understand and care about one's friendships. 'Instrumental support' is how much others instruct, teach or guide one in developmental tasks or problems. Research indicates that approval support is most highly related to self-esteem, followed by emotional support, with instrumental support being the least related (see Harter, 1996).

Friendships

Friendships facilitate social and emotional development during adolescence. Research suggests that children with more supportive friendships report fewer internalising or externalising behavioural problems following aversive peer experiences (Boivin, Hymel, and Hodges, 2001; Vernberg, 1990). Girls tend to report more social support in their friendships than boys (Champion, Vernberg, and Shipman, 2003).

Correlational studies suggest that children who have more friends are more socially competent than those who do not have friends, although direction of causality is difficult to establish. The research literature tends to suggest a distinct pattern of characteristics related to being friendless. These include displaying less adaptive social competencies and social skills when interacting with peers, being less likely to

show altruism and trust towards peers and less mature conception of friendship relations. They are more likely to be perceived negatively both by themselves and others (Newcombe and Bagwell, 1996).

Some research suggests that in early adolescence, having friendships with more positive features (i.e. prosocial behaviour, self-esteem support, intimacy, loyalty, etc.) is associated with greater involvement in school, higher perceived social acceptance and higher general self-esteem (Berndt and Keefe, 1995); (Keefe and Berndt, 1996). Other research has found no relationship between friendship quality and self-esteem (Berndt and Keefe, 1995). Berndt (2002) suggests that friendships high in positive features affects the child's success with peers. Thus good friendships improve children's views of classmates and classmates view of them.

Popularity and peer acceptance

There is some discussion in the literature about what 'popularity' is and how it is best measured. Sociometric popularity is typically measured by sociometric measurement asking children to nominate other children that they personally like and want to have as friends. These are not necessarily those who are seen as the most popular within the group. Perceived popularity is assessed by asking children to directly identify the most 'popular' in their class. This is an index of social reputation and impact rather than how well-liked a child is (Cillessen and Mayeux, 2004). Often children perceived as popular by their peers do not maintain good close personal relationships. Parkhurst and Hopmeyer (1998) and Babad (2001) concluded that sociometric popularity and peer perceived popularity are distinct dimensions of peer status. Those classified as perceived popular tend to be athletic and cool, but also dominant, arrogant and physically and relationally aggressive (Cillessen and Mayeux, 2004; LaFontana and Cillessen, 2002; Parkhurst and Hopmeyer, 1998). Children classified as sociometrically popular have been described as having better social skills, have more positive self-esteem, report less loneliness and have lower incidence of conduct problems, substance abuse and anxiety (Jackson and Bracken, 1998). They tend to be kind, trustworthy, co-

operative and sociable. Children view popularity as one's position in the social hierarchy. It may be that along with prosocial behaviour and social skills, a certain amount of anti-social behaviour is necessary to maintain the position in the social hierarchy. It has also been reported that popular children tend to be more physically attractive than less popular children (Kennedy, 1990).

Children's perceptions of what makes other children popular or unpopular were investigated by LaFontana and Cillessen (2002). Perceived popularity was associated with attractiveness, athletic ability and other talents and frequent interactions, whereas unpopular children were seen as unattractive, isolated and lacking talent or competencies, and not dressing or acting in ways which allowed them to fit in. Athletic ability was particularly important for boys. Children and adolescents who have more athletic competence tend to be more well accepted by peers than those with low athletic competence (Johnstone, Frame, and Bouman, 1992). These findings have implications for obese young people, who are often perceived as unattractive and are likely to have poor athletic ability.

Social Relationships of Obese Children and Adolescents

Given the importance placed on peer appearance norms, body image, physical fitness, and the stigma attached to being obese, it is hypothesised that being obese will have implications for social development and well-being in children and adolescents. However, relatively little research has looked at social relationships of obese children and adolescents. There is some evidence that obese adolescents are at greater risk for victimisation and mistreatment by peers and may have fewer opportunities to develop intimate romantic relationships; this may contribute to the psychological and health difficulties frequently associated with obesity (Pearce, Boergers, and Prinstein, 2002). Pearce et al (2002) found that obese boys reported more overt victimisation (i.e. aggression) and obese girls reported more relational victimisation compared with their average-weight peers. This suggested that obese girls were more likely to experience victimisation within their friendships than to be teased. Victimisation within close friendships was hypothesised to cause obese girls

to have an unstable sense of security in relationships and be deprived of the social support usually received from friendships. Both obese boys and girls reported being more dissatisfied with their dating status compared with average-weight peers. though only obese females reported dating less than their normal-weight peers.

Falkner and colleagues found that obese girls, when compared with their average weight counterparts, were less likely to report hanging out with friends in the previous week, more likely to report serious emotional problems in the previous year, and more likely to report hopelessness. Obese boys were also less likely to hang out with friends in the previous week and were more likely to feel that their friends did not care about them (Falkner et al., 2001).

Strauss and Pollack (2003), in a study involving over 17000 high school students, investigated the social networks of overweight adolescents, using a number of social network measures. These indicated that overweight adolescents were more isolated and peripheral to social networks than normal weight peers. Friends of overweight adolescents tended to be more unpopular themselves. Other chronic medical conditions, such as asthma, migraine, headaches and chronic abdominal pain, were not associated with decreased friendship nomination.

Not all research found obesity to be related to poorer social relations. Phillips and Hill (1998) looked at peer ratings of popularity in pre-adolescent girls. Obese and overweight girls were perceived as less attractive by their peers, but not less popular. Walker et al (2003) found that obese children and adolescents did not differ in their social acceptance esteem from normal weight children and adolescents.

Thus, it is unclear as to whether being obese does affect social relationships. Except for Walker et al (2003) all the studies used community samples collected from schools, not clinical samples of obese children and adolescents. This study will look at two aspects of relationships: the quality of same sex and different sex peer relationships, and how popular obese children and adolescents perceive themselves to be amongst their peers. These aspects of social functioning have not been explored before for obese children and adolescents who are presenting for weight

loss. Following from Leary's sociometer theory of self-esteem, it is proposed that the relationships and perceived popularity of obese children and adolescents is an important consideration when thinking about the psychological consequences of obesity.

Weight Management Programmes

Thus, there is growing recognition that obesity is linked with a number of psychosocial, as well as physical, consequences in childhood. If obese children and adolescents are likely to be the targets of discrimination, have low self-esteem and difficulties in relationships, along with the short-term and long-term physical consequence, it is important that obesity becomes the target of prevention and treatment programmes. The recent Health Select Committee report (Health Select Committee, 2004) called on the NHS to make obesity services more of a priority and to ensure that obese children have access to specialist care. This highlights the importance of identifying weight management programmes which are effective both in reducing the BMI of overweight and obese children and that may be of psychological benefit.

Several reviews have been conducted which look at the effectiveness of weight management programmes for children and adolescents. The majority of studies report effectiveness primarily in terms of weight loss or reduction in body mass index (BMI). Summerbell et al. (2004) conducted a review to assess the effects of a range of lifestyle interventions designed to treat obesity in childhood. They reported that whilst there is some high quality data regarding the effectiveness of obesity prevention programmes, no generalisable conclusions could be drawn. The studies reviewed were small and most were drawn from homogenous, motivated groups in hospital settings. There was some evidence to suggest that strategies that aim to encourage the reduction of sedentary behaviour and increase physical activity may be beneficial. The NHS Centre for Reviews and Dissemination (2002) reviewed 35 randomised controlled trials aimed at preventing and treating obesity in children. They suggest that multi-faceted family based programmes involving parents,

increasing physical exercise, providing dietary education and targeting a reduction in sedentary behaviour may help children lose weight. Glenny, O'Meara, Melville, Sheldon, and Wilson (1997) conducted a systemic review on obesity including studies on both adults and children. Thirteen randomised control trials were reported which used a range of approaches including parents and children together, parental involvement, controlled exercise and diet and promotion of lifestyle changes. Results were equivocal, though those interventions that included lifestyle changes looked the most promising. None of the above reviews have reported on the psychosocial impact of weight management programmes for children.

Psychological impact of weight management programmes

The impact of weight management programmes on psychological well-being has been little researched. There have been some concerns that interventions which are aimed at improving childrens eating habits may carry some risks to their psychological well-being, including lowering of self-esteem, development of body image dissatisfaction and binge eating disorder (Striegal-Moore, 2001). Cameron (1999) suggested that participation in weight management programmes may put children at risk of decreased self-esteem. She found that children aged 10 – 15 years showed decreases in self-esteem over the course of a 12 week weight management course, with the most significant decreases being in physical appearance and physical abilities. It was suggested that this decrease was in part due to the weekly weigh-in which made children feel embarrassed and inadequate and felt punitive. If weight loss goals were not achieved this could lead to feelings of failure. She goes on to suggest that programmes should promote the use of coping mechanisms and enhance self-perception.

In contrast to Cameron's findings, Walker, Hill, Gately, Berwick, and Cooke (2001), in research at the residential weight loss camp at which the current research takes place, found that participation in the camp improved children and adolescents psychological functioning, with decreases in body dissatisfaction and increases in global self-esteem, athletic competence and physical appearance esteem. A major

difference in these two studies was that the children in Walker's study lost weight, whilst in Cameron's they did not.

Jelalian and Mehlenbeck (2002) evaluated the use of peer-based skills training in addition to a traditional cognitive behavioural weight management programme for overweight adolescents and their parents. Along with weight loss, they assessed self-concept, physical self-worth and social functioning. Significant improvements were found in physical self-worth, physical appearance and romantic appeal. However these findings were based on a very small sample.

Braet, Tanghe, De Bode, Franckx, and Van Winckel (2003) investigated the effect of a 10 month inpatient multicomponent treatment programme for obese children and adolescents on weight and psychological well-being. Treatment focused on attaining a healthy lifestyle by increasing physical activity, offering a healthy diet and working within a cognitive behavioural framework. All children lost weight, with no increase in self-reported eating pathology. Physical appearance self-concept, athletic competence and social competence all improved over the course of treatment. However no longer term follow-up was reported.

The physical and psychosocial impact of a school-based intervention for the prevention of obesity, in which children took part in sessions 5 days a week for 16 weeks was investigated (Neumark-Sztainer, Story, Hannan, and Rex, 2003). The intervention aimed to increase physical activity and provided education about healthy eating. Sessions aimed to enhance self-image, manage stress and provide support for change. Following the sessions 77% reported an increase in their levels of physical activity and 69% felt it improved how they felt about themselves, though no standardised measures of psychological functioning were used. This indicates that benefits can be gained even without weight loss. This was also found following a community six-month multi-disciplinary weight management programme for girls aged 8 to 15 (Brehm, Rourke, and Cassell, 2003). The programme included nutrition education, behaviour modification, stress management and assertive techniques. and social support from parents and peers. Anxiety decreased, and there

was an increase in perceived social acceptance and athletic competence. However, no changes in body mass index or body fat was observed, suggesting that psychological improvements may not be only a result of weight loss.

Although these programmes vary greatly in their length, method and intensity of intervention (i.e. residential or school/home based) they do provide some evidence of psychological benefits of weight loss programmes. However, although popular in the US, there is relatively little research about the effectiveness of residential summer camps aimed at promoting weight loss. Available research suggests children do lose weight over the course of camp (e.g. Gately, Cooke, Butterly, Mackreth, and Carroll, 2000) though long-term follow-up has not been reported. Previous research at the camp at which the present research is based suggested there were psychological benefits in terms of improved self-esteem and decreased body dissatisfaction. However, further research is required to establish whether findings of an increase in self-esteem are consistent, and to examine other issues of relevance to the psychological functioning of obese children and adolescents, such as social functioning.

The Present Study

Given the increasing prevalence of obesity in children and young people, it is important to consider the psychological impact of obesity and of weight loss treatment. The current study investigates the association of victimisation and self-esteem in a clinical sample of obese children and adolescents. The social functioning of this group of young people is also considered. These are areas which have not been investigated previously in obese children and adolescents who are presenting for weight management treatment.

Whilst no overarching theory exists which accounts for the relationships between obesity, self-esteem, victimisation, peer relationships and perceived popularity, several theories of self-esteem are drawn upon. Harter (1993) proposed a model of self-esteem in children and adolescents which drew upon the ideas of James (1890) and Cooley (1902). This proposed that self-esteem was a function of competence in

domains of importance and the support that one receives from significant others. Leary (2002) proposed the sociometer theory of self-esteem, where self-esteem is a function of acceptance or rejection by others. Alongside this are ideas about the impact of stigmatisation on stigmatised individuals. Obesity is stigmatised, perhaps as a function of attributions about the causality of obesity. Such stigmatisation is proposed to have implications for interpersonal relationships and social rejection. Thus it is proposed that the social functioning of obese children and adolescents is an important consideration. In the current study overweight-related victimisation, quality of peer relationships and perceptions of popularity are considered. These have not previously been investigated in a clinical sample of obese children and adolescents.

It is also important to consider the impact of weight-loss programmes on these issues. Implementing prevention programmes and getting a better understanding of treatment for young people is important to controlling the obesity epidemic. Whilst many studies have considered the effectiveness of weight loss programmes, few have considered their psychological impact on the child or young person. The current study considers the psychological impact of Carnegie International Camp, a residential summer camp for children and young people which aims to develop a programme which encourages weight reduction and also the opportunity to make new friends, learn new skills and have fun. Only one previous study has reported on the psychological impact of a summer weight-loss camp. The aspects of emotional well-being considered in the current research are self-concepts, body dissatisfaction and social relationships. The change in these over the course of camp will be investigated.

Previous research at the weight loss camp has looked at some of the psychosocial correlates of obesity, and of attendance at the camp. Walker et al (2003) found that body shape dissatisfaction significantly decreased and athletic competence, physical appearance and global self-esteem increased over the time at camp. Attendance at camp did not exacerbate existing worries about appearance, figure or weight. The degree of weight loss was significantly related to psychological improvement, and

vice versa. Barton, Walker, Lambert, Gately, and Hill (2004) investigated the change in cognitions concerning exercise, eating and appearance over the course of camp. Attendance at the camp was associated with a significant reduction in the number of automatic negative thoughts and increase in the number of positive thoughts, especially in relation to exercise and appearance. Weight loss largely accounted for the change in cognitions. The previous research at camp did not consider the frequency or impact of overweight related teasing on the psychological health of obese children and adolescents, nor has it considered the social relationships.

Aims and Hypotheses

The main aims of the proposed study were:

- To estimate the frequency of overweight-related bullying and victimisation in obese children and adolescents who are attending a residential weight loss camp.

- To investigate the association between overweight related bullying/victimisation and self-esteem in obese children and adolescents attending the camp.

- To investigate social functioning in obese children and adolescents attending the camp.

- To assess the effects of attendance at the weight loss camp on self-esteem and social functioning.

Hypotheses

1. It was hypothesised that the obese campers would be subject to more overweight-related victimisation than non-obese children and adolescents.

2. It was hypothesised that overweight-related victimisation would be associated with lower self-esteem and increased body dissatisfaction.

3. It was hypothesised that obese campers would report less positive peer relationships and see themselves as less popular than the non-obese children and adolescents.

4. It was hypothesised that those children who reported overweight-related victimisation would have less positive peer relationships and perceive themselves to be less popular than those who were not victimised.

5. It was hypothesised that following camp there would be improvements in self-esteem and in social functioning.

6. It was hypothesised that staff would also identify the campers low self-concepts, experience with victimisation and problems with social functioning.

METHODOLOGY

Carnegie International Camp

Data were collected from two weight loss camps run by Leeds Metropolitan University, during consecutive summers in 2002 and 2003. Both camps took place at Woodhouse Grove School, near Leeds. This is a boarding school which has good sports facilities including a swimming pool, sports hall, weights area and playing fields. Children stay at the camp for a minimum of two weeks, and a maximum of 6 weeks (the full length of the camp).

When it was first established Carnegie International Camp (CIC) was self-funded but now has an increasing number of children, usually 5% to 15% who are referred and funded through the NHS or Social Services. In 2002 there were 13 children funded through either Primary Care Trusts or Social Services, in 2003 there were 8.

The camp is composed of three types of intervention: physical activity, diet and education. The daily routine included 4 hour-long sessions of fun-based, skill enhancing physical activity. There was an emphasis on enjoyment of physical activity, whilst building the skills and confidence for the individual to continue them when returning to their home environment. There was one hour a day of nutrition or lifestyle education or discussion. The nutritional sessions were aimed at informing food choices and awareness of eating and exercise. Lifestyle sessions looked at environmental and situational influences on eating and exercise behaviour. Potential difficulties with continuing with weight loss and increased physical activity when returning home were considered. There was also the opportunity for fun leisure and social activities such as day trips, cinema trips, discos, giving the children opportunity to socialise with other campers and staff.

Children were placed in one of five food groups based on an estimation on their basal metabolic rate (using revised Schofield equations Schofield, Schofield, and James, 1985)). The group calorie intakes were 1300, 1800, 2300, 2800 and 3330.

Each daily menu included 3 meals and 2 snacks throughout the day. This was designed to reduce body fat whilst providing enough food energy for the high amount of physical activity. The diet was designed to be healthy, but one that the individuals could realistically continue in their home environment.

Children were split into four single sex groups; upper boys (15 – 18 years old); lower boys (10 – 14 years old); upper girls (15 – 18 years old); and lower girls (10 – 14 years). The children stayed in these groups for the physical activity and educational sessions and in living quarters but mixed for some recreational activities.

All parents were invited to attend a seminar at the beginning of camp and a parents weekend halfway through the camp aimed to promote further awareness of nutrition, exercise and lifestyle issues. All parents were given a pack of information and recipes to help support their child to continue to lose weight and be active.

