

**Inter-generational transmission of values regarding  
weight, shape and appearance**

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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

Many studies have shown that dieting behaviour is popular amongst adolescent girls and there is a growing body of research which suggests that similar patterns of dieting behaviour can be found in girls as young as 9 or 10. Although adolescent dieting is common relatively little is known about the reasons for its emergence. Previous research by Pike and Rodin (1991) found higher levels of weight concern and dissatisfactions with family functioning in mothers of eating disordered adolescent girls. The present study sought to extend this research by examining the maternal influences on weight and dieting concerns at a younger age. The present study investigated dieting motivation and underlying attitudes to weight and shape between mothers and their young adolescent daughters. Twenty girls with high dietary restraint scores were interviewed in addition to twenty girls whose restraint score fell on or below the mean. The mothers of all forty subjects were also interviewed and assessments were completed including dietary restraint, body esteem, self-esteem and body figure preferences and the family environment scale.

The high restraint girls reported being more dissatisfied with their body shape and tended to have lower body esteem compared to the comparison group of girls. These differences were not merely a reflection of higher body weight. Although no relationship was found between the mothers' and daughters' restraint scores the mother-daughter relationship did appear to be significant in other ways. The high restraint mothers and daughters both had low body esteem scores and desired to lose more weight than the comparison group of girls and mothers. Family functioning appeared to be different between the two groups. The high restraint mothers and daughters perceived the family to be less cohesive, to have lower levels of organisation and place less emphasis on moral and religious issues.

This study has reinforced the growing recognition that pre-adolescent girls may hold high dieting motivation. It has also highlighted the significance of the family system and mother-daughter relationship in the development of disordered eating. The parallel with the findings of Pike and Rodin supports the role that mothers may play in the transmission of cultural values regarding weight, shape and appearance. Importantly it also places dieting within a wider context of dissatisfaction with family functioning. Clinicians should be aware of these issues as they have important implications for early intervention and prevention of eating disorders.

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## Chapter 1.

### OVERVIEW AND REVIEW OF THE LITERATURE

#### Overview

Disordered patterns of eating have been described as lying along a continuum with normal eating at one end and disordered eating at the other (Polivy & Herman, 1987; Pike & Rodin, 1991). In between these extremes, dieting and expressing concerns about weight and body shape have increasingly become the norm for adult women. These dissatisfactions drive behaviour and lead to attempts at change. Dieting is commonplace and is frequently regarded as normative behaviour. A booming commercial industry has developed within the weight control market and served to reinforce the belief that dieting, exercise and cosmetic surgery, in the correct combination, can enable every woman to reach her ideal weight and shape.

It is within this cultural backdrop that children's regard of weight and shape must be examined. More than ever before children are exposed to these prevailing social beliefs via the media, friends and family. Children appear acutely aware of and sensitive to these cultural ideals with the consequence that dieting and weight concerns appear to be increasing at earlier ages (Bryant-Waugh & Lask, 1995). Patton, Johnson-Sabine, Wood, Mann & Wakeling (1990) and Stein (1996) have outlined the relationship between the onset of dieting practices in childhood and subsequent development of clinical eating disorders. The question of when and how shape and weight concerns emerge mainly draws from the research on adolescents.

The increasing recognition of shape and weight concerns and dieting in younger age groups has encouraged the enquiry into the primary routes of acquisition. Where do children learn about dieting and other methods of weight control? In addition, how do young children learn about the social values attached to weight and shape? Socio

cultural models of eating disorders have tended to address these issues within an older adolescent or young adult population. They have argued that cultural themes including the thin ideal and the centrality of appearance to women are generally transmitted via three identified channels, namely the media, peers and the family.

The importance of maternal dieting and body shape concerns have previously been shown in relation to eating disorder features in adolescent girls, (e.g. Pike & Rodin, 1991). However a growing literature suggests evidence of more direct parental involvement in the transmission of messages regarding weight and shape concerns in pre adolescent children.

To understand the relationship between trans-generational transmission of values regarding weight shape and appearance and the onset of disordered eating in children, the following bodies of literature will be reviewed: First, the literature on the development of eating disorders, secondly, the literature on socio-cultural influences and family functioning and the transmission of values within families, and thirdly the relationship between mothers with an eating disorder and their children, and children with eating disorders and their mothers.



## 1.1 Eating disorders defined

Eating disorders, as defined by Fairburn & Walsh (1995), are a 'persistent disturbance of eating or eating related behaviour that results in altered consumption or absorption of food, significantly impairing physical health or psychosocial functioning, not secondary to a medical or psychiatric disorder'.

The two main eating disorders are anorexia nervosa and bulimia nervosa. Exact prevalence is difficult to establish but estimates suggest that anorexia nervosa affects 0.5-1% of the young female population while bulimia nervosa affects approximately 1-3% (DSM-IV, 1994; Mitchell & Eckert, 1987). Brownell & Fairburn (1995) suggest mild variants are likely to be five times more common.