Research Design

A repeated measures design was utilised, with data collected when the child first arrived at camp and just before leaving. Data from a normal weight comparison group were collected prior to the camp.

Participants

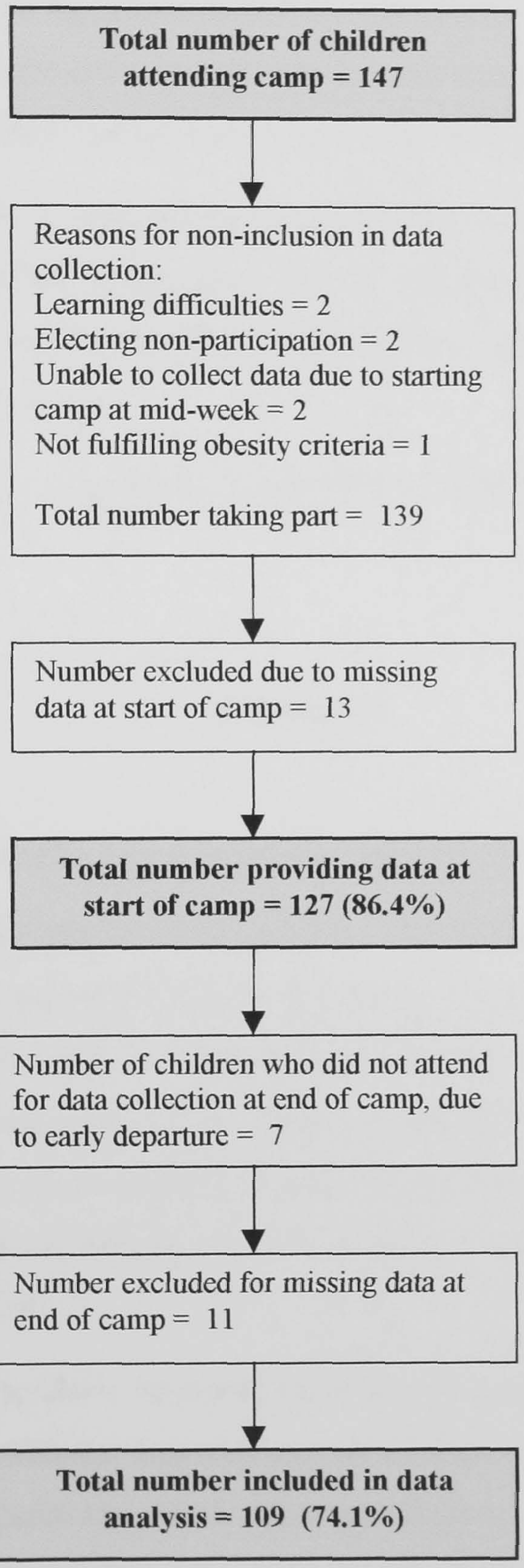
The participants in the study were young people aged 10 to 18 years who attended the summer weight loss camp. Children were accepted at the camp if they were overweight or obese according to international cut-offs devised by Cole, Bellizzi, Flegal, and Dietz (2000). The mean duration of stay at the camp was 29 days (range 11 – 39).

In 2002 there were 71 campers, 35 males and 36 females, with an age range of 10.74 to 17.06 years (mean = 13.82).

In 2003 there were 102 campers, 52 males and 50 females, with an age range of 10.55 to 18.08 years (mean = 14.56). 26 of the participants were at camp in both 2002 and 2003. This potential duplication was accounted for in the data analysis.

Only the 2003 data were included, as some measures were not administered in 2002. See figure 1 for more information regarding response rate.

Figure 1: Flow diagram of participation in the study



To assess the representativeness of the data, the participants entered in the final data set were compared with those with missing data either from the start or end of camp (N = 31). There were no significant differences in terms of age, sex, BMI sds at start of camp or BMI sds at the end of camp, thus it appears that the sample was representative of the whole group according to these measures.

A comparison group from local schools was included in the study, 45 male (mean age = 14.20) and 23 female (mean age = 14.43). According to their BMI sds, none of the comparison group was obese, 88.2% were in the normal weight range and 11.8% were in the overweight range.

Approval for the study was given by Leeds (West) Local Research Ethics Committee.

Measures

Self-Perception Profile for Children (SPPC) (Harter, 1985)

This measures different aspects of self-esteem. The 36-item questionnaire consists of 6 subscales, measuring perceived competence in five domains and global self-worth (see Appendix 1). The five domains are scholastic competence, social acceptance, athletic competence, physical appearance and behavioural conduct. Global self-esteem is seen as a separate component rather than the sum of the five domains. The internal consistency reliabilities for the sub-scales are acceptable, ranging from 0.71 to 0.86.

Each child was asked to chose between two contrasting statements for example 'some kids are *happy* with the way they look *BUT* other kids are *not happy* with the way they look'. The child was asked which statement is most like him/her and then to decide whether it's 'sort of true for me' or 'really true for me`. Items within each domain were counter-balanced so that for three items the wording of the statement on the right was the most adequate self-judgement and for the other three the most

adequate statement was on the left. Items were scored 4, 3, 2 or 1 with 4 representing the most adequate self-judgement and 1 representing the least adequate.

The SPPC also includes a scale which measures the importance that the young person attaches to each of the five specific domains. This is based on the ideas of James (1892) that global self-concept results from the relationship between one's competence and one's aspirations to be competent. If one is successful in a domain judged important, high self-esteem ensues; if one is not successful in a domain judged important, low self-esteem ensues.

The importance scale is a ten-item questionnaire including two items for each of the five specific domains. Response format is identical to the SPPC. Items were again coded 1 to 4, where a score of 3 or 4 indicate that the child perceived the domain to be important enough to have an effect on general self-esteem.

Assessment of victimisation and bullying

Embedded within the SPPC were two six-item self-report scales to assess bully-victim problems at school, adapted from the Peer Victimisation Scale (Neary and Joseph, 1994) and Bullying Behaviour Scale (Austin and Joseph, 1996) (see Appendix 1). The scales were designed so that they could be embedded within the SPPC to reduce saliency of the items. Items concerning general teasing, bullying and name-calling from the PVS and BBS were used to measure general victimisation and bullying behaviour. In addition items concerning over-weight related bullying, developed by Murphy (1999) were included. There were 3 items in each of each scale. These new scales were immersed within the SPPC, creating a 48-item questionnaire.

Higher scores indicate greater experience of victimisation or bullying, thus score of 3 or 4 indicated that a child reports being victimised or bullying others.

Harter Teacher Rating Scale (Harter, 1985)

The teacher rating scale parallels the SPPC for children. For each of the five specific domains, the 'teacher' rated the child's actual behaviour, not how they think the child would answer. Three items were included per domain (see Appendix 2). The format is exactly the same as the child version. Domain scores were calculated as an average of the three items, and therefore can be directly compared to the child's version which are calculated on the same basis. The manual stated that the measure was also suitable for other adults to rate the child's competency, thus at camp the staff were asked to complete the measure. Some adaptations were made, with the academic self-concept domain omitted as staff would not have experience of this. Additional items were added to reflect the peer victimisation items in the child version.

This questionnaire was only completed once, at around the time the child was due to leave camp. Only one member of staff filled in a questionnaire for each child. The member of staff was one who had spent a large amount of time with the child.

Body Shape Preference

The pictorial figure rating scale (Stunkard, Sorensen, and Schulsinger, 1983), which Hill, Draper, and Stack (1994) adapted for use with boys and girls, was used to measure actual and preferred body shape perception (see Appendix 3). The scale consisted of seven line drawings of body shape which increase in size from a thin shape to a large, obese shape. Below this is a continuous line. Participants were asked to select a point on the line below the shapes in response to the following questions:

Question 1: Which point on the scale is most like you now?

Question 2: Which point on the scale would you most like to look like?

The measure was used to assess participants perception of their current and ideal body shapes. Body shape dissatisfaction was measured by subtracting the rating for ideal body shape from the current body shape rating. A score of zero indicates body shape satisfaction, a negative score indicates a preference for a thinner shape, and a positive score indicates a preference for a larger shape.

Assessment of Interpersonal Relations (AIR) (Bracken, 1993)

The AIR was developed to assess the quality of interpersonal relations from the perspective of the child. It assesses the quality of relationships children have with the individuals who are most important in their lives: their mothers, fathers, male peers, female peers and teachers. Bracken defines interpersonal relationships as

> "the unique and relatively stable behavioural pattern which exists or develops between two or more individuals as a result of individual and extraindividual influences"

This definition aims to emphasise the behavioural aspects of relationships, incorporating the influences of the environment on people's perceptions and behaviour.

For the purposes of this study, only the male peer and female peer sub-scales were used, which assessed same sex and different sex interpersonal relations (see Appendix 4). Within the scales, 15 elements of relationships were assessed (companionship; emotional support; guidance; emotional comfort; reliance; trust; understanding; conflict; identification; respect; empathy; intimacy; affect; acceptance; acceptance; shared values) which are based on four basic types of social support: esteem support; informational support; instrumental support and companionship. Each scale contained 35 items which indicated the extent to which an individual agreed or disagreed with the item stem, pertaining to their male peers and female peers. The response format was a forced choice Likert-type scale with no neutral option. The scale has both positively connoted items and negative items.

with differential scoring for each. The score provides an indication of the extent to which interpersonal relationships are positive or negative.

The scale is normed for children aged 9 years to 19 years. It takes into consideration both gender and age differences in the relationship development of young people, by providing separate norms for boys and girls across the age range. It has been found to have good reliability; the total scale internal consistency is 0.96, with coefficient alphas for the social scales ranging from .93 to .94. Total scale two-week stability is 0.98, with that for male peers being .96 and for female peers .94. Content, construct, discriminant and convergent validity have all been demonstrated.

Perception of Social Status

In order to find out how participants perceived their own social status, a 'ladder' was developed, based on the youth specific indicator of social status developed by Goodman et al. (2001), itself an adaptation of the MacArthur Scale of Subjective Social Status (Adler, Epel, Castellazzo, and Ickovics, 2000). They found that ratings based on this scale were strongly associated with popularity and global self-esteem and that the measure could be used to assess adolescents' perceptions of social stratification.

In this measure, the participant was asked to rate their social status in comparison to other children at school (see Appendix 5). A ladder was used as a way to picture school. The children in their school whom they perceived to have the most respect and highest standing were at the top of the ladder, and at the bottom were children who no-one respects and no-one wants to hang around with. Participants were asked to rate where they felt they would be on the ladder. There were 10 rungs of the ladder, giving a score of between 1 and 10 with 10 being the most popular, 1 the least popular. At the end of camp, campers were asked to rate where they would be compared to the other children at camp. Thus, this differed to the emphasis of the AIR at the end of camp, which measures overall interpersonal relationships with peers, whereas the ladder is more specific to the camp situation.

Social Skills Rating System (SSRS) (Gresham and Elliot, 1990)

This provided a multi-rater assessment of social behaviours which can affect relationships, peer acceptance and academic performance. As each component of the SSRS can be used independently, for this research only the 'teacher' rating form was used, in order for camp staff to rate the behaviour of the children. In its full form, it measures social skills, problem behaviours and academic competence. Here the academic competence scale was omitted. Greshem and Elliot define social skills as socially acceptable learned behaviours which enable a person to interact effectively with others and to avoid socially unacceptable responses. Developing such skills in order to enable successful relationships is an important accomplishment of childhood. However not all children accomplish these skills and some experience negative relationships with adults and peers.

For the social skills component, the staff member assessed common core behaviours in subdomains of assertion and self-control (see Appendix 6). In the problem behaviours staff assessed behaviour in sub-domains measuring externalising problems (inappropriate behaviours involving verbal or physical aggression) and internalising problems (behaviours indicating anxiety, sadness, loneliness and poor self-esteem).

The rater was asked to rate how often they observed a particular behaviour in a child, on a scale of never, sometimes, and very often. The overall score was converted into categories according to whether the child displays fewer, average or more of each type of behaviour than expected. The same member of staff who completed the Harter teacher scale for the child also completed this at the same time point.

The measure has demonstrated reliability, with internal consistency coefficients: assertion - .86 and self-control - .89, externalising behaviours - .89 and internalising behaviour - .80. Test-retest reliability for assertion was .75 and self-control - .80, externalising behaviours - .82, and internalising behaviour - .76. Content validity.

social validity, criterion-related validity and construct validity has been demonstrated as adequate. Convergent and discriminant validity are adequate.

Anthropometric measures

Various measures of body size and composition were taken using standard apparatus, including height, weight and body fat. Using the height and weight measures, body mass index was calculated for each child, using the formula kg/m^2. Body mass index standard deviation scores (BMI sds) were used in this research to define obesity. BMI sds uses age-related reference curves, using the 1996 revision of the Child Growth Foundation's growth reference programme, to ascertain level of overweight, which are more accurate in children. The recommended cut-off points are a standard deviation score >1.04 for body mass index (above the 85^{th} percentile) defined as overweight, and a standard deviation score >1.64 (above the 95^{th} percentile) for obese (Barlow and Dietz, 1998; Reilly et al., 1999).

Procedure

Initial weight, height, levels of body fat, physical fitness and psychological data were assessed by staff and the researcher on their first Monday of camp. Only selected data are reported in this thesis. Psychological data were collected in small, single sex groups to ensure privacy and to allow questions throughout the assessment. Consent was gained from parents for collection of all the psychological and anthropometric data prior to camp (Appendix 7).

Participants were informed that the questionnaires ask questions about them as individuals, what they think about things, how different things make them feel, what they like doing and what they don't like doing. It was also explained that, given how we feel about things changes over time, they would be asked to complete the questionnaires at the beginning of camp and at the end of camp. Confidentiality and the voluntary nature of participation was emphasised.

Participants were asked to sit apart from each other so they did not look at anyone else's questionnaire. Each questionnaire was explained to the participants using standardised instructions, emphasising that there were no right or wrong answers. There were seven questionnaires in total, including an exercise motivation questionnaire and physical education questionnaire for additional research at the camp which is not included in this thesis. Participants were encouraged to ask questions if they did not understand the instructions. After completing the questionnaires participants were given plain envelopes in which to seal their questionnaires, which were then left with the researcher. Participants did put their name and date on each questionnaire, but questionnaires were coded immediately to give each participant a number and no member of camp staff was able to view the questionnaires. On their last Friday of camp the same procedure was repeated.

The same procedure, with adapted instructions, was followed for the comparison group. The comparison group attended Leeds Metropolitan University for a day where the assessments were carried out, along with fun and skill-based activities. Data was also collected from the comparison group after they returned to school after the summer holiday. Unfortunately only 25 of the original comparison group returned, all of whom were in one school class thus the sample was unrepresentative in terms of age compared with the whole sample so this group were not used for further analysis.

Data analysis

Data were analysed using SPSS for Windows (version 11.0). MANOVAs were used to look at the potential impact of condition (camper vs comparison), gender (male vs female) and victimisation status (not involved vs victimised vs bully/victim) on psychological data (self-esteem, body dissatisfaction and social relationships), and the interactions between these variables. Interactional relationships were clarified using post-hoc independent measures t-tests. Further MANOVAs looked at the effect of time (start vs end of camp) on camper's psychological measures.

Correlational analysis looked at the relationship between duration of stay, weight loss and psychological measures.

RESULTS

Characteristics of Campers and Non-Obese Comparison Children

109 campers (54 male, 55 female) who had complete psychological and anthropometric data, were included in of the analysis. 37 of these attended the camp in 2002 and 72 attended in 2003. Any camper not classified as obese according to their body mass index standard deviation score (BMI sds > 1.64) at the start of camp was excluded from analysis. This excluded one camper who was in the overweight range.

Table 1: Characteristics (mean, SD) of campers at the start of camp and non-obese comparisons.

	Campers (N = 109)		**Comparisons (N = 68)**	
	Male	Female	**Male**	**Female**
Age (years)	13.9 (1.7)	14.7 (1.5)	14.2 (1.4)	14.4 (1.3)
Height (cm)	166.7 (12.2)	163.7 (6.5)	165.4 (11.4)	161.4 (7.0)
Weight (kg)	92.1 (24.9)	94.2 (20.4)	53.9 (10.4)	52.9 (9.5)
BMI (kg/m^2)	32.7 (5.9)	35.0 (6.5)	19.5 (1.8)	20.2 (2.5)
BMI sds	2.99 (0.58)	3.07 (0.64)	0.24 (0.64)	0.16 (0.8)

Table 1 shows the physical characteristics of campers (prior to camp) and comparisons, categorised by sex. There were significant differences between the campers and comparisons in terms of weight ($F(1,172) = 171.98$, $p < 0.001$), BMI ($F(1,172) = 301.88$, $p < 0.001$) and BMI sds ($F(1,172) = 752.41$, $p < 0.001$) reflecting the fact that the campers were all obese, and the comparisons either normal weight or slightly overweight. No significant differences existed between campers and comparisons in terms of age or height.

There were significant differences between sexes in terms of age (F = 1,172) = 4.32. p = .039), with girls being slightly older, and height (F(1,172) = 4.90, p =0.028), with boys being taller. There were no significant sex difference in all other measures, nor any condition by sex interaction.

Hypothesis 1: Obese campers would be subject to more overweight-related victimisation than non-obese children and adolescents, and that overweight-related victimisation would be associated with lower self-esteem and increased body dissatisfaction.

Prevalence of overweight-related victimisation

The first hypothesis proposed that obese campers would be more likely to experience overweight-related victimisation. In order to assess this, all the participants were categorised according to their response on the overweight-related victimisation scales embedded in the Self-Perception Profile for Children (SPPC). Previous research has indicated that mean scores of 2.20 – 2.33 correspond with peer identification of bullying and scores of 2.70 – 2.82 corresponds with self-identification (Callaghan and Joseph, 1995; Neary and Joseph, 1994). Using this, Austin and Joseph (1996) chose a cut-off score of 2.5 to classify children into bully/victim categories. A score below 2.5 indicated that the participant did not experience weight-related teasing, whereas a score of 2.5 or above indicated that the participant did experience weight-related teasing. Participants were placed within one of four groups according to their response on these scales:

- ***'not involved'***: these participants did not report experiencing any weight-related teasing or being involved in bullying
- ***'victimised'***: these participants reported experiencing weight-related teasing
- ***'bully'***: these participants reported teasing other children about their weight
- ***'both'***: these participants reported being both a victim and perpetrator of weight-related teasing (victim/bullies).

Table 2: Number of children (%) experiencing and being involved in weight-related victimisation

	Campers		Comparisons		Total
Victimisation status	**Male**	**Female**	**Male**	**Female**	
Not involved	25 (46.3)	26 (47.3)	32 (71.1)	21 (91.3)	104 (58.8)
Victimised	27 (50.0)	22 (40.0)	4 (8.9)	1 (4.3)	54 (30.5)
Bullies	0 (0)	1 (1.8)	3 (6.7)	1 (4.3)	5 (2.8)
Both	2 (3.7)	6 (10.9)	6 (13.3)	0 (0)	14 (7.9)
Total	54	55	45	23	177

As Table 2 shows, 50% of male campers and 40% of female campers reported experiencing weight-related victimisation, compared with 8.9% of male comparisons and 4.3% of female comparisons. A further 3.7% of male campers, 10.9% of female campers and 13.3% of male comparisons reported experiencing weight-related victimisation, but also reported that they victimised others. Therefore these children were kept as a separate category.

Table 3: General victimisation in campers and comparisons

	Campers	Comparisons
Not involved	50 (45.9%)	53 (77.9%)
Victimised	46 (42.2%)	5 (7.4%)
Bully	6 (5.5%)	8 (11.8%)
Both	7 (6.4%)	2 (2.9%)

Table 3 shows the levels of general victimisation. In total 46.6% of campers report general victimisation, including those who report being both victims and perpetrators of victimisation. In total, 10.3% of comparisons report victimisation.

This is a significant difference (chi squared (3) = 28.12; $p < 0.001$). This suggests that the higher prevalence of victimisation reported by the obese campers was due to overweight-related victimisation.

Table 4: Frequency (%) of general victimisation and overweight related victimisation

		Overweight related victimisation				
		Not involved	**Victim**	**Bully**	**Both**	**Total**
General victimisation	**Not involved**	37 (33.9)	12 (11.0)	0	1 (1.1)	50 (45.8)
	Victim	9 (8.6)	32 (29.4)	1 (1.1)	4 (3.7)	46 (42.2)
	Bully	3 (2.8)	3 (2.8)	0	0	6 (5.5)
	Both	2 (1.8)	2 (1.8)	0	3 (2.8)	7 (6.4)
	Total	51 (46.8)	49 (45.0)	1 (1.1)	8 (7.3)	109

Table 4 shows the frequency of general victimisation and overweight related victimisation in campers. 42.2% of campers reported general victimisation, with a further 6.4% being bully/victims. The reported levels of general victimisation and overweight related victimisation were found to be related. Significant associations were found for both boys (chi square(6) = 14.6, $p = .024$) and girls (chi square(9) = 32.1, $p < .001$). Participants who were victimised for overweight were also more likely to report general victimisation.

33.9% of campers were not involved in either type of victimisation. 29.4% were reported both general and weight related victimisation. 65.3% of campers who reported weight related victimisation also reported general victimisation.

As there was a large overlap between general victimisation and overweight-related victimisation, it seems likely campers are reporting their overweight-related victimisation experiences within their responses to the general victimisation

questions. As general victimisation was also found to be low, overweight victimisation only is considered in the following analysis.

Given the small number who report bullying, but not being victimised, these children were removed from the following analysis. Furthermore, as there were similar ratios of males and females in each category, the following analysis will not separate males and females.

Table 5: Characteristics of campers and comparisons according to weight-related victimisation status

	Campers			Comparisons		
	Not involved	**Victimised**	**Both**	**Not involved**	**Victimised**	**Both**
Age (years)	14.5 (1.7)	14.2 (1.7)	13.9 (1.6)	14.4 (1.4)	13.9 (1.5)	13.3 (1.0)
Height (cm)	166.7 (9.0)	164.0 (10.8)	163.7 (9.3)	164.0 (10.1)	164.0 (4.4)	155.1 (9.6)
Weight (kg)	89.2 (17.5)	96.2 (26.6)	102.1 (24.5)	53.8 (10.0)	52.6 (9.2)	45.2 (8.6)
BMI (kg/m^2)	31.9 (4.5)	35.4 (7.3)	37.7 (6.5)	19.9 (2.1)	19.5 (2.8)	18.6 (1.4)
BMI sds	2.83 (0.58)	3.19 (0.53)	3.42 (0.51)	0.23 (0.70)	0.45 (0.64)	0.12 (0.70)

Table 5 shows physical characteristics of campers and comparisons, categorised according to their victimisation status. MANOVA revealed no significant differences in age, height, weight, BMI or BMI sds between the three groups of victimisation. As already reported there was a significant difference between campers and non-obese comparisons in terms weight ($F(1,165) = 90.77$, $p < .001$). BMI ($F(1,165) = 159.37$, $p < 0.001$) and BMI sds ($F(1,165) = 345.52$, $p < 0.001$). There was no significant interaction between condition and victimisation status.

Association of weight-related victimisation and self-concept

Hypothesis 2: It was hypothesised there would be a overweight-related victimisation would be associated with lower self-esteem and increased body dissatisfaction. The next section explores the association of overweight-related victimisation and self-concept. Following is a section exploring the association of overweight related victimisation and body dissatisfaction.

Table 6: Mean (SD) self-concept for campers and comparisons according to weight-related victimisation status

	Campers			Comparisons		
	Not involved	**Victimised**	**Both**	**Not involved**	**Victimised**	**Both**
Scholastic competence	2.84 (0.69)	2.77 (0.82)	2.44 (0.37)	2.97 (0.58)	3.13 (0.48)	2.61 (0.27)
Social acceptance	3.18 (0.59)	2.43 (0.76)	2.60 (0.62)	3.44 (0.41)	3.13 (0.48)	3.39 (0.49)
Athletic competence	2.54 (0.62)	2.00 (0.64)	1.90 (0.43)	3.48 (0.45)	3.40 (0.65)	3.39 (0.49)
Physical appearance	1.89 (0.59)	1.69 (0.57)	1.35 (0.44)	3.04 (0.65)	2.63 (0.86)	3.14 (0.68)
Behavioural conduct	2.79 (0.63)	2.80 (0.68)	2.92 (0.59)	2.97 (0.58)	3.10 (0.57)	2.56 (0.49)
Global self-worth	2.63 (0.62)	2.33 (0.71)	1.77 (0.59)	3.36 (0.42)	3.47 (0.49)	3.28 (0.60)

The results for the SPPC are displayed in Table 6. Multivariate analysis of variance (MANOVA) revealed significant differences in self-concept measures between condition ($F(6,161) = 20.12$, $p < .001$) and, as hypothesised, between victimisation status ($F(12,324) = 2.22$, $p = .011$). There was no significant interaction between condition and victimisation status.

There were significant differences between the campers and comparisons in social acceptance ($F(1.166) = 15.68$, $p < .001$); athletic competence ($F(1,166) = 82.06$, $p<$

.001); physical appearance ($F(1,166) = 75.65$, $p < .001$) and global self-worth ($F(1,166) = 59.90$, $p < .001$), with the campers score being significantly lower than comparisons on these measures.

As hypothesised (hypothesis 2), significant differences were found between children not involved in victimisation, those experiencing weight-related victimisation and those reporting being both victims and perpetrators of weight-related teasing, in social acceptance ($F(2,166) = 7.03$, $p = .001$); athletic competence ($F(2,166) = 4.26$, $p = .016$) and global self-worth ($F(2,210) = 3.94$, $p = .021$).

T-tests revealed that significant differences were found in campers between those not victimised and those who were victimised in social acceptance ($t(98) = 5.53$; $p < 0.001$), athletic competence ($t(98) = 4.23$, $p < 0.001$); and global self-esteem ($t(98) = 2.29$, $p = 0.024$), with self-concept in all these areas being lower in those campers who reported being victimised.

Significant differences between those who were not involved and those who reported being both victims and bullies were seen in social acceptance ($t(57) = 2.55$; $p = 0.014$), athletic competence ($t(57) = 2.08$, $p = 0.007$); physical appearance ($t(57) = 2.60$; $p = .012$) and global self-esteem ($t(57) = 3.69$, $p = 0.001$), with self-concept in all these areas being lower in those campers who reported being victimised.

Significant differences between those who reported being victimised and those reporting both were found in global self-concept ($t(55) = 2.10$, $p = .041$). Those who reported both had lower global self-concept.

A multivariate analysis of covariance was carried out with BMI sds as a covariate, to investigate if the differences between the victimisation status remained when weight differences were controlled for. Significant main effects were still found for both condition ($F(6,159) = 6.66$, $p < 0.001$) and victimisation status ($F(12,320) = 2.20$, $p = .012$).

Table 7: Mean (SD) importance ratings for camper and comparison children according to weight-related victimisation status

	Campers			Comparisons		
	Not involved	Victimised	Both	Not involved	Victimised	Both
Scholastic competence	2.97 (0.62)	3.04 (0.76)	3.06 (0.56)	3.27 (0.69)	3.00 (0.61)	3.50 (0.63)
Social acceptance	2.65 (0.75)	2.69 (0.80)	2.69 (0.80)	3.08 (0.61)	2.40 (0.96)	2.42 (0.58)
Athletic competence	2.62 (0.77)	2.54 (0.79)	2.69 (1.19)	3.37 (0.63)	2.80 (0.91)	3.33 (0.61)
Physical appearance	2.87 (0.67)	2.92 (0.87)	2.69 (0.88)	2.81 (0.74)	2.60 (0.74)	3.00 (0.71)
Behavioural conduct	3.01 (0.61)	3.15 (0.66)	3.38 (0.64)	3.16 (0.65)	2.90 (0.65)	3.17 (1.03)

Table 7 shows the means of the importance measure from the SPPC for each domain. Harter (1985) suggests a score of 3 or more suggests that the participant considers the domain to be important. Overall, the obese campers rated behavioural conduct as the most important, and athletic competence the least important domains.

MANOVA revealed that there was a significance difference in importance attributed to domains between condition ($F(5,161) = 2.73$, $p = 0.041$) but not between victimisation categories. There was no interaction between condition and victimisation category. There was a significant difference between campers and normal weight comparisons in terms of the importance attributed to athletic competence ($F(1,165) = 8.62$, $p = 0.004$), with normal weight comparison children rating this domain as more important than campers.

Association of victimisation status and body dissatisfaction

Table 8: Mean (SD) perception of body image

	Campers			Comparisons		
	Not involved	Victimised	Both	Not involved	Victimised	Both
Current body shape	122.1 (18.2)	128.1 (22.5)	133.9 (16.2)	67.6 (22.3)	70.0 (15.8)	69.2 (26.6)
Ideal body shape	69.71 (22.0)	74.4 (18.7)	79.9 (38.3)	71.7 (24.0)	82.8 (14.8)	80.2 (17.3)
Body shape dissatisfaction	-52.4 (20.8)	-53.7 (19.8)	-54.0 (41.2)	4.0 (24.7)	12.8 (22.4)	11.0 (12.8)

Table 8 describes the perception of body image according to condition and victimisation status. MANOVA showed a significant effect of condition on body image ($F(5,161) = 2.37$, $p = .041$). There was no significant effect of victimisation status on body image .

Univariate ANOVA revealed that for the difference between condition was seen in current body shape ($F(1,163) = 129.6$, $p < .001$), not ideal body shape. Thus all children had a similar ideal body ideal.

Univariate ANOVA also showed a highly significant effect of condition on body shape dissatisfaction ($F(1,163) = 122.3$, $p < .001$), with no significant effect of victimisation status. Campers were much more dissatisfied with their body shape than normal weight comparisons. However, contrary to hypothesis 2, body dissatisfaction was not affected by whether the children experienced weight-related teasing.

Hypothesis 3: Obese campers would report less positive peer relationships and see themselves as less popular than the non-obese children and adolescents.

Social functioning of obese children and adolescents attending camp

The next section explores the social functioning of the obese children and adolescents and non-obese comparisons to investigate the above hypothesis.

In looking at the social relationship data gathered by the assessment of interpersonal relations (AIR), the data were organised according to the following criteria:

- Same sex data i.e. males rating relationships with their male peers; females rating relationships with their female peers.
- Different sex data i.e. males rating their relationships with their female peers; females rating their relationships with their male peers.

Table 9: AIR scores (mean, SD) of campers and comparisons

	Campers		**Comparisons**	
	Male	**Female**	**Male**	**Female**
AIR same sex	89.6 (10.9)	88.4 (14.5)	98.4 (10.7)	91.5 (11.4)
AIR different sex	89.9 (8.5)	93.8 (14.1)	97.5 (11.1)	99.2 (7.1)

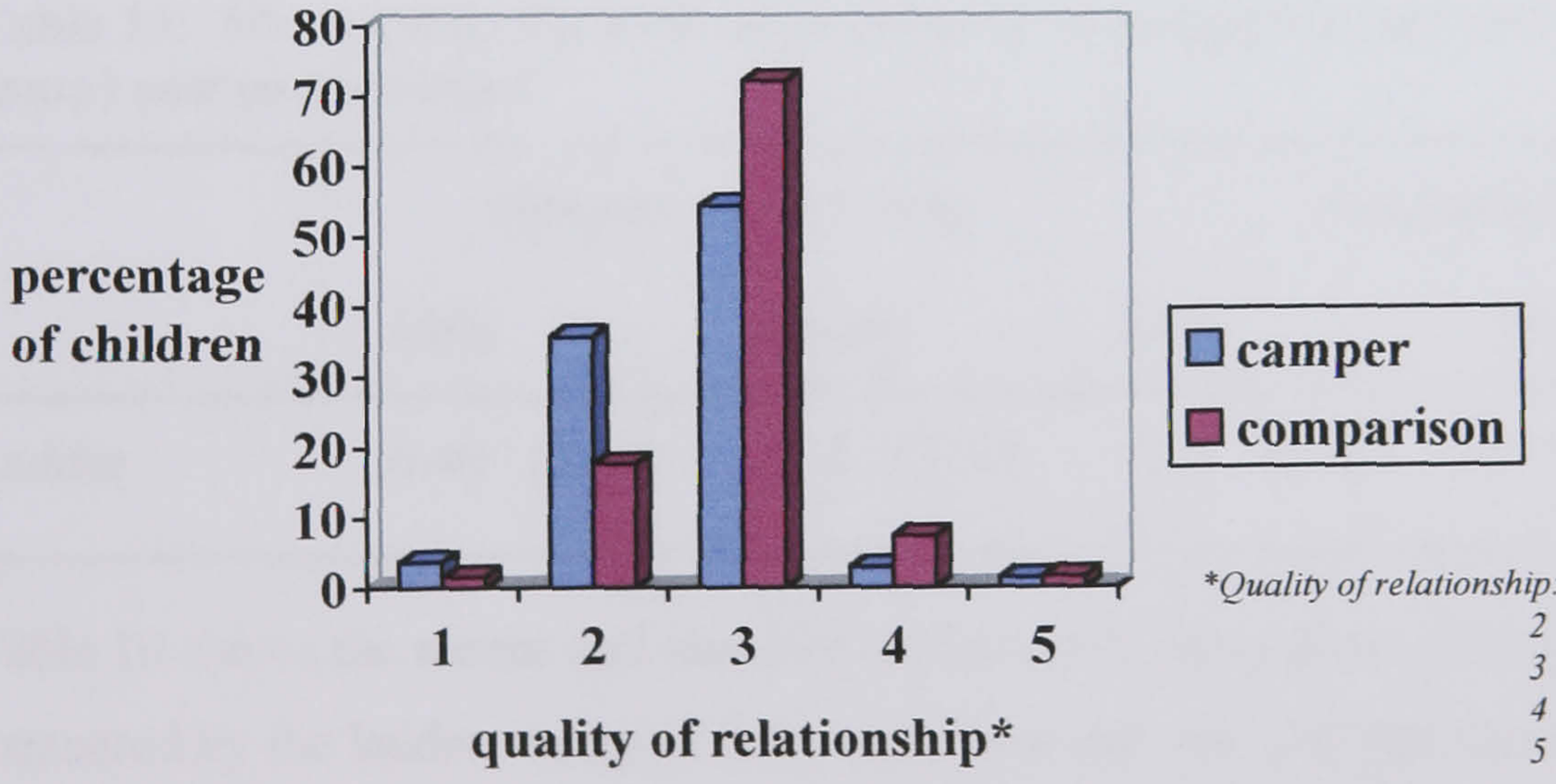
Table 9 shows the means and standard deviations of the AIR total score for campers at the start of camp and for non-obese comparisons, categorised by gender. As hypothesised (hypothesis 3), there was a significant difference between reports of the interpersonal relationships of male campers and male comparisons, both in terms of same sex relationships ($t = 3.57$, $p = .001$) and different sex relationships ($t = 3.21$, $p = .002$). In both cases, comparisons reported more positive relationships. Although the mean scores of comparison females were slightly higher than those of campers, contrary to hypothesis 3, this was not statistically significant.