The diagnostic criteria for Anorexia Nervosa in DSM IV include:

- Refusal to maintain body weight at or above a minimally normal weight for age and height.
- Intense fear of gaining weight or becoming fat even though under weight.
- Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or denial of the seriousness of the current low body weight.
- In postmenarcheal females amenorrhea, i.e., the absence of at least three consecutive menstrual cycles.

Two subtypes have been identified:

- Restricting type: where during the current episode of anorexia nervosa the person has not regularly engaged in binge eating or purging behaviour.
- Binging/Purging type: during the current episode of anorexia nervosa the person has regularly engaged in binge eating or purging behaviour

The majority of anorexics are female with onset of symptoms during adolescence. Adolescents or young women account for between 80-100% of anorexia nervosa sufferers (Stice, 1994). It is a serious and potentially fatal disorder, with mortality rates estimated at around 10-15% (Minuchin, Rosman & Baker, 1978).

Bulimia nervosa is defined by:

- Recurrent episodes of binge eating that is characterised by both of the following:
  1. Eating, in a discrete period of time, an amount of food that is definitely larger than most people would eat during a similar period of time under similar circumstances.
  2. A sense of lack of control over eating during the episode.
- Recurrent inappropriate compensatory behaviour in order to prevent weight gain such as self induced vomiting, misuse of laxatives, diuretics, enemas, or other medications, fasting or excessive exercise.
- Binge eating and inappropriate compensatory behaviour both occur on average at least twice a week for three months.
- Self-evaluation is unduly influenced by body shape and weight.
- The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Two subtypes have been identified:

- Purging Type: during the current episode the person has regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics or enemas.
- Nonpurging Type: during the current episode the person has used other inappropriate compensatory behaviours, such as fasting or excessive exercise but has not regularly engaged in self-induced vomiting or the misuse of laxatives, diuretics or enemas.

Bulimia nervosa is a relatively recently identified disorder. Typically onset is later than anorexia nervosa. Although the Royal College of Psychiatrists (1992) reported a prevalence rate among young adult women (aged 16-35) of around 1%, others have put the estimates up to 3%. Bulimia nervosa is thought to have a lower mortality rate than anorexia nervosa, any deaths occurring from suicide or severe electrolyte imbalance and dehydration resulting from vomiting and laxative abuse.

Characteristics uniting anorexia nervosa and bulimia nervosa are extreme concerns about body shape and weight, and judgement of self worth almost exclusively in terms of shape and weight. Both eating disorders are associated with a range of depressive and anxiety symptoms, obsessional features, poor concentration and impaired social functioning (DSM-IV, 1994).

The difference between eating disordered women and their non eating disordered counterparts, appears to be one of degree rather than presence or absence, suggesting that disordered eating lies on a continuum (Polivy & Herman, 1987; Pike & Rodin, 1991). Dieting and weight concern now represent the statistically "normal" eating pattern, especially amongst females in Western cultures (Polivy & Herman, 1987, 1985). Hill (1993) reported high levels of body weight & shape dissatisfaction amongst women, with 90% of eating disordered and comparison adult women wanting to weigh less than the population mean. It has also been suggested that dieting has replaced corsetry as the major means of shaping the female body (Knuf & Caughlin, 1993).

Although anorexia nervosa and bulimia nervosa predominantly affect adolescent girls and young women they are also known to occur in pre-pubertal children. Children as young as 8 years old have been described as having anorexia nervosa (Gowers, Crisp, Joughin & Bhat, 1991; Higgs, Goodyer & Birch, 1989; Fosson, Knibbs, Bryant-

Waugh & Lask, 1987). DSM-IV criteria for diagnosing anorexia nervosa and bulimia nervosa are primarily intended for use with older patients and do not adequately address the problems of diagnosis in children. In response, Lask & Bryant-Waugh (1986) describe the use of a diagnostic checklist specifically for anorexia nervosa in children.

This checklist includes;

- Determined food avoidance, and
- Weight loss or failure to gain weight,

and any two or more of the following:

- preoccupation with body weight
- preoccupation with energy intake
- fear of fatness
- distortion of body image
- self induced vomiting
- excessive exercising
- laxative abuse.

There has been a progressive increase in the incidence of eating disorders in the western world, which has promoted research into possible aetiological factors (Mynors-Wallis, 1989). Chronologically, dieting normally precedes the onset of an eating disorder (Polivy & Herman, 1985) and may evolve into long periods of fasting, which are an integral part of the clinical picture of both anorexia nervosa and bulimia nervosa. Many have recognised the co-occurrence of dieting and eating disorders and have sought specific links between dieting and eating disorder psychopathology to substantiate this relationship. The following section therefore will briefly explore the relationship between dieting and eating disorders and other identified vulnerability factors.