The AIR standard scores were categorised according to quality of relationship into one of the following bands (Bracken 1993): very positive relationships; moderately

positive relationships; average relationships; moderately negative relationships; and very negative relationships. The following Figures (Figures 2 and 3) show the quality of relationships reported by campers at the start of camp and of comparisons.

Figure 2: Quality of same sex relationship at the start of camp

Figure 3: Quality of different sex relationships at start of camp



Chi-squared analysis indicates that, as hypothesised, there was a significant difference in the quality of same sex relationships between campers and comparisons (chi-square = 16.31, p = .003), but not in the quality of different sex relationships. 23.5% of comparison children reported their same-sex relationships to be negative, compared with 55.6% of campers.

Separate analyses by sex reveals that male campers differed significantly in their relationships with same sex peers compared with non-obese children (chi-squared = 11.01, p = .026), whereas females show no significant differences. Fewer non-obese comparisons (20%) reported negative relationships than campers (51.4%). Conversely, for different sex relationships males showed no significant differences whereas females differed significantly (chi-squared = 11.53, p =.032). Fewer non-obese comparisons (4.3%) reported negative relationships than campers (40%).

Each participant rated their perceived popularity on a 'ladder', with the most popular being given a score of 10, the lowest a score of 1. Table 10 below shows the means (SD) of the ladder scores.

Table 10: Mean (SD) of perceived popularity of campers (start and end of camp) and comparisons

	Campers start of camp		Comparisons	
	Male	Female	Male	Female
Ladder	6.40 (2.29)	6.43 (2.52)	7.98 (1.42)	8.30 (.88)

Table 10 shows the means and standard deviations of perceptions of popularity, as , measured by the ladder, categorised by condition and sex. As hypothesised, the comparisons perceived themselves to be significantly more popular than campers ($t(138) = 5.52$, $p < .001$). This difference was evident in both males ($t(78) = 3.78$, $p < .001$) and females ($t(58) = 3.42$, $p = .001$).

Hypothesis 4: It was hypothesised that those children who reported overweight-related victimisation would have less positive peer relationships and perceive themselves to be less popular than those who were not victimised.

Victimisation status and social relationships

Table 11: Means (SD) of peer relationship scores by victimisation status

	Campers			Comparisons		
	Not involved	**Victimised**	**Both**	**Not involved**	**Victimised**	**Both**
AIR same sex	91.16 (9.5)	89.15 (14.8)	81.40 (15.3)	94.81 (11.7)	102.20 (6.3)	101.83 (8.0)
AIR different sex	95.58 (10.3)	88.45 (12.3)	90.80 (10.7)	97.26 (10.3)	102.20 (9.2)	102.00 (4.3)
Perceived popularity (ladder)	7.25 (1.9)	5.76 (2.7)	5.40 (2.2)	8.25 (1.1)	8.60 (.6)	6.00 (1.8)

It was hypothesised that those children who reported overweight-related victimisation would have less positive peer relationships and perceive themselves to be less popular than those who are not victimised. Table 11 shows the means from the AIR peer relationship scale and the ladder popularity scale according to victimisation status. MANOVA revealed significant differences in condition ($F(3,125) = 7.21$, $p < .001$) and victimisation status ($F(6,252) = 2.51$, $p = .022$). There was also a significant interaction between condition and victimisation status ($F(6, 252) = 2.15$, $p = .048$).

Significant differences between campers and comparisons were present in AIR same sex ($F(1,127) = 14.54$, $p < .001$), AIR different sex ($F(1,127) = 9.66$, $p = .002$) and perceived popularity ($F(1,127) = 8.56$, $p = .004$), with campers scoring lower on all measures.

Significant differences between victimisation status were present in perceived popularity only ($F(2,127) = 6.74$, $p = .002$), with those who were victimised or victim/bullies rating themselves as less popular than those who were not involved.

T-tests revealed that differences were found in campers between those who were victimised and those who were not involved in AIR different sex ($t(62) = 2.50$, $p = .015$) and perceived popularity scores ($t(64) = 2.60$, $p = .012$). Those who were victimised scored lower on these, indicating poorer peer relationships.

Changes over camp

Hypothesis 5: It was hypothesised that following camp there would be improvements in self-esteem and in social functioning.

Table 12: Changes in weight-related characteristics over camp (mean (SD))

	Male (N = 53)		Female (N = 54)	
	Start of camp	**End of camp**	**Start of camp**	**End of camp**
Height (cm)	166.7 (12.2)	167.3 (12.2)	163.7 (6.5)	163.9 (6.4)
Weight (kg)	92.1 (24.9)	86.1 (23.9)	94.2 (20.4)	88.2 (18.6)
BMI (kg/m^2)	32.7 (5.9)	30.3 (5.7)	35.0 (6.4)	32.7 (5.9)
BMI sds	2.99 (0.58)	2.69 (0.68)	3.07 (0.62)	2.80 (0.64)

Table 12 shows means and standard deviation of physical characteristics of campers at the start and end of camp. The mean weight loss in boys was 6.3kg (BMI reduction = 2.40 kg/m^2; BMI sds reduction = 0.30). The mean weight loss in girls

was 6.0kg (BMI reduction = 2.3 kg/m^2; BMI sds reduction = 0.27). Significant differences were found between the start and end of camp in terms of weight ($F(1,105) = 523.17$, $p < 0.001$), BMI ($F(1,105) = 557.46$, $p < 0.001$) and BMI sds ($F(1,105) = 498.26$, $p < 0.001$). These were all significantly lower at the end of camp, indicating that overall the children did lose weight at camp.

Table 13 : Victimisation status at the start and end of camp

		End of camp				
		Not victimised	**Victimised**	**Bully**	**Both**	**Total**
Start of camp	**Not victimised**	38	9	1	3	51
	Victimised	10	38	0	1	49
	Bully	0	0	1	0	1
	Both	1	1	0	6	8
	Total	49	48	2	10	109

Table 13 shows the change in distribution of victimisation status at the start and end of camp. The numbers of campers in each victimisation category were roughly equal at the start and end of camp.

Changes in self-concept over camp

Table 14: Changes (mean, SD) in self-concept over camp

	Start of camp		End of camp	
	Male	**Female**	**Male**	**Female**
Scholastic competence	2.89 (0.69)	2.66 (0.54)	2.85 (0.65)	2.70 (0.80)
Social acceptance	2.79 (0.75)	2.81 (0.78)	2.72 (0.70)	2.78 (0.78)
Athletic competence	2.43 (0.72)	2.06 (0.58)	2.46 (0.69)	2.35 (0.70)
Physical appearance	1.94 (0.58)	1.59 (0.51)	1.95 (0.49)	1.86 (0.57)
Behavioural conduct	2.81 (0.69)	2.79 (0.61)	2.80 (0.60)	2.82 (0.66)
Global self-worth	2.58 (0.64)	2.27 (0.72)	2.64 (0.54)	2.45 (0.78)

Table 14 shows the means and standard deviations of self-concept scores of the campers at the start and end of camp. As hypothesised (hypothesis 5), significant changes in self-concept occurred over the duration of camp ($F(6,102) = 5.24$, $p < 0.001$). Scores significantly increased on athletic competence ($F(1,107) = 10.97$, $p < 0.001$); physical appearance ($F(1,107) = 12.57$, $p < 0.001$) and global self-worth ($F(1,107) = 6.63$), $p = 0.011$).

There was a significant interaction between time and gender ($F(6,102) = 3.01$, $p = 0.01$). Self-concept was higher at the end of camp than the beginning for girls in all domains except social acceptance. Changes were not as consistent across domains for the boys. The interaction of time and gender was significant for athletic competence ($F(1, 102) = 7.10$, $p = 0.009$) and physical appearance ($F(1,102) = 9.58$, $p = 0.003$). T-tests demonstrate that for males there were no significant differences in self-concept over camp. For females, there was a significant improvement in

athletic competence (t(54)- = 4.06; p < .001), physical appearance self-concept (t(54) = 4.40, p < .001) and global self-worth (t(54) = 2.82; p = .007).

Despite the increase in some domains, scores of self-concept at the end of camp failed to reach the normative range suggested by Harter (1985).

Table 15: Changes in importance of self-concept domains over camp

	Start of camp		End of camp	
	Male	**Female**	**Male**	**Female**
Scholastic competence	2.97 (0.65)	3.05 (0.71)	3.06 (0.62)	3.19 (0.71)
Social acceptance	2.62 (0.77)	2.72 (0.77)	2.62 (0.78)	2.80 (0.90)
Athletic competence	2.59 (0.74)	2.58 (0.88)	2.69 (0.71)	2.72 (0.81)
Physical appearance	2.69 (0.80)	3.07 (0.70)	2.58 (0.70)	3.12 (0.85)
Behavioural conduct	3.03 (0.61)	3.18 (0.66)	3.04 (0.62)	3.14 (0.62)

Table 15 shows the change in rating of importance for the domains of self-concept over camp. No significant differences were found.

Changes in social functioning over camp

Contrary to the hypothesis 5, no significant differences were found in campers between the start and end of camp for either males or females.

However, looking at the change in quality of relationship over the course of camp, as measure by the AIR categories, 59.2% of children showed no difference in the quality of their same sex relationships, and 61.8% showed no difference in their different sex relationships. 22.5% reported an improvement in their same sex

relationships , and 22.9% reported an improvement in different sex relationships. The remainder reported deterioration in the quality of relationship (18.3% in same-sex relationships; 15.3% of different sex relationships).

Overall, the campers reported improvements in the perception of their popularity over their time at camp ($t(92) = 2.69$, $p = .008$) as hypothesised (hypothesis 5). Looking at the difference in ratings at the start of camp and at the end of camp, 50% of children rated their popularity to be higher at the end of camp. 26.5% rated their popularity at the start and end of camp the same, and 23.5 rated their popularity lower at the end of camp.

Duration of Stay

The duration of stay at camp was calculated from the day the data were collected at the start of camp to the day data were collected at the end. The range was 11 to 39 days. Duration of stay was significantly correlated with weight lost (as measured by the difference between BMI sds at the start and end of camp) ($r(106) = .462$, $p < .001$), change in athletic competence ($r(109) = .285$, $p = .003$); change in physical appearance self-concept ($r(109) = .233$, $p = .015$) and change in global self-worth ($r(109) = .314$, $p = .001$). Partial correlations were carried out to investigate if these relationships were still present after controlling for weight loss. There were no significant correlations when controlling for weight, indicating that weight loss was a important factor in change in self-concept.

Hypothesis 6: Staff would also identify the campers low self-concept, victimisation experiences and problems with social functioning.

Staff ratings of self-concept and overweight-related victimisation

The staff also filled in the teacher version of the SPPC at the end of camp. Data were available for 54 campers from the 2003 camp only. The correlations with camper's own ratings are displayed in Tables 16 and 17 below.

Table 16: Correlations between camper's self-concept rating and staff self-concept rating

		Staff rating			
		Social acceptance	**Athletic competence**	**Physical appearance**	**Behavioural conduct**
Camper rating	**Social acceptance**	.380**			
	Athletic competence		.505**		
	Physical appearance			.119	
	Behavioural conduct				.423*

*p<0.05, **p<0.01

Table 17: Correlations between campers reported victimisation/bullying and staff reports

		Staff rating			
		Victimised	**Bully**	**Weight-related victim**	**Weight-related bully**
Camper rating	**Victimised**	.260			
	Bully		.091		
	Weight-related victim			.076	
	Weight-related bully				.013

Table 16 and 17 shows correlations between camper's ratings and staff ratings taken at the end of camp. As hypothesised (hypothesis 6), camper's and staff ratings were significantly correlated some domains of self-concept; for social acceptance ($r(53) = .380$), athletic competence ($r(52) = .505$) and behavioural conduct ($r(52) = .423$). No significant correlation was found for physical appearance. However, contrary to the

hypothesis, none of the victimisation or bullying categories showed a correlation between camper's and teacher's ratings.

In order to investigate whether those children who identified themselves as victims of weight-related teasing were also identified by members of the camp staff who worked closely with them, a comparison of the child's rating of the weight related victimisation scale from the adapted SPPC and the staff member's rating was made. No significant correlation was found between the values. 44% of the children for whom there were staff data available identified themselves as victimised, but were not identified by the staff. 46% of children who identified themselves as victimised were also identified as victimised by the staff. The remaining 10% of children did not identify themselves as victimised, but staff believed they were.

Identification of problems in social functioning by staff

Staff also completed the Social Skills Rating Scale for the campers to investigate hypothesis 6, that staff would recognise difficulties in the obese children and adolescents' social functioning. For each of the sub-scales, scores were classified according to whether the child display fewer, average or more of the behaviour.

22.2% showed fewer assertive behaviours than average. 30.8% showed fewer self-control behaviours than average. 15.1% showed more externalising problems than average and 26.4% showed more internalising problems than average.

Looking at the differences in social skills, as rated by staff, of children according to their victimisation status, significant differences were found between victimisation status ($F(8,92) = 2.36$, $p = 0.023$). Significant differences were seen in externalising problems ($F(2,48) = 5.59$, $p = .007$) and internalising problems ($F(2,48) = 3.35$, $p = .044$) but not in assertion or self-control.

T-tests revealed that differences lay between those who were victimised and those who were not involved ($t(45) = 3.14$, $p = .003$) in externalising behaviours, with those who were victimised being identified by staff as displaying more externalising behaviours. There were also significant differences seen in internalising behaviours

($t(45) = 2.22$, $p = .032$), with those who were victimised being identified as displaying more internalising behaviours.

DISCUSSION

The main aims of the study were to investigate the level of overweight-related victimisation of obese compared with non-obese children and adolescents, and the association of this with self-concept. Also, the effect of a weight-loss residential camp on self-concept and social relationships of obese children and adolescents was investigated.

The findings, based on the initial hypotheses, will be discussed in the following section. The clinical implications of the research will then be considered along with recommendations for future research.

Frequency of Overweight Related-Victimisation

The study confirmed hypothesis 1, that the obese campers were subject to more overweight-related victimisation than non-obese children and adolescents. Of the 109 obese children taking part in the study, 50% of males and 40% of females reported experiencing overweight related victimisation, which included being teased, bullied and called names about being fat. This compared with only 8.9% of non-obese males and 4.3% of non-obese females. A further 3.7% of male campers and 10.9% of female campers reported being bully/victims. Overweight-related victimisation was associated with general victimisation. Those who reported overweight-related victimisation were also more likely to report general victimisation. Prevalence of general victimisation was also significantly higher in campers, suggesting a real difference in the amount of victimisation experienced by obese children and adolescents, not just in type.

There has been little research investigating the prevalence of overweight related victimisation in obese children and adolescents. Much previous research on overweight related victimisation has been carried out retrospectively on obese adults, which has made it difficult to estimate the true frequency. Several studies

have looked at the prevalence of weight-related teasing, as reported by children and adolescents. Below is a summary of the findings.

The prevalence of weight-related teasing in the present study was similar to that found by Neumark-Sztainer et al (2002), who found rates of frequent bullying, defined as a few times a year or more, was 45.3% of obese girls and 50.2% of obese boys

Using the same methodology as the current research to assess victimisation, Murphy (1999) found 15.9% of boys and 11.6% of girls aged 12 years experienced overweight-related teasing. Those who were victimised were found to be heavier than those who were not. Separate analysis of overweight and obese children found that 25% of overweight or obese boys and 31% of overweight or obese girls reported overweight related victimisation. Waterson (2001) also used this methodology to look at the prevalence of overweight related teasing in 9 year olds. 16% of boys and 21.3% of girls reported being teased. Again, those who were teased were heavier. 45% of overweight or obese boys and 56% of overweight or obese girls reported overweight related victimisation. Eisenberg et al (2003) found 24.7% of boys and 30% of girls reported weight-related victimisation, but this was across all weight categories, and included victimisation for being thin or underweight.

This study, which looks specifically at obese children and adolescents attending a weight management programme, demonstrates that a significant proportion get victimised about their weight. Given the increased risk of unhealthy eating weight control techniques and binge eating behaviour which is associated with overweight-related teasing, the high prevalence is concerning. Overweight-related teasing has been reported to be the most hurtful form of teasing (Scrambler, Harris, and Milich, 1998) and is linked to increased risk of emotional problems (Eisenberg et al (2003).

In this research, the rates are slightly higher in boys than girls. It is possible that girls are more often the victims of relational aggression, rather than overt aggression. The measure used in this research primarily assesses levels of overt victimisation and does not identify children who are victims of relational aggression.

Obese campers were more likely to be victims of overweight-related teasing and victimisation than non-obese children, perhaps reflecting of the extent of stigmatisation regarding obesity. The obese campers who were teased about their weight were not significantly heavier than those who were not teased, therefore this does not account for the difference in level of teasing. This supports findings of Myers and Rosen (1999) who found that the frequency of stigmatisation varies with weight, but once a person is beyond a cut-off weight, indicative of severe obesity, frequency of victimisation and obesity is not strongly related.

Not all obese children reported overweight-related teasing, and some non-obese children did report it. Therefore, although weight seems to be an important factor it does not provide a full explanation as to why some people are victimised about weight and others are not. It may be that the children who are not victimised have other protective factors such as having high self-esteem or good friends. Having a best friend has been found to reduce the chance of being victimised and can reduce the impact of victimisation experiences (Cowie, 2000; Hodges, Boivin, Vitaro, and Bukowski, 1999).

Association of self-concept and victimisation status

The next section explores hypothesis 2, that overweight-related victimisation was associated with lower self-esteem and increased body dissatisfaction. First the differences between obese children and adolescents attending camp and non-obese comparisons are explored.