## 1.2 Vulnerability factors and eating disorders

### 1.2.1 The relationship between dieting and eating disorders

Dieting is a common precursor to all of the eating disorders. There is evidence to suggest that early dieting predicts binge eating disorder (Yankovski, 1993) as well as bulimia nervosa (Mitchell, Hatsukami, Eckert, & Pyle, 1986). However more recent studies suggest that only 50% of binge eating disorder cases are pre-dated by dieting. There are a number of theories explaining the link between dieting and eating problems, most notably Polivy and Herman's (1985, 1987) restrained eating model. Polivy & Herman do not believe binge eating "causes" dieting. They argue that the association between binge eating and dieting reflects the reverse relation; that dieting causes bingeing. In other words, prior deprivation produces a tendency for subsequent increased compensatory behaviour. Thus one common starting point, dieting, may initiate different paths to binge eating disorder, bulimia nervosa or anorexia nervosa or non-pathological eating.

Formulations of the psychopathology of eating disorders consistently give prominence to dieting as a behaviour involved in the maintenance of the disorders, as well as in their aetiology. Although the role of dieting in their development is more difficult to establish, Hill (1993) argues the variety of features common to dieting and eating disorders almost demands causality. Supporting evidence from Patton et al., (1990) and Patton, Selzer, Coffey, Carlin, & Wolfe, (1999) have shown that at twelve month follow up, 15 year old girls initially identified as dieters were at eight times the relative risk of being eating disordered than non-dieters. It should be noted however that dieting during adolescence does not confer an inevitability to becoming eating disordered. The majority of adolescent dieters do not go on to be clinical cases. But in

conjunction with other circumstances and vulnerability factors dieting and its underlying motives may be of considerable importance. Striegel-Moore, Silberstein & Rodin (1986) proposed that a prolonged history of repeated dieting attempts constitutes a risk factor for the development of an eating disorder.

Dieting is the intentional inhibition of caloric intake in the pursuit of a slimmer physique. Currently society promotes dieting as a pathway to thinness and more people are watching their weight than ever before. Nielsen (1979) found that significantly more women than men were dieting at any one time. At a time when the rise in obesity prevalence was becoming recognised, Garrow (1991) argued strongly that for adults the medical dangers of dieting are far less than those of remaining obese. Whilst this might be the case for the very overweight, dieting is a practice that is not exclusive to this group. Dieting has now transcended actual weight and for many is a response merely to feeling fat. Dieting has also seeped down to younger and younger age groups and has become part of a daily routine for many adolescents. The rather extreme findings of Hawkins, Tirell & Jackson (1983) indicated that before the age of 13, 80% of girls in their US sample reported they had already been on a weight loss diet compared to 10% of boys.

Dieting does not guarantee weight loss nor is it a benign behaviour. Warren & Cooper (1988) found that significant caloric restriction with consequent weight loss led to a plethora of adverse psychological sequelae, including depression, anxiety and irritability. They also observed significant changes in dieters' emotions and cognitions, as they became more preoccupied with thoughts about food and had strong urges to eat. Dieting results in lower energy intake and episodes of overeating in both children & adults (Hill & Robinson, 1991, Laessle, Tuschl, Kotthaus & Pirke, 1989 & Polivy & Herman, 1985). A further concern with adolescent dieting and under nutrition at a time

of physical growth and development is that it complicates and compounds potential physical consequences including retarded growth and delayed puberty (Pugliese et al., 1983), and later osteoporosis (Kreipe & Forbes, 1990).

In addition to the physical effects of dieting there are also psychological consequences. Several studies have shown dieting to have a detrimental impact on psychological functioning. Cooper and Fairburn (1992) describe how dieting selectively alters the way information is processed. It may also impair elements of cognitive performance (Rogers et al., 1992), and increases preoccupation with food and eating whilst reducing feelings of being in control of eating (Warren & Cooper, 1998).

Within the literature there appears to be a difference in specialist opinion regarding the significance and links of early dieting to eating disorders. Steinhausen (1995) argues that dieting may be a benign practice in the great majority of young women without progression to clinical status. In contrast, Hsu (1989) states that dieting may be a major risk factor for the pathogenesis of an eating disorder and that the prevalence of eating disorders occurs in direct proportion to the prevalence of dieting behaviour in a given community. Herman & Polivy (1991) argue that, "it is no accident that anorexia and bulimia are invariably preceded by strenuous dieting. The normal psychology of dieting is simply a template for the abnormal psychology of an eating disorder. The symptoms of eating disorders, alternating abstinence and bingeing, emotional volatility and disorientated thinking, low self esteem and the pervasive pursuit of thinness are all writ small in everyday dieting". Generally, eating disorders are recognised as a major health concern in industrial societies (Mitchell & Eckert, 1987), therefore, factors that influence unhealthy dieting patterns and associated body dissatisfactions from an early age require continued investigation.

### 1.2.2 Body image concerns and dieting motivation

For many adults, dieting is a response to feeling fat and wanting to be thinner (Hill, Oliver, & Rogers, 1992), and the pressure for thinness has been implicated as a contributing factor to the higher incidence of eating disorders in women (Garner, Garfinkel, Schwartz & Thompson 1980; Striegel-Moore, Silberstein & Rodin 1986). Studies have examined body dissatisfaction and pressure towards thinness among college adult men and women. The findings suggest that female students experience greater body dissatisfaction than men (Fallon & Rozin 1985). It has been hypothesised that dissatisfaction with body image coupled with the belief that thinness is a very important feature helps to explain the greater female concern with weight control (Rozin & Fallon 1988).

Body image concerns and dieting motivation in children and adolescents appear to follow the same patterns. One of the first publications to describe dieting in adolescents was by Nylander (1971). Not only did Nylander find a high prevalence of adolescent dieting there were also large numbers of girls feeling fat. This was also a feature of Greenfield, Quinlan, Harding, Glass, & Bliss study (1987) in which over 80% of adolescent girls studied said they felt fat and more than 80% desired to lose weight. Maloney, McGuire, Daniels, & Specker (1989) noted that 7-12 year old girls shared these body dissatisfactions. In addition, Cohen, Adler, Irwin, Millstein, Kegeles, & Stone, (1987) replicated Fallon & Rozin's (1985) body shape choice procedure with early adolescents (aged 10.5-15 years). They found that both sexes revealed a small degree of body figure dissatisfaction relative to their chosen ideals and those girls showed a bias towards thinness.



Pine (2001) investigated whether the ideal female figure chosen by preadolescent girls is thinner than that chosen by their male counterparts and whether young girls aspire to a thinner figure than boys. The study involved 140 British children aged between 5-11. She found that body image concerns reported in adolescence (Cohen et al., 1987; Fallon & Rozin, 1985) were also present in preadolescent girls. She concluded that by the age of five, girls already have a perception of the ideal female as being thin. By the age of 7 they recognise that this is the body shape they would like and by the age of 9 some have become aware of a mechanism for pursuing this aspiration and have begun dieting, though they are not overweight. Within the 11 year-old group 61% of the girls reported that their mothers dieted compared to only 12 % of boys.

It has been suggested that sex differences in body esteem exist from childhood and that they intensify during adolescence (Vaughan, Stabler, & Clarke, 1981). Accordingly, Tobin-Richards, Boxer, & Petersen (1983) found adolescent girls became more self-conscious, showed lower self-esteem and perceived their body image less favourably than adolescent males. Hill et al., (1992) found high levels of dieting motivation and significant associations between several measures of self-esteem and body shape dissatisfaction in a number of adolescent and pre-adolescent children. Girls aged 9-14 with the highest levels of dietary restraint expressed high levels of body shape dissatisfaction. A similar relationship between body weight and self-perception was noted by Hill, Draper and Stack, (1994) in 9-year-old children. The heaviest children expressed low body self esteem, a desire for thinness and higher levels of dieting restraint. Dieting concerns were not exclusive to the heaviest subjects; high scores were found even in the underweight category of girls.

One issue, which is often overlooked in the literature, is the degree to which body shape dissatisfaction relates to actual body weight. Shape and weight discontent may be legitimised if only those girls who are overweight or obese express such feelings. Wadden, Foster, Stunkard, & Linowitz 1989 studied 15 year-old girls and found that those who were overweight were significantly more dissatisfied with their weight and figure than their peers. However this group did not have a monopoly on such dissatisfactions. With the exception of the underweight group, girls in all other categories expressed a wish to lose some weight.

In an extension of this research, Hill et al., (1994) examined 9-year-olds shape preference in relation to their actual body weight. Nearly 10% of the underweight and 35% of the average weight girls had a thinner ideal shape than perceived current shape, double the proportion of boys in these categories. No gender difference was apparent in the heaviest children, with 80% of both boys and girls expressing a desire to be thinner. Having a measure of actual body weight enabled the scaling of body shape satisfaction against group average weight. Of the girls three out of five weight categories placed their preferred shape at a significantly thinner point on the scale than their current shape. Conversely, of the boys, three out of five weight categories selected a preferred shape, which was broader than their current perception. In only one weight category for each gender was preferred and current shape not significantly different from each other. For the girls this was in the slightly underweight category, and the boys in the slightly overweight category. The point at which preferred shape was equal to current shape was 12% above their mean weight for the boys. For the girls this was 11% below their mean weight. This discrepancy between preference and reality is in harmony with the impending development of boys, but in opposition to that of girls. In addition given the

timing of puberty girls have to negotiate this conflict between preferred shape and physical change at an earlier age.

Dissatisfaction with some element of body shape or weight is an instigator for dieting in adolescents and adults alike. It appears that some children as young as 9 years share some of these adult discontents and may act on them by pursuing a career of dieting.

There has been a growing awareness of the importance of perceptions of body image, its social implications and its links with eating behaviour. Toro, Castro, Garcia, Perez, & Cuesta (1989) attempted to relate anorexic attitudes and behaviour to a number of socio-demographic variables including body weight and body self-evaluation. They concluded that attitudes to body weight have far greater relevance to eating behaviour than actual body weight. It is interesting that Wadden et al., (1989) found children's perceived weight rather than their actual weight best correlated with weight and figure dissatisfaction. Dieting motivation in adolescents and younger girls therefore may have a limited relation to their actual body weight.