Self-concept

Obese children and adolescents attending camp had lower self-concepts than non-obese comparisons in four of the six domains measured: social acceptance, athletic competence, physical appearance and global self-worth. This is comparable to previous research which demonstrates that obese children have lower self-esteem than their non-obese counterparts (Braet, Mervielde, and Vandereycken, 1997;

Strauss, 2000). However the pattern differed slightly from previous research at the camp. Walker et al (2003) found that social competence of obese children and adolescents was comparable to that of non-obese comparisons. This will be discussed later along with other results regarding the social relationships of obese children and adolescents.

The lowest rated domain was physical appearance with a mean score of less than 2, indicating that the campers rated themselves as unattractive. This may reflect the constant messages in the media that 'thin is beautiful', causing children who are obese to view their appearance negatively. Studies have consistently shown that self-evaluation of physical appearance is inextricably linked with global self-esteem (Harter, 1993). Harter suggests the reason for the stronger link compared with self-concept in the other domains is that physical appearance is constantly on display for themselves or others to see, whereas other domains are more context specific. Also, a person has more control over whether, when and how competence in the other domains is displayed. If the child perceives themselves to be unattractive, as excess weight means they do not fit with societal views of what is attractive, they have a constant reminder of their 'failure' in this domain.

The low self-concept regarding athletic ability may reflect actual poor ability. With excess body weight, physical activity is more difficult. Obese children and adolescents may receive criticism and teasing when they attempt physical activity (Faith et al., 2002) which may put them off participating in sports and exercise. A study looking at perceived barriers to physical activity found that overweight children, particularly girls, were more likely to report barriers preventing them from exercising (Zabinski, Saelens, Stein, Hayden-Wade, and Wilfley, 2003). Self-consciousness about their body was reported to be a barrier to exercise by both overweight girls and boys, compared with non-overweight children. Overweight girls were more likely to report social barriers, such as not being picked for teams and being teased during physical activity, as well as resource barriers, such as not being able to access sports facilities, than average weight girls. Thus, obese children

and adolescents are less likely to participate in sport and physical activity restricting opportunities for improvement.

According to James's theory of self-esteem, discussed earlier (James, 1892), self-esteem depends upon both competence in a particular domain, and the importance attributed to this domain. The importance attributed to one domain differed significantly between obese and non-obese children and adolescents, with the obese placing significantly less importance on athletic competence. Obese children and adolescents attending the camp rated this as the least important domain to how they felt about themselves, whereas the non-obese comparisons rated it as one of the most important. The importance of all the other domains to obese and non-obese children and adolescents was comparable. It seems that though obese children and adolescents have lower athletic competence than non-obese children and adolescents, this is not a major contributor to their sense of self-worth.

As hypothesised (hypothesis 2), those obese children attending the camp who were victimised had lower self-concepts than those who were not. There was also an interaction between condition and victimisation status, with the effect being more prominent in obese than non-obese children. Thus, obese campers generally had lower self-concepts than non-obese, and within the campers, those who were victimised reported the lowest self-concepts. Differences between those campers who were victimised and those who were not were seen in social acceptance, athletic competence and global self-esteem, with those who were victimised having lower self-concepts in all these areas. These results were consistent with previous research by Murphy (1999). Although the campers who were not victimised had significantly higher self-concept in social acceptance, athletic competence and global self-esteem, athletic competence and global self-esteem were still considerably lower than non-obese comparisons who were victimised.

There were also differences between bully/victims and those not involved, with bully/victims reporting significantly lower social acceptance, athletic ability, physical appearance esteem and global self-esteem. It is interesting to note that

those who were both perpetrators and victims of weight-related bullying have the lowest global self-concept of all groups. Previous research has indicated that bully/victims have low self-esteem and are more likely to have psychological problems than victims (Kumpulainen et al., 1998). Andreou (2000) found in terms of general bullying and victimisation, bully/victims had the lowest self-concepts of all the sub-groups (victims, bullies, not involved) in all areas of self-concept except athletic competence. Social acceptance was particularly low. This is probably a reflection of the victimisation by their peers, and the fact they victimise others although it is seen as socially unacceptable.

Due to the cross-sectional nature of the research, it is difficult to make firm conclusions about the direction of the relationship. It may be that being a victim of overweight-related teasing and bullying reduces self-esteem. Juvonen, Nishina, and Graham (2000) proposed a model in which self-esteem is lowered as a consequence of children who are victimised blaming themselves for their problems, and believing that they deserve to be victimised. It has been demonstrated that victims who blame themselves and see the victimisation as an internal, stable and uncontrollable cause, are particularly lonely and feel bad about themselves (Graham and Juvenon, 1998). Several models of self-esteem suggest that self-esteem is affected by social relationships or comparisons. Cooley (1902) proposes that self-esteem is a social construction, and that approval or disapproval by others becomes incorporated into an individuals esteem. Thus, victims may see the victimisation as evidence that others disapprove of them, and consequently have lower self-esteem. The sociometer theory of self-esteem suggests that esteem is lowered by criticism or rejection (Leary and Baumeister, 2000), again a frequent occurrence for children and adolescents who are victimised.

Alternatively having low self-esteem may put someone at greater risk of experiencing victimising situations, or being more sensitive to comments if they do occur. Bullies may be more likely to victimise those who already have low self-esteem, as they are easy targets. High self-esteem may be a protective factor against victimisation. It may be that children with low self-esteem are not more frequently

exposed to comments or criticism about their weight than other children, but they are more likely to be upset by it and not see it as a joke. Further longitudinal research may help investigate the nature of the relationship between victimisation and low self-esteem.

Body Dissatisfaction

As would be expected, obese children attending the camp showed much greater levels of body dissatisfaction. The ideal size and shape did not differ between condition reflecting accepted ideas about the 'ideal' figure. Higher levels of dissatisfaction reflected the campers unhappiness with their current size, rather than a striving for a low ideal. The literature has shown an association between high body dissatisfaction and low self-esteem (e.g. Kostanski and Gullone, 1998). If an individual perceives him/herself to be less than ideal compared to societal definitions of attractiveness, they are likely to develop negative attitudes towards the self. It has been proposed that actual body size interacts with a number of other variables, including gender and self-esteem, in predicting body dissatisfaction (Kostanski and Gullone, 1998). Girls tend to be more dissatisfied with their bodies, and as do people with low self-esteem. Body dissatisfaction in obese children and adolescents is of concern because it has been linked with disordered eating habits such as binge eating disorder in overweight people (Fairburn et al., 1998) and depression among adolescent girls (Stice, Hayward, Cameron, Killen, and Taylor, 2000).

Contrary to hypothesis 2, overweight-related victimisation did not affect body dissatisfaction. This is contrary to much research which suggests that overweight-related teasing is linked to lower body satisfaction (e.g. Fabian and Thompson, 1989; Grilo et al., 1994; Myers and Rosen, 1999). However, much of this research used retrospective reports from obese adults. Looking at the levels of body dissatisfaction, it appears that all victimisation groups amongst the campers had high levels of body dissatisfaction. This suggests they were unhappy with their weight regardless of the presence of teasing, perhaps as a result of societal pressures to be

thin. This is contrary to Eisenberg et al (2003) who suggested it was weight-related teasing rather than body shape and size itself which led to dissatisfaction. However the sample in that research included all weight groups. It may be that among normal weight and overweight children and adolescents teasing leads to body dissatisfaction, but in obese children and adolescents it is present regardless of teasing.

Social relationships of obese campers compared with non-obese children and adolescents

Hypothesis 3 stated that the obese campers would report less positive peer relationships and see themselves as less popular than non-obese children and adolescents saw themselves.

Based on the data looking at the quality of same-sex and different sex relationships, the hypothesis that obese campers would report poorer quality relationships than non-obese conparisons was only partially supported, with differences primarily seen in boys. Obese males reported poorer relationships, both in same sex and different sex relationships, than non-obese males. However, contrary to the hypothesis obese girls did not show any differences in their relationships from non-obese comparisons. It has been noted that athletic ability is particularly important in peer relations in boys (LaFontana and Cillessen, 2002). Given that obese boys often do not like, and are not good at, sports, this may contribute to some of the differences seen between boys.

Obese campers reported their same-sex relationships to be more negative than non-obese comparisons, though no difference was seen in their different sex relationships. Again, differences were seen when looking at separate sexes. More obese males reported negative relationships with their same sex peers than non-obese, whereas more obese females reported negative relationships in their different sex relationships.

It is possible that the difficulties obese girls demonstrated in different sex relationships are a function of age, as younger children generally report more

difficult different sex relationships (Bracken and Crain, 1994). However the AIR standardises for age so this is unlikely. Males have been reported to be less accepting of those deemed not to be physically attractive. For example Pearce et al (2002) demonstrated that obese girls were less likely to report that they were dating than normal weight girls, whereas obese boys and normal weight boys reported no differences in their level of dating activity. Peer status was proposed to be linked with dating partner, and boys avoid dating obese girls as they were seen as unattractive, which would therefore lower the boys' status. Girls do not tend to be so concerned with physical appearance in their choice of dating partner. This may be a factor in the poorer relationships reported by obese girls and their male peers.

In the current study, social acceptance was significantly lower in obese campers than non-obese children and adolescents. This differs from the results found by Walker et al (2003), who found no differences. The means for self-concept differed slightly between the two cohorts in all domains except athletic ability being lower for the current cohort. Walker's study did not investigate the number of children who reported being victimised. As discussed earlier, victimisation is associated with lower social self-concept. It may be that there were less victimised children in the previous cohort. As no measures of victimisation were made this is impossible to say. It is possible that being asked about victimisation situations prompted the children to consider their social relationships in a different light, and perceive them more negatively.

Hypothesis 3 stated that obese campers would see themselves as less popular than non-obese comparisons saw themselves was confirmed. The obese campers rated themselves as less popular amongst their peers than non-obese children and adolescents rated themselves. Peer status in children is proposed to have an impact on mental health (Ostberg, 2003). Mead (1934) suggested that an individual's experience of themselves is shaped in part by the attitudes and reactions of the group to which they belong. These attitudes are incorporated into the individual's experience and become the attitude towards the self, and therefore important to self-

image. If the group to which a child belongs has negative attitudes about obesity. this will affect how the child feels about themselves.

The current research looked at how the children perceived their own popularity. i.e their meta-perceptions of popularity. This method was chosen as peer nomination methods, which require peers to rate how much they like others or think they are popular, were not practical in the camp situation where it was a new peer group. There has been a small amount of research on the accuracy of such perceptions. When comparing meta-perceptions of liking and disliking with peers' actual evaluations, moderate levels of accuracy have been found (Bellmore and Cillessen, 2003).

Social relationships and victimisation status

It was hypothesised (hypothesis 4) that children who reported overweight-related victimisation would have less positive peer relationships and perceive themselves to be less popular than those who were not victimised. Significant differences were only seen in terms of perceived popularity, not in quality of peer relationships. Those who identified themselves as being victimised perceived themselves to be less popular than those who were not victimised. Given that they are victimised, this may be a fairly accurate reflection of their popularity. However, it could be that if they believe that they are not popular, then they are more sensitive to and aware of weight criticism. No difference was seen in the quality of same-sex relationships between those who are victimised and those who are not. Victims often report having good friends (Hodges et al., 1999). However, often friendships are with other 'rejected' children, therefore they are not seen as popular. Victims friendships have also been found to be less supportive (Pellegrini, Bartini, and Brooks, 1999) or have more conflict within them (Champion et al., 2003).

Effects of Camp

Hypothesis 5 stated that over the course of camp, there would be improvements in self-esteem and social functioning. The following section explores the changes seen over time spent at camp.

The children all lost weight over the course of camp (mean 6.3kg boys; 6.0kg girls), indicating as in previous research (Walker et al, 2003) that the camp is an effective means of weight reduction for children and adolescents. As hypothesised (hypothesis 5), improvements in self-esteem were seen. Consistent with previous research, athletic competence, physical appearance and global self-concept all improved over their time at camp. The importance of domains did not change significantly over the time spent at camp, suggesting that camp does not inflate or reduce the value placed upon specific areas of competence.

Improvements in physical appearance concept were positively correlated with the amount of weight lost. It is possible that as weight decreases, campers become happier with their physical appearance. Another possible explanation is that the children become more accepting of they way they look, perhaps as a consequence of spending time amongst peers of a similar weight, in a non-stigmatising environment.

The increase in athletic competence following camp may reflect an actual increase in ability following the opportunity to try new activities in a less threatening environment, as the camp gave the opportunity to try sports and activities which previously may not have been so accessible or had been avoided. Before attending camp, many of the children may have been deterred from participating in sports and physical activity because of embarrassment, discomfort about wearing sports kit and poor performance. This would compound their dislike and ineptitude at sports. Camp gave the opportunity to increase confidence in their ability, which could have an impact on psychological functioning. Sports participation has been proposed as a protective factor against low self-esteem in adolescence. Likewise, physical appearance esteem, which is the most reliable predictor of global self-esteem, may be enhanced through sports participation. Increased levels of participation in sport

have been found to be associated with significantly more friendship nominations amongst both overweight and normal weight adolescents (Strauss and Pollack. 2003). The effect was strongest among normal weight children, but overweight children who participated in sports five times a week had the same number of friendship nominations as normal weight children. Thus participation in exercise seems to reduce the stigmatising effect of excess weight.

The rise in global self-esteem may be a reflection of the increase in other domains. It may be particularly linked to the increase in physical appearance self-concept, as this has been demonstrated to be strongly linked to global self-esteem from adolescence onwards (Harter, 1993). It may also reflect the camper's positive experience at the camp, of being accepted by and spending time with other children who were obese.

However, the improvements in self-concept did not bring them up to the same level as non-obese children and adolescents. Thus, although significant improvements were made over the time at camp, this was not enough to rehabilitate self-concept to the level of non-obese children and adolescents. The mean physical appearance scores were still below 2 at the end of camp for both boys and girls, indicating very poor self-esteem regarding appearance.

Looking at the changes in self-concept of girls and boys separately, boys did not appear to make any significant improvement in self-concept over camp, whereas girls showed increases in athletic competence, physical appearance and global self-concept. Girls scored lower than boys on these at the beginning of camp, consistent with previous research indicating girls generally have lower self-esteem than boys (Muris, Meesters, and Fijen, 2003). Thus, the improvements brought them up to a level comparable with the boys.

Changes in BMI, athletic competence, physical appearance and global self-esteem were all related to the length of stay at camp, with those staying longer showing greater weight loss and gains in self-concept. Partial correlations suggest that

weight loss was a significant factor in the improvements in self-concept, with those losing the most weight showing the greatest improvements in self-concept.

Changes in social relationships over camp

Whilst 22.5% of campers reported improvements in the quality of same sex relationships over the course of camp, and 22.9% showed an improvement in the quality of different sex relationships, there was also quite a large proportion reporting a deterioration in the quality of their peer relationships (18.3% in same sex relationships, 15.3% in different sex relationships). Thus, although for some children relationships did improve, hypothesis 5, that following camp there would be improvements in social functioning was only partially supported.

Looking at the campers' perception of their own popularity, they perceived themselves to be significantly less popular than the non-obese comparisons perceived themselves. This difference was evident for both males and females. Overall, as hypothesised, there was a significant improvement in the camper's perception of their popularity over the course of camp. 50% of campers rated their popularity to be higher at the end of camp than at the beginning. However, 23.5% rated their popularity as lower.

Thus, whilst no significant change was seen in the quality of relationships during camp, there was a significant improvement in perception of popularity. The reason for this discrepancy may be due to the nature of the assessments used. The AIR asks about peer relationships in general. At the start of camp children would have considered their relationships back at home and at school. At the end they may still have been considering their peers at school, as well as those at camp, and relationships with peers at school would not have changed over the course of summer. The ladder assessed popularity at school at the start of camp, but more specifically asked about popularity at camp. Camp would be a separate social hierarchy for the campers, and thus they may have seen themselves as more popular. It would be interesting to conduct a follow-up, assessing their perceptions of popularity and relationships once they had returned to school.

Identification of low self-concept, victimisation experiences and problems in social functioning by staff

Ratings of the campers and staff at the end of camp were significantly correlated on measures of social acceptance, athletic ability and behavioural conduct, suggesting that for the most part they were able to identify the campers self-concept in specific areas. However, they were not correlated on the measure of physical appearance esteem. Teachers rated the campers' appearance as more attractive than the campers rated themselves. This could reflect the fact that campers underestimated their physical attractiveness. However it may be the result of reluctance on the part of the staff to fill in the items on physical appearance, many of which were left blank. This was a problem also encountered by Lindsay, Dockrell, Letchford, and Mackie (2002) using the same questionnaire.

Contrary to hypothesis 6, it appeared that staff were not always able to identify if children experienced weight-related victimisation. None of the bullying or victimisation categories showed correlations between staff and campers ratings. There were a number of children who reported being victimised who the staff did not identify as being victimised. This may be because the victimisation which the campers reported occurred at school or home, therefore the staff may not be aware of this. However if the staff were unaware of victimisation which occurred at camp, this is more concerning and has implications for implementation of anti-bullying strategies.

Staff also rated the social skills of the children whilst at camp. 22.2% of children and adolescents were identified as demonstrating poorer assertiveness skills (i.e. poor skills in initiating conversations with peers, difficulty making friends) and 30.8% demonstrated poorer self-control skills (i.e. difficulty controlling temper, responding inappropriately to provocation) than average. There were also 26.4% of campers who were reported to demonstrate more internalising (anxiety, sadness, loneliness or poor self-esteem) and 15.1% who showed more externalising problems (verbal and physical aggression towards others, poor control of temper and arguing)

than average. Thus, the hypothesis that staff would identify problems in social functioning was supported.