Davison & Birch (2001) examined the relationship between weight status and self-concept in pre-school aged girls and explored whether parents' concerns about their daughter's weight status or restriction of her access to food was associated with negative evaluations. They found girls with higher weight status reported lower body esteem and lower perceived cognitive ability than did girls with lower weight status. Independent of weight status higher paternal concern about overweight was associated with lower perceived physical ability among girls. Higher maternal concern about overweight was associated with lower perceived physical and cognitive ability. Furthermore, higher weight status among girls in combination with higher levels of

maternal restriction of access to food was associated with lower perceived cognitive ability and physical ability among girls.

Their results support earlier research suggesting that the stigmatising impact of overweight may be experienced as early as the preschool years. Pierce & Wardle (1993) showed that children aged 9 years and older are accurate evaluators of their parents' perception of their body shape. The findings of Davison & Birch (2001) suggest that girls as young as 5 years may be aware of how their fathers perceive their body shape and more importantly these perceptions influence their daughters' self evaluations. In a recent review of the literature on body image concerns and factors associated with its development, Ricciardelli and McCabe (2001) concluded that based on the figure preference task specific estimates for the number of girls who desire a thinner body size range between 28-53%. Fewer girls (4-18%) desire a larger/broader body size.

In a review of the five main longitudinal studies that had examined the evolution of eating disturbances Hsu (1997) concluded that they all unanimously point to the role of dieting behaviour in the pathogenesis of an eating disorder. He acknowledges that not all dieters proceed to develop an eating disorder and therefore other risk factors must also be involved. Hsu continues "dieting causes the onset of an eating disorder if there is a family history of eating disorders, mood disorder or alcohol/substance use and if it is intensified by certain developmental issues." Other factors may also contribute to this pathogenic pathway including personality characteristics, family interaction, and biological vulnerability.

### 1.2.3 Self esteem

Another area of vulnerability, which predisposes an individual to the development of an eating disorder, is low self-esteem. Self-esteem deficits have

frequently been implicated as playing an aetiological role in both anorexia nervosa and bulimia nervosa (Stice 1994). Bruch (1973) described an “overwhelming sense of ineffectiveness” in the anorexic and implied that weight control and the drive for thinness represents a desperate effort to enhance self-esteem through weight control. Early evidence suggested that low self-esteem was negatively related to confidence and persuasion, possibly due to a lack of confidence in personal judgements (Hovland & Jarvis 1959; McGuire 1968). Recent support for this has come from findings that adolescents and adults with low self-esteem are more likely to subscribe to actually prescribed ideals in an effort to gain social acceptance and elevated self-esteem (Stice 1994; Streigel-Moore, Silberstein, & Rodin 1986).

Polivy, Heatherton & Herman (1988) found self-esteem to be an important mediator of eating behaviour in restrained subjects. Low self esteem restrained subjects displayed a counter regulatory response, in that they ate more after a preload than after no preload. All unrestrained subjects, regardless of self-esteem level, showed normal compensation, eating less when preloaded than when not preloaded. High self esteem restrained subjects ate about the same amount regardless of whether they had been preloaded or not. If high self-esteem in restrained subjects is associated with less disinhibited eating, it is possible that increasing the self esteem or confidence of dieters might serve to protect them from the excessive eating induced by stress or other disinhibitors. However, repeated dietary “failures” or episodes of disinhibition will take their toll on the self-esteem of some dieters. For example, an episode of disinhibited eating might thus lower a dieter’s self-esteem, making the dieter more susceptible to disinhibited eating in the future, in a self-perpetuating spiral. This spiral may form at least part of the mechanism by which dieting contributes to bingeing.

Other research has shown that overweight school aged children and adolescents experience lower self concept and lower body esteem than do their normal weight peers (Mendelson & White, 1985). In contrast Button (1990) found self-esteem was only modestly related to fatness concern. Negative associations between weight status and self-concept are present in girls as young as five. It is possible, however, that that low self-concept precedes high weight status. Nevertheless, the way we deal with childhood overweight may have implications for the psychological health of these children. The view that criticism and hostility of a body conscious society towards overweight children affects their self-esteem has therefore had mixed support.

#### 1.2.4 Eating behaviour

Several longitudinal studies conducted with adolescent and adult females have shown that body dissatisfaction is one of the main risk factors leading to problem eating attitudes and behaviours (Killen, Hayward, Wilson, Taylor, Hammer, Simmonds, & Haydel, 1994; Stormer & Thompson, 1996) Although no longitudinal study has yet been conducted with younger children, several cross-sectional studies have demonstrated a relationship between body dissatisfaction and dieting cognitions and behaviours in children. For example, body image concerns have been found to be related to eating attitudes and behaviours in girls and boys as assessed by the Children's Eating Attitudes Test (Flannery-Schroeder & Chrisler, 1996; Kelly, Ricciardelli, & Clarke, 1999; Maloney et al., 1989). Body image concerns are also related to other measures of dieting cognitions and behaviours.

There are a number of eating style characteristics, which are relevant to the development of eating disorders. Adolescent dieters have been shown to be at greater risk of developing an eating disorder than non-dieters (Patton et al., 1990). In addition,

Starkey (1983) found restrained individuals were preoccupied with their weight, showed greater dissatisfaction with their bodies, were likely to overeat when depressed and felt unable to control their eating behaviour.