Campers who reported being victimised about their weight were identified by the staff as displaying more internalising or externalising problems than those who were not victimised. Other research has shown that those who are victimised are more likely to display internalising behaviour (Kumpulainen et al., 1998), and peer rejection has been consistently linked to aggressive and non-aggressive behavioural problems (Deater-Deckard, 2001).

Again the direction of this association is unclear. Being victimised may lead to the development of internalising or externalising problems. Alternatively, internalising problems may make the individual more vulnerable to peer victimisation as they are seen as an easy target (Olweus, 1993). Externalising problems may also increase the chances of victimisation as the aggressor may enjoy provoking a reaction. Children with externalising problems may find it difficult to gain acceptance from their peers and the behaviour problems may be maintained or exacerbated as a result of rejection.

The results from the staff data should be interpreted with caution, as each child was rated by a single staff member. Different staff members rated the children, selected as someone who had spent a considerable amount of time with the child. Individuals may have rated items according to different criteria based on personal opinions. Ideally more members of staff would have completed the questionnaires to obtain more reliable results but this was not possible due to demands on staff time.

Clinical implications

The current study supports the growing data on the psychological consequences of obesity in children and adolescents. This demonstrates the importance of developing

good weight prevention and weight loss programmes, which take into account the child's psychological as well as physical health.

Evidence from the current and previous research, indicates that the camp was effective at producing weight reduction, and as yet unpublished research indicates that these reductions are maintained at follow up (Walker, 2001). Though the camp primarily aims to improve physical activity levels, it seems that psychological change does occur. This therefore should be a consideration in developing the programme.

In response to previous research, discussion groups at camp have been set up in order to enhance campers' problem solving abilities, covering issues such as bullying, cultural pressures and media images, and choices in activity and exercise.

At camp, children are somewhat protected from the realities of everyday life. For example, appropriate meals are cooked, there is no easy access to unhealthy food, activity is organised, facilities are available and staff and peers can provide support. All the children at camp are overweight or obese so the environment is less stigmatising. Children are together all the time, so peer support is easily available. Difficulties may occur when the child moves back to their home environment, an environment which contributed to their weight gain. Future problems are discussed whilst at the camp, thinking of ways to cope with potential obstacles. Further support once camp has finished would be ideal. Currently there are follow-up clinics and correspondence after camp, but clinics may not be easily accessible to all children. This highlights a need for more local resources around the country.

Involvement of parents may make the transition easier. However not all parents attended the seminars or parents' weekend. The role of the family is crucial when considering weight management in children and adolescents. Golan and Crow (2004) reviewed the role of parents in interventions aimed at preventing or treating overweight and obesity. They suggested that parents could influence children's dietary practices, physical activity, sedentary habits and body dissatisfaction by controlling the availability and accessibility of food, meal structure, food

socialisation practices and food related parenting styles. The importance of parental knowledge about food was demonstrated. The obesegenic factors in a child's environment and the key role parents have in the child's exposure to the factors which foster energy imbalance, particularly for younger children, suggest that the most effective interventions for weight management in children involve parents and family members (e.g. Epstein, Valoski, and Wing, 1994; Epstein, Wing, and Koeske, 1984). The usefulness of parental involvement may depend on the child's developmental stage. Evidence suggests that in younger children, parental involvement has promoted children's weight loss, whereas results from studies with adolescents are more mixed. As children grow older they become more autonomous and less subject to parental influence. Thus in the campers, with an age range of 10 to18 years, some parents may still have a large influence on their child's diet and activity levels, other less so.

The current research provides additional support to the existing evidence that a residential weight-loss camp is not only effective in terms of weight-loss, but also provides psychological benefit. Yet at the moment this resource is difficult to access. There is only one such camp in the UK and it is currently self-funded for the main part, restricting access to those children whose parents can afford the fees. The health select committee report (Health Select Committee, 2004) called on the NHS to make obesity services more of a priority and to ensure that obese children have access to specialist care. They recommended that the Government provide funding for the large scale expansion of obesity services in secondary care. If there were more funding available from the government for weight loss camps, this would allow access to more children.

Interventions targeted at weight-related victimisation

The current research suggests that nearly half of campers have been victimised about their weight, and that this is associated with low self-esteem. Consequently, this would be a good focus for intervention.

Victimisation could be reduced by either attempting to prevent the victimisation in the first place, or by helping the child to become less vulnerable to it. Targeting specific individuals is difficult as a large proportion of children do not report incidents of victimisation (Smith and Shu, 2001). Peer support can be used as an intervention, giving young people skills to provide basic counselling and using a problem solving approach to interpersonal difficulties. Teachers/staff can provide a supportive environment in which to use these skills and provide strategies to help the victim find their own solution (Cowie, 2000).

A possible form of intervention is education about the effects of victimisation. People may believe that criticism and teasing provides motivation for the child to diet, and not be aware of the harmful effects of remarks, which may not be intended to be derogatory. Victimisation comes from families as well as peers. Education of parents, teachers and peers about the effect of the teasing may help to reduce this. It may also be useful to identify the types of comments perceived to be hurtful. Education of teachers as part of their training may also be helpful. The belief that bullying is a part of normal development is sometimes held. This could be dispelled by education about the damaging effects of teasing and victimisation. As discussed earlier, obesity discrimination is seen by some to be acceptable. If teachers hold these views, they will do little to intervene in over-weight related victimisation, and may even be the perpetrators of it. A first step may be to raise awareness in teachers and parents who are in a position to reduce it.

Unfortunately it is unlikely that overweight related victimisation will stop completely whilst obesity is so stigmatised. Changes are required at a societal level

which make overweight more acceptable. Whilst there are some moves to do this by organisations such as the National Association to Advance Fat Acceptance. as yet it seems to have had little impact.

It is possible that teaching children coping strategies and social skills may reduce the amount or effect of victimisation. A difficulty in teaching coping strategies is that the effectiveness may depend on gender, age and type of victimisation. Research on which strategies are effective is limited at this time. Smith, Shu, and Madsen (2001) suggest that the apparent reduction in self-reported bullying seen as children get older may be due to the development of more effective strategies used by older children as they learn from experience. Girls tend to use the seeking of social support and internalising more, whereas boys externalise more. Whilst social support may work with girls, it is seen as less acceptable among boys, and may result in further victimisation. Social support and distancing are used less as children grow older (Kristensen and Smith, 2003). Different strategies may be appropriate for different types of victimisation. For example, whilst a strategy such as problem-solving may be useful for infrequent victimisation, when victimisation is more frequent and less controllable or more difficult for the child to change by themselves this approach may decrease self-esteem. (Scrambler et al., 1998) identified that children felt a humorous response was the most effective way to deal with teasing. Although humour is difficult to teach, if it is aimed at weight-related teasing, where the focus of teasing remains the same, it may be possible for camp staff, teachers, parents and supportive peers to assist in coming up with humorous and adaptive responses to the teasing.

Children and young people identified friendships, avoidance strategies and standing up for themselves to be the most effective ways of dealing with victimisation (Oliver and Candappa, 2003). Two of these, friendships and standing up for yourself, might be helped by social skills training. Interventions which enhance social competence, social skills and the quality of relationships may help increase self-esteem and ability to cope with, or prevent, victimisation. This research found that those who are

victimised have more social skills deficits, therefore social skills training may equip them better to deal with the bullies themselves.

Social skills training has been seen as a way to effectively help children to interact positively with peers and enhance self-esteem. Components of social skills training programmes include the following:

- Behavioural social skills training, involving instruction, discussion, modelling, role-play, rehearsal and feedback to enhance appropriate response strategies.
- Social perception skills training aimed to correct interpretation of social cues from others.
- Self-instructional and self-regulational techniques including self-monitoring and self-reinforcement.
- Social problem solving including problem identification, generation of alternative solutions, prediction of consequences and selecting and planning appropriate responses.

Other approaches have included relaxation training and cognitive restructuring (Spence, 2003).

Reviews of effectiveness of such treatments offer equivocal results, depending on type and length of intervention and presenting problem of the child. Children with internalising problems or externalising problems did moderately well (Spence, 2003). Tierney and Dowd (2000) set up a six-week social skills group for girls with emotional difficulties including low self-esteem, few friends and victims of bullying. Though they used no standardised measures and the sample was small, results suggested that girls felt happier following the group. Carnegie International Camp may be able to incorporate some elements of this social skills training into the lifestyle discussion groups. Some members of camp staff could be given training about running such groups. All staff should be made aware of the association of obesity, self-concept and victimisation.

Limitations

The data were collected in classrooms with up to 10 children in them. This means there were some distractions, such as noise. An effort was made to separate the children as much as possible to ensure privacy but it is possible that there were still concerns about others seeing their results and a reluctance to ask for clarification. The practicalities of camp, with the children already having a full timetable, meant that this was the most efficient method of data collection.

The research relied mainly on self-report data. Self-report of victimisation alongside self-report of self-esteem means that there could be an effect of shared method variance so that those who have low self-concept may be more likely to notice victimisation and negative events than those with high self-concept. There is also the possibility of underreporting of bullying and victimisation. It has been demonstrated that children tend to be reluctant to admit to bullying behaviour, and they also may not wish to admit to being a victim (Rivers and Smith, 1994). Austin and Joseph (1996) point out that making the issue of bullying or victimisation explicit to children as the purpose of research may affect their response as they may feel a pressure not to disclose any incidents. This led to the extension of the SPPC with the peer victimisation scale (PVS) embedded within it. This attempts to reduce the salience of items concerning victimisation. It is therefore hoped that the methodology used detected most incidents of bullying and victimisation. However, quite low numbers of bullies were identified within this group. This could be an accurate reflection, or due to underreporting.

The measure assessed overt victimisation rather than relational. However, as previously reported much of the victimisation experienced by girls may be relational. Obese girls report more relational victimisation than average (Pearce et al, 2002). This may involve using their friendship status to inflict social harm, such as excluding a child from activities because of their weight. It has been demonstrated that relational victimisation is associated with psychological adjustment problems and provides unique information not accounted for by overt aggression and

victimisation (Crick, 1995). It would be useful to assess the prevalence of weight-related relational victimisation in future studies.

The sample of obese children and adolescents used in the research may not be representative of all obese children and adolescents. This is a sample who are presenting for treatment, indicating that they or their family are unhappy with their weight. It may be that these children are more likely to be adversely effected by being obese. Ideally, a matched control group of obese children and adolescents not attending any weight management programme or attempting to lose weight would be used to assess the impact of camp.

Due to the nature of the camp, which is self-funded for the main part, the majority of children are likely to come from higher socio-economic classes. The camp is now accepting more NHS or Social Services referrals, but there are not yet enough to enable a comparison of characteristics of the two groups. Though the children were primarily white there were some children of ethic minority groups and this is not accounted for in the analysis. Again, there were too few to allow a valid analysis. However there may be differences. There may be different responses to obesity in different cultures. For example, African-Americans find a larger body size more acceptable (Wilson, Sargent, and Dias, 1994).

The comparison group may not be truly representative of adolescents. Those who took part in the study were primarily those interested in health and fitness. The opportunity to for measures of fitness was used as an incentive encourage the children to attend, and this was of particular interest to those involved in sports. As athletic ability has been linked to increased popularity, particularly in boys (LaFontana and Cillessen, 2002), the comparison group may have been among the more popular in their classes.

Not all the children who attended the camp completed the psychological assessments. This was for various reasons such as learning difficulties or electing not to complete the questionnaires. No data were available for these campers. Some campers who completed the data at the beginning of camp did not complete it at the

end. It is possible this skewed the results as these may have been children who did not have such a positive experience of camp. However, attrition rates were low and analysis revealed no differences in age, sex or BMI sds at the start and end of camp between those who completed all data and those who dropped out.

Recommendations for future research

More long-term follow up is required. A weight management programme is only truly effective if weight losses are maintained. Six-month follow-up suggests that weight-losses are maintained at this point (Walker, 2001). If changes are related to weight loss, it would be interesting to see what happens if weight is regained – are the psychological benefits then still maintained, do they return to pre-intervention levels or even decline further due to feelings of failure?

It would also be useful to follow-up the data on social relationships. Although some changes were seen over the course of camp, this was whilst the child was still at camp. Are these changes maintained once the child is back at school? Has camp built up their confidence enough to change relationships at home, or do they deteriorate when back at school?

Previous attempts at follow up by the camp have seen a relatively low response rate, rarely better than 50%. This should be addressed, perhaps by offering the children incentives to return the questionnaires.

Though the research suggests an association between obesity, overweight-related victimisation and self-esteem, there still remain questions about the direction of the association. Further research may help shed some light on remaining questions such as which children are victimised and which are not. Where is the bullying taking place and by who? This research focuses on peers, but the family can also be as source of weight-related teasing. Longitudinal research may help untangle the question of causality by answering questions about whether a child has low self-

esteem and is consequently at greater risk for victimisation or whether being victimised leads to low self-esteem. This may also help identify protective and vulnerability factors.

Summary

The research demonstrated that, as hypothesised, there was a much greater prevalence of overweight-related victimisation in obese children and adolescents who attended the camp than in a non-obese control group. Overweight-related victimisation was associated with lower self-concept in terms of social acceptance, athletic ability, physical appearance and global self-concept. Thus, the obese campers had lower self-concepts than the non-obese comparison group, and obese campers who were victimised had lower self-concepts than those who were not victimised. Contrary to the hypothesis however, those obese campers who were victimised did not have greater body dissatisfaction than those who were not victimised.

Differences were seen in social functioning when comparing obese campers and non-obese comparisons, supporting the hypothesis. Obese males reported poorer peer relations than non-obese. Obese campers were more likely to report poor quality peer relationships. Obese campers also perceived themselves to be less popular amongst their peers than non-obese comparisons. Those who were victimised were perceived themselves to be less popular than those who were not victimised.

As hypothesised, changes were seen over the course of camp in several domains of self-concept. Self-concept improved in the domains of athletic ability, physical appearance and global self-esteem. Aspects of social functioning also improved. with the obese campers perceiving themselves to be more popular following camp.

Data from staff confirmed campers self-reported low self-esteem and also identified difficulties with social skills in many campers. Identification of victimisation status differed between the self-report of campers and staff reports.

The research highlights the importance of considering psychological and social issues when considering the impact of obesity and weight-management programmes. The research suggests that overweight-related victimisation is detrimental to the self-esteem of obese campers, and low self-esteem is in turn associated with an increased risk of other psychological health problems such as anxiety and depression. Steps need to be taken to reduce the stigma associated with obesity and to reduce levels of overweight-related victimisation.

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APPENDICES

Appendix 1 – Self-Perception Profile For Children

WHAT I AM LIKE

Name _____

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
	☐	☐	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch TV.	☐	☐
1	☐	☐	Some kids feel that they are very *good* at their school work	**BUT**	Other kids *worry* about whether they can do the school work set for them.	☐	☐
2	☐	☐	Some kids find it *hard* to make friends	**BUT**	Other kids find it's pretty *easy* to make friends.	☐	☐
3	☐	☐	Some kids are *often* teased by other kids	**BUT**	Other kids are *not* teased by other kids.	☐	☐
4	☐	☐	Some kids do very *well* at all kinds of sports	**BUT**	Other kids *don't* feel that they are very good when it comes to sports.	☐	☐
5	☐	☐	Some kids are *happy* with the way they look	**BUT**	Other kids are *not* happy with the way they look.	☐	☐
6	☐	☐	Some kids often do *not* like the way they *behave*	**BUT**	Other kids usually *like* the way they behave.	☐	☐
7	☐	☐	Some kids do *not* tease other kids	**BUT**	Other kids *often* tease other kids.	☐	☐
8	☐	☐	Some kids are often *unhappy* with themselves	**BUT**	Other kids are pretty *pleased* with themselves	☐	☐
9	☐	☐	Some kids feel like they are *just as clever* as other kids their age	**BUT**	Other kids aren't so sure and *wonder* if they are as clever.	☐	☐

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
10	☐	☐	Some kids have *a lot* of friends	**BUT**	Other kids *don't* have very many friends.	☐	☐
11	☐	☐	Some kids are *not* bullied at school	**BUT**	Other kids are *often* bullied by other kids.	☐	☐
12	☐	☐	Some kids with they could be a lot *better* at sports	**BUT**	Other kids feel they are *good enough* at sports.	☐	☐
13	☐	☐	Some kids are *happy* with their height and weight	**BUT**	Other kids wish their height and weight were *different*.	☐	☐
14	☐	☐	Some kids usually do the *right* thing	**BUT**	Other kids often *don't* do the right thing.	☐	☐
15	☐	☐	Some kids often bully other kids	**BUT**	Other kids *do not* bully others.	☐	☐
16	☐	☐	Some kids *don't* like the way they are leading their life	**BUT**	Other kids *do* like the way they are leading their life.	☐	☐
17	☐	☐	Some kids are pretty *slow* in finishing their school work	**BUT**	Other kids can do their school work *quickly*.	☐	☐
18	☐	☐	Some kids would like to have a lot *more* friends	**BUT**	Other kids have *as many* friends as they want.	☐	☐
19	☐	☐	Some kids are *often* called horrible names by other kids	**BUT**	Other kids are *not* called horrible names.	☐	☐
20	☐	☐	Some kids think they could *do well* at just about any new sports activity they haven't tried before	**BUT**	Other kids are afraid they might *not* do well at sports they haven't even tried.	☐	☐
21	☐	☐	Some kids wish their body was *different*	**BUT**	Other kids *like* their body the way it is.	☐	☐