Dietary restraint is apparent in adolescent and pre-adolescent females and had been noted in girls aged between 12 and 14 (Hill, Rogers & Blundell, 1989). Restraint was functional in predicting eating behaviour and followed the same patterns as that of adults, with those girls most concerned with dieting likely to break their restraint and overeat. Hill, Weaver & Blundell, (1990) also identified restraint in girls as young as 10-years-old. Children who wished they were thinner reported that they were more likely to refuse food because they were worried about their weight, tried to eat less at meal times and deliberately ate slimming foods (Hill et al., 1994).

Much of the research in this area serves only to highlight the difficulties in attempting to transfer constructs and relationships that apply to adult and adolescent populations to children. The meaning of the terms may vary for different groups, and so the way in which participants respond to certain items may vary. Research on body image concerns and eating attitudes and behaviours among children often uses modified scales developed for adults and adolescents. Accordingly some of the terms used in these assessments may either not be understood by children or may have different meanings for adults, adolescents and children. In order to obtain a clearer understanding of these issues with regard to a younger age group more sensitive and age appropriate measures need developing in addition to continued investigation.

### **1.3 Dieting and adolescence**

Being thin is highly valued within our society, especially among women, where thinness is often associated with attractiveness. It would seem that these messages are

so pervasive that the same values and beliefs are advocated by children as young as 7. There is increasing evidence that children learn from their families' teachers, friends and the media that fat is 'bad' and thin is 'good', and they seem to learn this before adolescence. Research indicates that 25-63% of adolescents above 13 years of age are on a diet at any given point in time (Muir, Wertheim & Paxton 1999). This high prevalence is of concern as dieting can have serious health risks, in addition to being a risk factor for eating disorders and disordered eating.

Research findings suggest that dieting and weight concerns are well established by adolescence. As previously noted, Nylander (1971) observed that mild levels of concern about fatness and dieting were common in adolescent girls. Clinically significant eating disorders in this group were reported to affect about 5% of adolescent females and young women. In the first prospective study of the range of eating disorders in an unselected adolescent population, Patton et al., (1990) reported that at the age of 15 the relative risk of dieters becoming clinical cases was eight times that of non-dieters. In the majority of girls, dieting was found to be a benign practice without progression to more extreme concerns about food and weight. Follow up at twelve months demonstrated a spontaneous improvement in 40% of cases interviewed. Similarly the majority of dieters had either not progressed in dieting or were no longer dieting at follow up. However a fifth of the dieters in the interview group were diagnosed as cases at twelve month follow up and constituted half of the new cases. Despite the majority of dieters remaining well, the relative risk for the total study population for a dieter of being diagnosed a case at follow up was nearly eight times that of non dieters. Patton et al., conclude that dieting does predispose to the later development of more severe eating problems.



In a more recent prospective study Patton et al., (1999) investigated the predictors of new eating disorders in around 2000 Australian adolescents. They found that 8% of 15 year-old girls dieted at a severe level and a further 60% dieted at a moderate level. Females who dieted at a severe level were 18 times more likely to develop a new eating disorder within 6 months than those who did not diet, and those who dieted at a moderate level were five times more likely to develop an eating disorder. In contrast, fewer than 1 in 500 subjects in the non-dieting group developed an eating disorder in the next year.

In addition to dieting as a risk factor, they also found that psychiatric morbidity carried independent risks with 6% of female subjects developing a eating disorder within 12 months compared with less than 1% of those in the low morbidity group. Female subjects in the severe dieting group with high levels of psychiatric morbidity had a greater than 1 in 4 chance of developing an eating disorder within 12 months.

However, relatively little is known about the actual decision to diet and the initiation of dieting. Identifying specific events or triggers, which encourage dieting, could potentially enable the development of better prevention programmes.

Wertheim, Paxton, Schutz & Muir, (1997) identified specific triggers to dieting. Thirty non-clinical grade 10 girls were interviewed about why they had gone on their first and subsequent diets. Fifteen reasons were given by the girls for commencing a diet to lose weight and seven of these were endorsed as reasons for watching their weight. Many girls reported subjective feelings of becoming fat as triggers for weight loss attempts (“felt fat”, “compared self to slimmer sister”) while others reported specific environmental events such as negative comments (“dad told me to lose some weight”) or teasing (“brother said, your fat”), or another friend going on a diet (“friends formed a pact to start a diet together as all wanted to lose weight”). In developing

Wertheim et al.'s study, Muir et al., (1999) explored triggers for dieting in adolescent girls from grade 7 and grade 10 in addition looking at why potential dieters choose not to diet. One hundred and thirty one respondents gave 132 different triggers for going on a diet, four girls gave no triggers. Of the 157 girls that did not diet, 24% indicated that they had considered dieting. The most frequent reason cited for not dieting involved conscious resistance to direct or perceived pressure to diet. This was followed by a belief that dieting is bad or dangerous, and support or acceptance by others of the girl's present size. Dieting triggers were categorised into body concern triggers and social-environmental triggers. Body concern triggers included general body dissatisfaction and feeling fat or a desire to look better. Social-environmental triggers included social comparison and self-comparison, being teased or being invited to diet with someone else. They also found that significant people in a girl's immediate socio-familial environment were important social agents leading to dieting in adolescence. This supports previous research identifying peers and parents as influential in dieting. In addition some aspects of self-concept were lower for dieters than non-dieters. In particular parent relations, emotional stability, physical appearance and general self concepts were significantly lower for dieters.

One such trigger frequently cited in the literature appears to be sensitivity to fatness. It would appear that sensitivity to fatness could be triggered at any age of pubertal development through chance comments, teasing about size or shape from parents, siblings or peers. Initially sensitivity to fatness was often associated with the transition to adulthood and linked therefore to puberty. This focus on eating disorders as a product of pubertal development and sexual maturity has meant that until recently younger age groups have been ignored. It was thought that girls under the age of 15 were free from the pressures experienced by adult females. This belief is now hard to

sustain. Using a longitudinal study to assess the impact of pubertal transition on 13-year-old girls Attie & Brooks-Gunn (1989) reported that eating problems emerged in response to physical change, body shape became a primary focus and efforts to control weight intensified as the girls approached 15. Hill, et al., (1992) stated that like adults, children and adolescents cope with body weight dissatisfactions by turning to dieting behaviour. More disturbingly there is a growing body of research that indicates that similar patterns of dieting can be found in girls aged 9 (Hill et al., 1994), and even 7 (Maloney et al., 1989).

A number of studies have shown that 12 year-old girls have high levels of dieting motivation (Wardle & Beales 1986), or have already dieted (Davies & Furnham 1986). In a recent study of British 12-year-olds Edmunds and Hill (1999) found that 40% of girls had previously dieted to lose weight, 20% were currently dieting and 22% had previously fasted. Furthermore, Maloney et al., (1989) found that 55% of girls as young as 7 replied yes to the question have you ever wanted to be thinner.

The prevalence and age of onset of dieting behaviours are now a cause for great concern. In both Britain and the United States dissatisfaction with body size and subsequent dieting behaviour are becoming increasingly evident among children as young as 9 years (Wardle & Marsland 1990: Hill, et al., 1992: Edmunds and Hill, 1999). There are also clinical observations identifying a much younger population affected by anorexia nervosa. Lask & Bryant-Waugh (1986) have described children from the age of seven who fulfil the diagnostic criteria for anorexia nervosa. Rather alarmingly Maloney, et al., (1989) found that nearly 7% of seven to ten year olds surveyed achieved a score on the Children's Eating Attitudes Test (CHEAT) within the anorexic range.

Hill & Pallin (1998) found dieting to be a familiar concept for British 8-year-olds. Faced with a fictitious character “Mary-Jane” saying she was feeling fat and asked what she should do, both dieting and exercise were highly recommended. Their study supports the view that young girls are drawn to weight control to improve their self-worth. In addition, the perception of mum dieting if she felt fat was a strong predictor of children’s own dieting awareness.

There is widespread agreement amongst researchers and clinicians that eating disorders are best understood within a multi-dimensional framework. This incorporates the personality, genetic, parenting, family functioning, developmental and life event variables that have been linked with the development of an eating disorder (Crisp 1980; Slade, 1982; Dally & Gomez, 1979; Minuchin, Rosman & Baker, 1978 Pike & Rodin 1991; Palmer, 1995). These factors may result in low self esteem, loss of control and a sense of ineffectiveness, which, when channelled into weight and shape concerns and subsequently dieting can precipitate the onset of an eating disorder. The channelling of low self esteem into weight concerns and dieting is thought to occur as a result of social and cultural pressures that are exerted primarily, though not exclusively, onto women in Westernised culture.