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
22	☐	☐	Some kids usually act the way they know they are *supposed* to	**BUT**	Other kids often *don't* act the way they are supposed to.	☐	☐
23	☐	☐	Some kids *do not* call other kids horrible names	**BUT**	Other kids *often* call other kids horrible names.	☐	☐
24	☐	☐	Some kids are *happy* with themselves as a person	**BUT**	Other kids are often *not* happy with themselves.	☐	☐
25	☐	☐	Some kids often *forget* what they learn	**BUT**	Other kids can remember things *easily*.	☐	☐
26	☐	☐	Some kids are always doing things with *a lot* of kids	**BUT**	Other kids usually do things *by themselves*.	☐	☐
27	☐	☐	Some kids are *not* teased about being fat	**BUT**	Other kids are *often* teased about being fat.	☐	☐
28	☐	☐	Some kids feel that they are *better* than others their age at sports	**BUT**	Other kids *don't* feel they can play as well.	☐	☐
29	☐	☐	Some kids wish their physical appearance (how they look) was *different*	**BUT**	Other kids *like* their physical appearance the way it is.	☐	☐
30	☐	☐	Some kids usually get in *trouble* because of things they do	**BUT**	Other kids usually *don't* do things that get them in trouble.	☐	☐
31	☐	☐	Some kids *often* tease other kids about being fat	**BUT**	Other kids *don't* tease kids about being fat.	☐	☐
32	☐	☐	Some kids *like* the kind of person they are	**BUT**	Other kids often wish they were someone else.	☐	☐

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
33	☐	☐	Some kids do *very well* at their classwork	**BUT**	Other kids *don't* do very well at their classwork.	☐	☐
34	☐	☐	Some kids wish that *more* people their age liked them	**BUT**	Other kids feel that most people their age *do* like them.	☐	☐
35	☐	☐	Some kids are *often* bullied for being fat	**BUT**	Other kids are *not* bullied for being fat.	☐	☐
36	☐	☐	In games and sports some kids usually *watch* instead of play	**BUT**	Other kids usually *play* rather than just watch.	☐	☐
37	☐	☐	Some kids wish something about their face or hair looked *different*	**BUT**	Other kids *like* their face and hair the way they are.	☐	☐
38	☐	☐	Some kids do things they know they *shouldn't* do	**BUT**	Other kids *hardly ever* do things they know they shouldn't do.	☐	☐
39	☐	☐	Some kids *do not* bully other kids for being fat	**BUT**	Other kids *often* bully others for being fat.	☐	☐
40	☐	☐	Some kids are very *happy* with the way they are	**BUT**	Other kids wish they were *different*.	☐	☐
41	☐	☐	Some kids have *trouble* working out the answers in school	**BUT**	Other kids almost *always* can work out the answers.	☐	☐
42	☐	☐	Some kids are *popular* with others their age	**BUT**	Other kids are *not* very popular.	☐	☐
43	☐	☐	Some kids are *not* called horrible names for being fat	**BUT**	Other kids are *often* called horrible names for being fat.	☐	☐
44	☐	☐	Some kids *don't* do well at new outdoor games	**BUT**	Other kids are *good* at new games straight away.	☐	☐

	Really True For Me	Sort of True For Me				Sort of True For Me	Really True For Me
45	☐	☐	Some kids think that they *are* good looking	**BUT**	Other kids think that they are *not* very good looking.	☐	☐
46	☐	☐	Some kids behave themselves *very well*	**BUT**	Other kids often find it *hard* to behave themselves.	☐	☐
47	☐	☐	Some kids *often* call other kids horrible names for being fat	**BUT**	Other kids *do not* call others names for being fat.	☐	☐
48	☐	☐	Some kids are *not* very happy with the way they do a lot of things	**BUT**	Other kids think the way they do things is *fine*.	☐	☐

Appendix 2 – Harter Teacher Rating Scale

Child's Name _____

For each child, please indicate what you feel to be his/her actual competence on each question, in your opinion. First decide what kind of child he or she is like, the one described on the left or right, and then indicate whether this is just sort of true or really true for that individual. Thus, for each item, check one of four boxes.

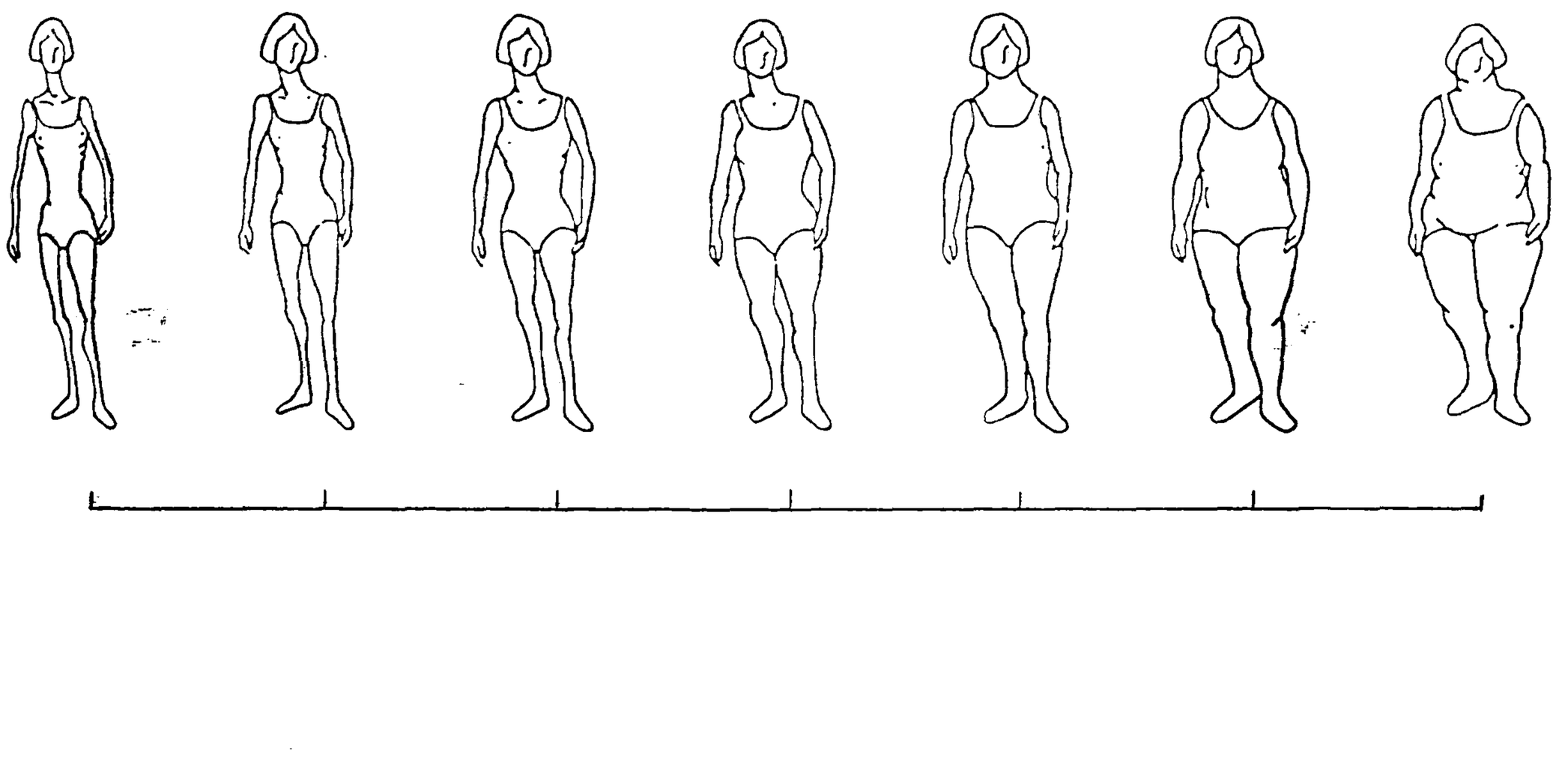
	Really True	Sort of True				Sort of True	Really True
1	☐	☐	This child is often teased or bullied by other children	OR	This child is not teased or bullied by other children.	☐	☐
2	☐	☐	This child finds it hard to make friends	OR	For this child it's pretty easy.	☐	☐
3	☐	☐	This child does really well at all kinds of sports	OR	This child isn't very good when it comes to sports.	☐	☐
4	☐	☐	This child is good looking	OR	This child is not very good looking.	☐	☐
5	☐	☐	This child is usually well-behaved	OR	This child is often not well-behaved.	☐	☐
6	☐	☐	This child often teases or bullies other children	OR	This child does not tease or bully other children	☐	☐
7	☐	☐	This child has a lot of friends	OR	This child doesn't have many friends.	☐	☐
8	☐	☐	This child is better than others his/her age at sports	OR	This child can't play as well.	☐	☐
9	☐	☐	This child has a nice physical appearance	OR	This child doesn't have such a nice physical appearance.	☐	☐

10	☐	☐	This child usually acts appropriately	**OR**	This child would be better if s/he acted differently.	☐	☐
11	☐	☐	This child is not teased or bullied about being fat	**OR**	This child is often teased or bullied about being fat	☐	☐
12	☐	☐	This child is popular with others his/her own age	**OR**	This child is not very popular.	☐	☐
13	☐	☐	This child doesn't do well at new outdoor games	**OR**	This child is good at new games straight away.	☐	☐
14	☐	☐	This child isn't very good looking	**OR**	This child is pretty good looking.	☐	☐
15	☐	☐	This child often teases or bullies other children for being fat	**OR**	This child does not tease or bully other children for being fat	☐	☐
16	☐	☐	This child often gets in trouble because of things he/she does	**OR**	This child usually doesn't do things that get him/her in trouble.	☐	☐

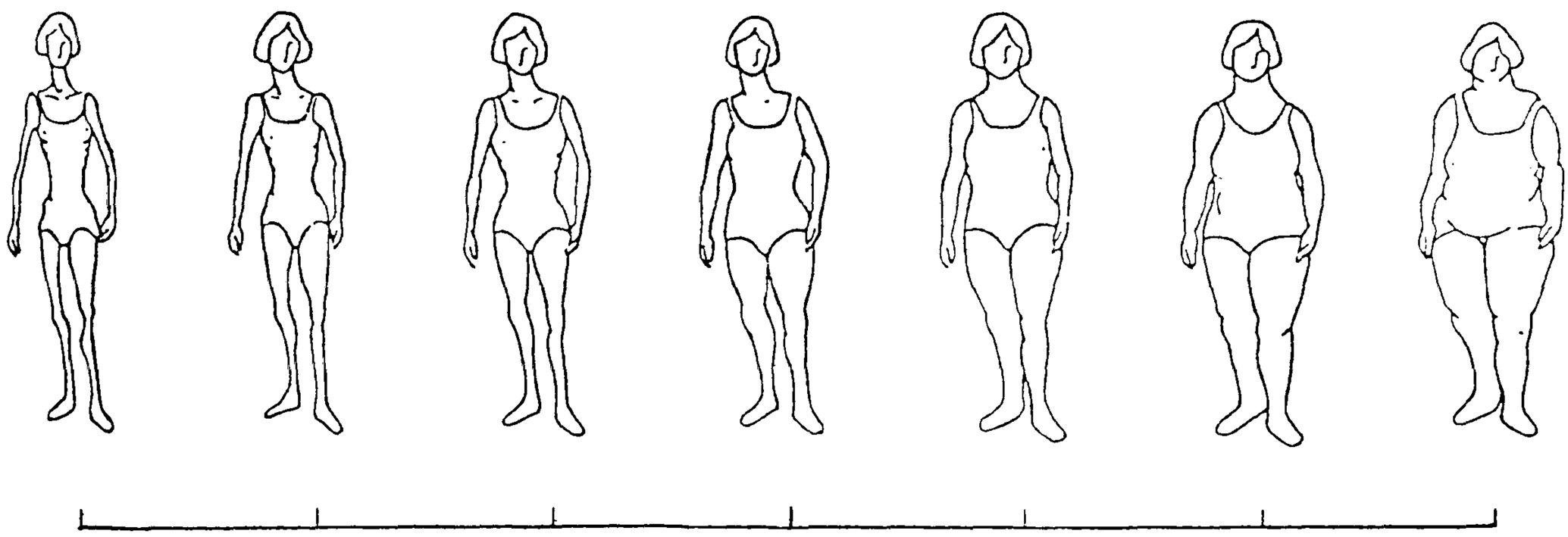
NAME: DATE:

Appendix 3 - Body Shape Preference

1. Which point on the scale is most like you now?



2. Which point on the scale would you most like to look like?

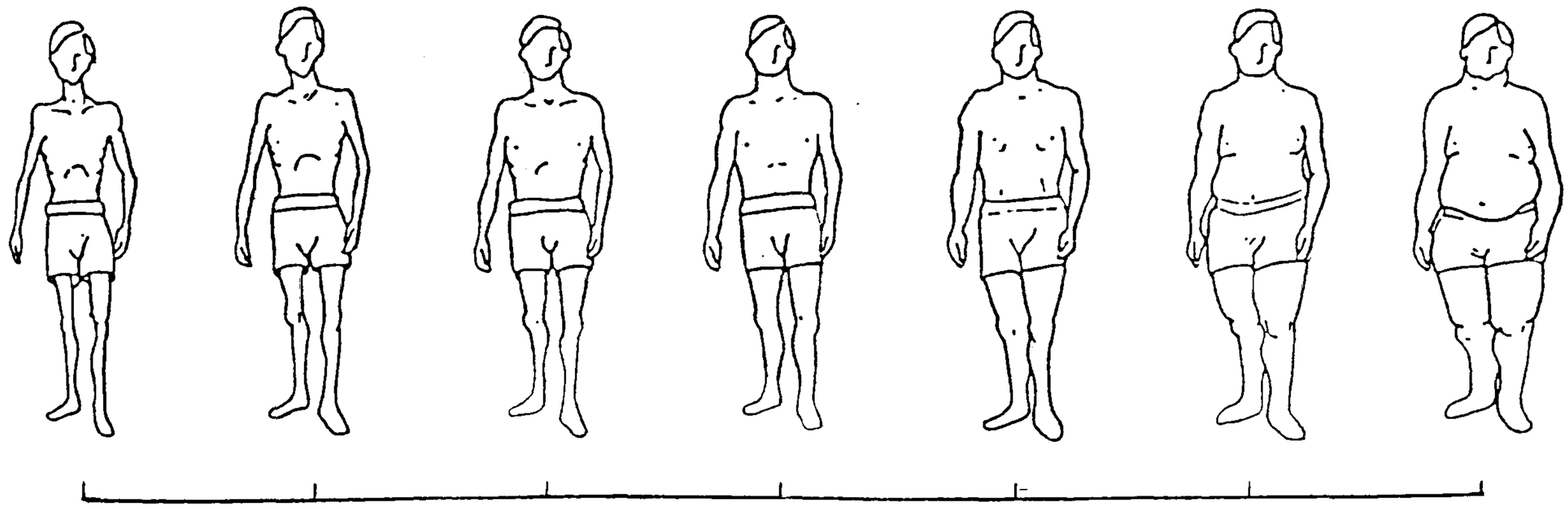


NAME:

DATE:

1. Which point on the scale is most like you now?

2. Which point on the scale would you most like to look like?



Appendix 4 – Assessment Of Interpersonal Relations (AIR)

Assessment of Interpersonal Relations

Record Form

Name: _____

Sex: ☐ male ☐ female

Date of birth: _____

Date today: _____

Instructions

Please rate the following statements according to how much they apply to boys of around your age (male peers) and to girls of around your age (female peers). Please rate each statement according to how you *honestly* feel. There are no right or wrong answers, so be sure to be honest with yourself as you rate each statement.

Each statement should be rated as:

Strongly agree (SA)	**Agree (A)**	**Disagree (D)**	**Strongly disagree (SD)**

Please circle the appropriate answer according to how you feel.

For example:

	Strongly agree (SA)	**Agree (A)**	**Disagree (D)**	**Strongly disagree (SD)**
I argue a lot with my female peers	SA	A	Ⓓ	SD

In the above example, the person does not argue a lot with other girls of around their age, so disagrees with the statement, and circles D for disagree.

Please turn over the page and rate **all** the statements, without missing any out. Please rate the answers for **both** male peers and female peers.

My relationship with boys of around my age (male peers).

	Strongly agree (SA)	Agree (A)	Disagree (D)	Strongly disagree (SD)
1. I am really understood by my male peers.	SA	A	D	SD
2. I like to spend time with my male peers.	SA	A	D	SD
3. If I was bothered by a friends behaviour, I would tell my male peers.	SA	A	D	SD
4. I am treated fairly by my male peers.	SA	A	D	SD
5. I feel I am being used by my male peers.	SA	A	D	SD
6. When I buy things, I value the opinion of my male peers.	SA	A	D	SD
7. If I was worried about a friend doing drugs, I would talk to my male peers.	SA	A	D	SD
8. When I am lonely, I seek the company of my male peers.	SA	A	D	SD
9. I feel trust and stability in my relationship with my male peers.	SA	A	D	SD
10. My relationship is stressful with my male peers.	SA	A	D	SD
11. I am depended on heavily by my male peers.	SA	A	D	SD
12. I can express my true feelings when I am with my male peers.	SA	A	D	SD
13. My happiness is affected by my male peers.	SA	A	D	SD
14. It is important to me that I am accepted by my male peers.	SA	A	D	SD
15. It is difficult for me to be myself when I am around my male peers.	SA	A	D	SD
16. My personal values are like those of my male peers.	SA	A	D	SD
17. When I am feeling good, I like to be around my male peers.	SA	A	D	SD
18. I feel comfortable around my male peers.	SA	A	D	SD
19. If I had questions about sex, I would ask my male peers.	SA	A	D	SD
20. It is not easy to be honest with my male peers.	SA	A	D	SD
21. I am accepted totally by my male peers.	SA	A	D	SD
22. I am motivated to do my best for my male peers.	SA	A	D	SD
23. I am influenced most by my male peers.	SA	A	D	SD
24. When I am in trouble, I talk to my male peers.	SA	A	D	SD
25. I argue a lot with my male peers.	SA	A	D	SD
26. I am really cared about by my male peers.	SA	A	D	SD
27. I enjoy talking with my male peers.	SA	A	D	SD
28. I respect my male peers.	SA	A	D	SD
29. When I have concerns about my future, I talk to my male peers.	SA	A	D	SD
30. I am criticised most by my male peers.	SA	A	D	SD
31. I want to be like my male peers.	SA	A	D	SD
32. I feel bad when things are not going well for my male peers.	SA	A	D	SD
33. I trust the motives of my male peers.	SA	A	D	SD
34. I feel I can tell secrets to my male peers.	SA	A	D	SD
35. I frequently am disappointed by my male peers.	SA	A	D	SD

My relationship with girls of around my own age (female peers).

	Strongly agree (SA)	Agree (A)	Dis-agree (D)	Strongly disagree (SD)
1. I am really understood by my female peers.	SA	A	D	SD
2. I like to spend time with my female peers.	SA	A	D	SD
3. If I was bothered by a friends behaviour, I would tell my female peers.	SA	A	D	SD
4. I am treated fairly by my female peers.	SA	A	D	SD
5. I feel I am being used by my female peers.	SA	A	D	SD
6. When I buy things, I value the opinion of my female peers.	SA	A	D	SD
7. If I was worried about a friend doing drugs, I would talk to my female peers.	SA	A	D	SD
8. When I am lonely, I seek the company of my female peers.	SA	A	D	SD
9. I feel trust and stability in my relationship with my female peers.	SA	A	D	SD
10. My relationship is stressful with my female peers.	SA	A	D	SD
11. I am depended on heavily by my female peers.	SA	A	D	SD
12. I can express my true feelings when I am with my female peers.	SA	A	D	SD
13. My happiness is affected by my female peers.	SA	A	D	SD
14. It is important to me that I am accepted by my female peers.	SA	A	D	SD
15. It is difficult for me to be myself when I am around my female peers.	SA	A	D	SD
16. My personal values are like those of my female peers.	SA	A	D	SD
17. When I am feeling good, I like to be around my female peers.	SA	A	D	SD
18. I feel comfortable around my female peers.	SA	A	D	SD
19. If I had questions about sex, I would ask my female peers.	SA	A	D	SD
20. It is not easy to be honest with my female peers.	SA	A	D	SD
21. I am accepted totally by my female peers.	SA	A	D	SD
22. I am motivated to do my best for my female peers.	SA	A	D	SD
23. I am influenced most by my female peers.	SA	A	D	SD
24. When I am in trouble, I talk to my female peers.	SA	A	D	SD
25. I argue a lot with my female peers.	SA	A	D	SD
26. I am really cared about by my female peers.	SA	A	D	SD
27. I enjoy talking with my female peers.	SA	A	D	SD
28. I respect my female peers.	SA	A	D	SD
29. When I have concerns about my future, I talk to my female peers.	SA	A	D	SD
30. I am criticised most by my female peers.	SA	A	D	SD
31. I want to be like my female peers.	SA	A	D	SD
32. I feel bad when things are not going well for my female peers.	SA	A	D	SD
33. I trust the motives of my female peers.	SA	A	D	SD
34. I feel I can tell secrets to my female peers.	SA	A	D	SD
35. I frequently am disappointed by my female peers.	SA	A	D	SD

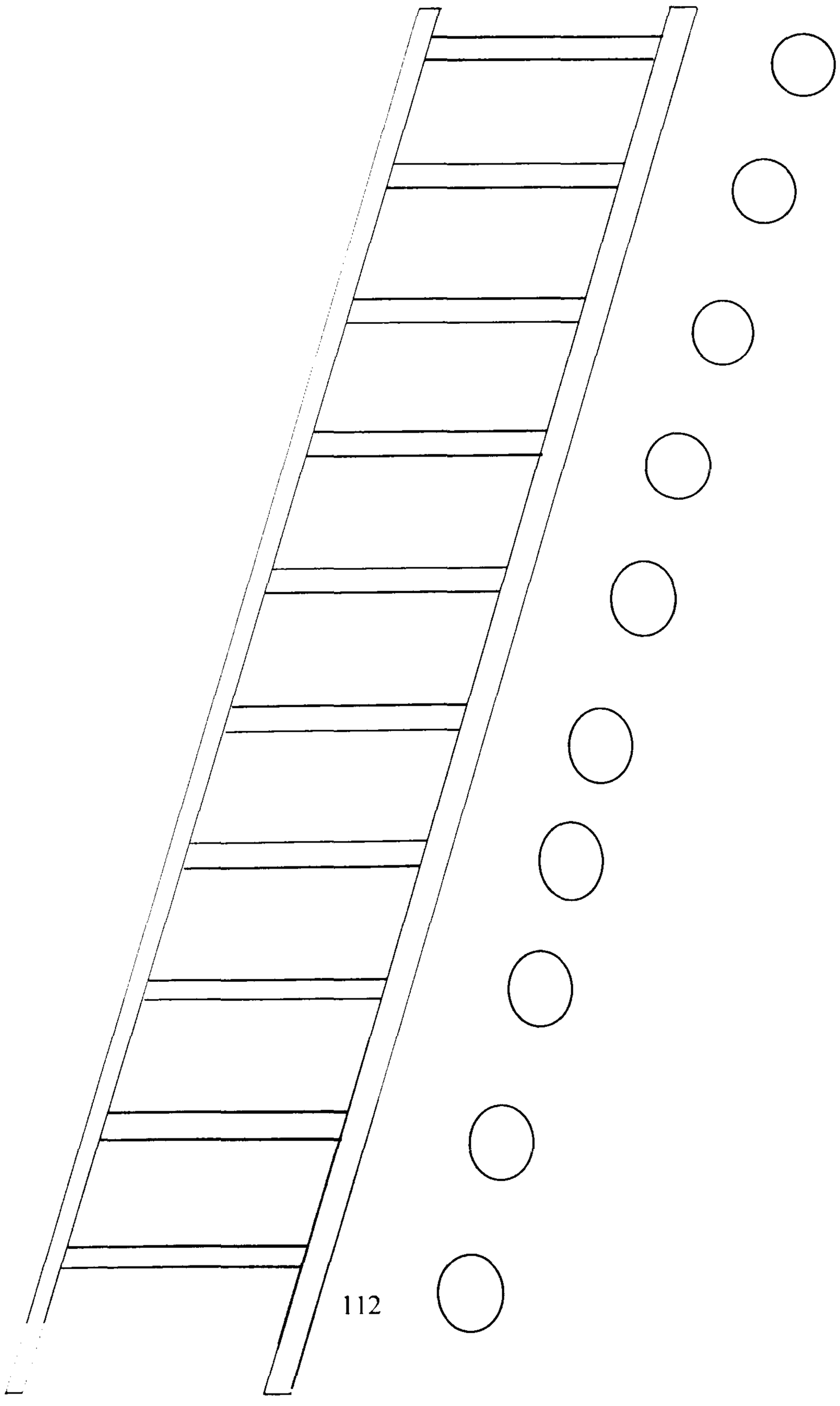
Appendix 5 – Perception Of Social Status (Ladder)

Social status ladder

Assume this ladder is a way of picturing your school.

- At the top of the ladder are the people in your school who have the most respect, who are most liked and the highest standing.
- At the bottom are the people who no-one respects and no one wants to hang around with.

Where would you put yourself on this ladder? Fill in the circle that best represents where you would be on the ladder.



Appendix 6 – Social Skills Rating System

Social Skills Rating System
F.M. Gresham and S. N. Elliott

Directions
This questionnaire is designed to measure **how often** a student exhibits certain social skills, and how important those skills are for success at the camp. Ratings of problem behaviours is also requested.

First complete the information below:

Students name _____
Date of birth _____

Your name _____

Sex: male ☐ female ☐

Job title at Carnegie International Camp _____

Next, read each item below and think about this students behaviour during their time at the camp. Decide **how often** the student does the behaviour described.

If the student **never** does this behaviour, circle the **0**.
If the student **sometimes** does this behaviour, circle the **1**.
If the student **very often** does this behaviour, circle the **2**.

For questions 1 - you should also rate **how important** each of these behaviours is for success at the camp.

If the behaviour is **not important** for success at the camp, circle the **0**.
If the behaviour is **important** for success at the camp, circle the **1**.
If the behaviour is **critical** for success at the camp, circle the **2**.

Here is an example:

	How often?		
	Never	Some-times	Very often
Shows empathy for peers	0	1	(2)

*This student **very often** shows empathy for peers.*

Please do not skip any items. In some cases you may not have observed the student perform a particular behaviour. Make an estimate of the degree to which you think the student would probably perform that behaviour.

SOCIAL SKILLS	How often?		
	Never	Some-times	Very often
1. Responds appropriately to physical aggression from other peers.	0	1	2
2. Initiates conversation with peers.	0	1	2
3. Volunteers to help peers with tasks.	0	1	2
4. Politely refuses unreasonable requests from others.	0	1	2
5. Appropriately questions rules which may be unfair.	0	1	2
6. Responds appropriately to teasing by peers.	0	1	2
7. Accepts peers ideas for group activities.	0	1	2
8. Appropriately expresses feelings when wronged.	0	1	2
9. Receives criticism well.	0	1	2
10. Introduces herself or himself to new people without being told to.	0	1	2
11. Compromises in conflict situations by changing own ideas to reach an agreement.	0	1	2
12. Acknowledges compliments or praise from peers.	0	1	2
13. Controls temper in conflict situation with peers.	0	1	2
14. Appears confident in social interactions with opposite-sex peers.	0	1	2
15. Invites others to join in activities.	0	1	2
16. Controls temper in conflict situations with adults.	0	1	2
17. Stands up for peers when they have been unfairly criticised.	0	1	2
18. Appropriately tells you when he or she thinks you have treated him unfairly.	0	1	2
19. Gives compliments to members of the opposite sex.	0	1	2
20. Responds appropriately to peer pressure.	0	1	2

PROBLEM BEHAVIOURS

	How often?		
	Never	Sometimes	Very often
21. Likes to be alone.	0	1	2
22. Fights with others.	0	1	2
23. Is easily embarrassed.	0	1	2
24. Argues with others.	0	1	2
25. Threatens or bullies others.	0	1	2
26. Talks back to adults when corrected.	0	1	2
27. Has temper tantrums.	0	1	2
28. Appears lonely.	0	1	2
29. Gets angry easily.	0	1	2
30. Shows anxiety about being with a group of peers.	0	1	2
31. Acts sad or depressed.	0	1	2
32. Has low self-esteem	0	1	2

Appendix 7 – information sheet and consent form for parents of children attending camp

INFORMATION SHEET

To: Parents of participants involved in the Carnegie International Camp.
From: Paul Gately (Technical director)
Fairfax Hall
Beckett Park Campus
Leeds Metropolitan University
Leeds
LS6 3QS

Welcome to the Carnegie International Camp for overweight and obese children. This programme has been specifically designed for children who are overweight.

The programme has been designed with children's views in mind. This has lead to improvements in the programme. These improvements have been assessed by changes in measures such as weight, body fat and fitness levels that have been made during the programme. This information, together with the views of the children, has then been used to further develop and improve the camp programme. Your child will therefore have the opportunity to participate in such measures to help the assessment of how successful the camp has been for you child, and the other children attending the programme.

This programme is not a "bootcamp", it is more accurate to describe it as "a holiday camp for kids" at which they lose weight, learn new behaviours and have a good time. There are three strands to the programme.

- The physical activity programme has the following goals and aims: making fun and enjoyment the key goals of all physical activities; spending time on improving skills in sports and activities; giving a choice of physical activity to children; and finally by providing a range of physical activities from basketball and football to rock climbing and camping trips they will get the chance to do things they may not have tried before. However, if they have tried these activities they will be more confident about doing them when they go home.

- The dietary programme has the following goals and aims: providing a diet that is not too strict, but is based on the dietary needs of each child; children will also learn the importance of eating behaviour; meal times are an opportunity for them to sit with their friends and enjoy eating as a social occasion; meal times are set so that children get into a regular eating pattern which is a further key factor in weight control.

- The educational programme has the following goals and aims: to help children understand how they can take control of their weight management so that when they go home they can adopt these behaviours into their normal daily lifestyle, to have the opportunity to share their views with their peers and to help children develop the necessary skills to change their lifestyle in a favourable way.

The daily programme is timetabled as follows;

8.00 Wake up.
8.30 Breakfast.
9.30 1st Activity (e.g. Basketball).
10.30 2nd Activity (e.g. Aerobics).
11.30 3rd Activity (Nutrition class).
12.30 Lunch.
1.30 Rest hour.
2.30 4th Activity (e.g. swimming).
3.30 Clubs or Clinics (choice sessions).
4.30 Snack time.
4.45 Leagues, ladders or lessons (choice sessions).
5.45 Dinner.
7.00 Evening activity (e.g. cinema).
9.00 - 10.00 Bedtime.

The programme is continually developing and improving. In order for us to monitor their individual progress, continue to improve the programme and develop it in line with children's needs, we need to take a number of measurements to assess changes throughout the programme. This is offered as part of the programme but we would like to ensure that you are happy for your child to be involved in the assessment.

The measurements will be taken at the beginning and the end of the camp programme, they include:

- Body weight on a weekly basis.
- Height
- A tape measure will be used to assess the circumference at a number of areas such as: waist, hips, legs and arms. This is so we can see how many centimetres have been lost at certain sites on the body. Another measurement is of skinfolds of certain sites on the body i.e. the arm, shoulder blades and side of the body. The equipment we use to measure this are called skinfold callipers. The measurement is very simple and takes a couple of minutes.
- Body fat will measured at the beginning, middle and the end of the programme by two different techniques the first is called bio-electrical impedance. This requires the children to lie down on a couch and have stickers placed on their right hand and right foot. This device is then able to measure the amount of fat on the body. It takes about 30 seconds to perform the test.
- The other machine we use to measure body fat is in a machine called a Bod Pod. Children sit in an egg shaped chamber with see through walls. This chamber looks like a small space capsule. Children will be required to sit in the chamber for about one minute while the test takes place.
- Fitness will be measured by two different methods. Firstly, children will perform an exercise test on a treadmill, wearing a heart rate monitor and a face mask that collects the air the children breathe out. The test involves walking on a treadmill

for 8-10 minutes. During the test the treadmill will stay at a constant walking speed, but will increase slightly in steepness throughout the test. The child will walk on the treadmill until they feel any discomfort (tiredness) or their heart rate reaches a certain level that is below their maximum but signifies that they are exercising hard enough for the requirements of the test (which ever comes first).

- The second fitness test involves walking on a 300m track for three laps wearing a heart rate monitor. This test is self paced, which means that the children set the speed themselves based on three easy instructions. The child is asked to "walk slowly" (lap one), "walk normally" (lap two) and "walk fast" (lap three). It is therefore the choice of the child to set the speed they are walking at.

- We will be using some standard questionnaire measures to look at self-esteem, self perception and feelings about eating and exercise. These take about 15 minutes to complete. In addition, we will conduct interviews with some children so that we can gain greater insight into any problems that they face and how they currently deal with these problems.

Children will be assessed as part of the programme because we feel this helps them see the impact of the programme. It is also helpful to them in understanding the things that effect their body weight and how they can change them. However, children may choose to opt out of any measurements at any time and need not give a reason for doing so.

We hope this addresses all your questions about the assessment side of the programme. If you feel you are unsure about any of the information, please feel free to contact the technical director. Children will also be informed about each of the assessments prior to them being carried out. They will get a chance to ask further questions and try out any measurements.

It is important for us to ensure the child is happy with the measurements or we will not get accurate information, therefore it is important to us to make the child feel very confident about all of these assessments.

An Evaluation of the Carnegie International Camp Parental Consent Form

Technical Director: Mr. Paul Gately (LMU)
Advisory team:
Dr. Julian Barth (LGI)
Prof. Carlton Cooke (LMU)
Mr Andy Hill, Leeds University

Leeds Metropolitan University
School of Leisure and Sport Studies
Fairfax Hall, Room G21
Beckett Park Campus,
Headingley,
Leeds, LS6 3QS

Phone: 0113 283 2600

Name of Participant (Upper case):.....

Name of Researcher (Upper case):.....Paul Gately.....

THIS SECTION TO BE COMPLETED BY THE PARENT

Please cross out as necessary

Have you had an opportunity to ask questions and discuss this study? YES / NO

Have you received satisfactory answers to all your questions? YES / NO

Have you received enough information about the study? YES / NO

The study has been explained to you by whom?.....

Do you understand that you are free to withdraw from the study:

- At any time, without having to give a reason for withdrawing YES / NO

Do you understand that:

- Your child's identity will not be revealed at any time or in any publication YES / NO

I agree that data from my child's tests can be used in future publications. YES / NO

Do you agree to allow your child to take part in this study? YES / NO

Signed (Participant):..... Date:.....

Signed (Parent):..... Date:.....

Signed (Project Director):..... Date:.....

Camp Director: Leeds University Metropolitan
Paul Gately
TELEPHONE: 0113 283 2600 Extension: 3579
email: p.gately@lmu.ac.uk