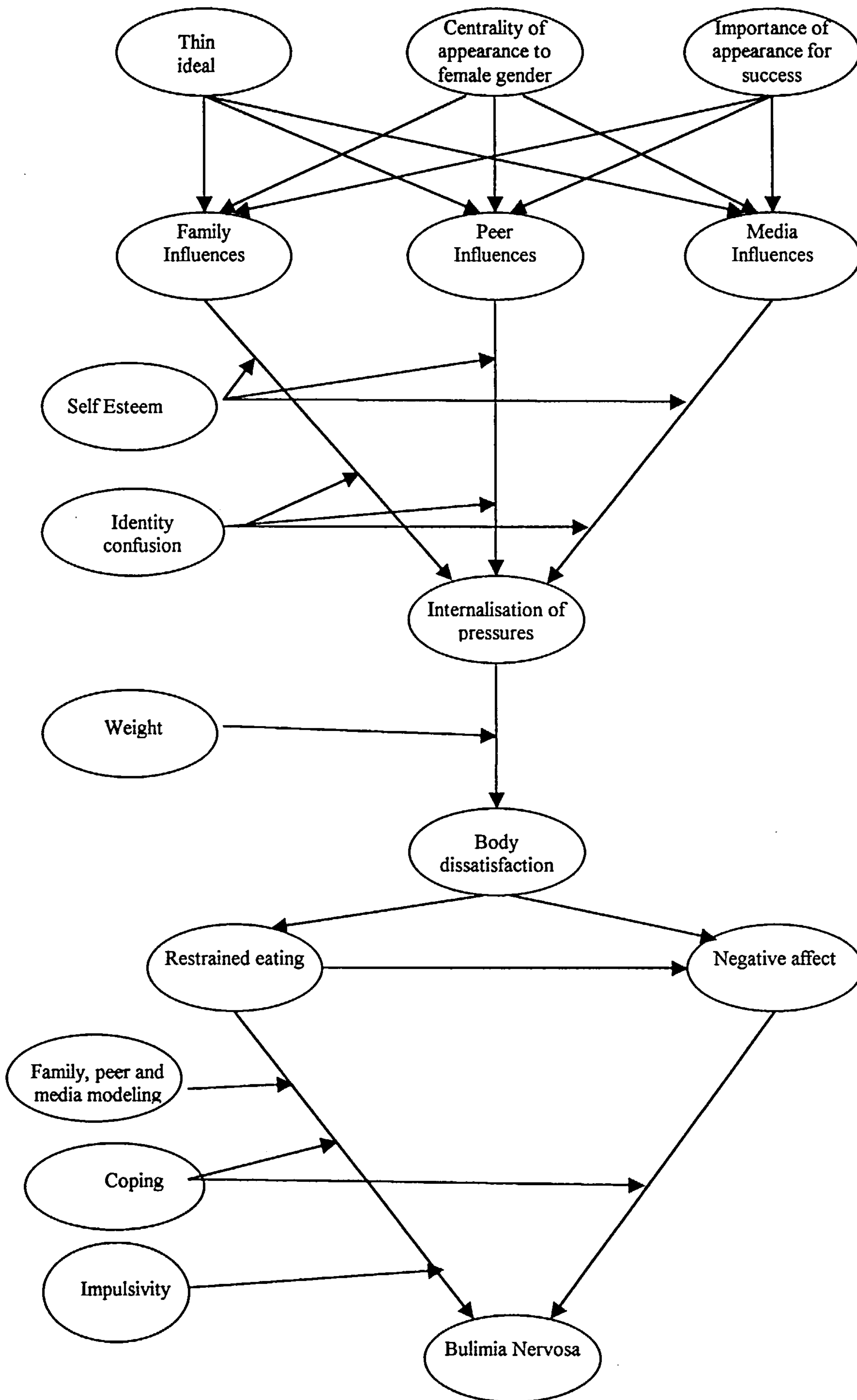
#### **1.4 The socio-cultural model of eating disorders**

Beauty ideals have varied considerably in Western cultures over the course of past centuries (Brownmiller 1984) and women have been willing to alter their bodies to conform to each historical era’s ideal of beauty (Ehrenreich & English 1978). Consequently, for many working in the field, socio-cultural factors have become central in the aetiological analysis of eating disorders. It is argued that eating disorders are a culture bound syndrome and that sociocultural factors place young girls and women at

increased risk for developing eating disorders (Striegel-Moore, Silberstein & Rodin, 1986). Theories about the causes of eating disorders have routinely ascribed a role to sociocultural factors (Garfinkel & Garner, 1982; Johnson & Connors, 1987).

Levine, Smolak, Moodey, Shuman & Hessen, (1994) propose three basic components to the sociocultural argument. Firstly, since the 1950's the shape of the 'ideal woman' has got thinner despite a relative increase in real weight terms. Secondly, the thin shape is not only a symbol of beauty but also professional success (Silverstein & Perdue, 1988). Thirdly, women and adolescent girls have been led to believe that the thin look is achievable through dieting, exercising and other weight management techniques.

Stice (1994, see Figure 1), provides a model of the socio-cultural forces at work in this way, emphasising the major influences as the thin ideal body image for women, the centrality of appearance in the female gender role and the importance of appearance for women's societal success. These pressures are thought to be transmitted through family, peers and the mass media. Stice proposes that the influence of family, peers and the media in perpetuating bulimia can be broken down into two distinct mechanisms: social reinforcement and imitation. Social reinforcement is the process where individuals internalise definitions and exhibit behaviours and values that are approved of by respected people in their environments. In contrast, imitation refers to the acquisition of new behaviours by observing other people perform them.



**Figure 1. A model of the sociocultural influences on the etiology of bulimia nervosa (from Stice, 1994). Note: Proposed mediators are family influences, peer influences, media influences, internalisation of pressures, body dissatisfaction, restrained eating and negative affect. Proposed moderators are self-esteem, identity confusion, weight, coping skills, impulsivity, and family, peer, and media modeling.**

The following section will outline Stice's model and review some of the current literature on the media, peers and family.

#### **1.4.1 The Media**

Two authoritative and comprehensive reviews on the role of the media in the development and prevention of eating disorders have been published by Levine & Smolak (1996, 1998). Both argue that the common belief that the media promotes the cultural ideal of thinness as desirable and achievable represents an oversimplification of what is a complex argument.

Over a relatively short period of time the mass media has become a vast and ever-expanding conglomerate of communication networks which now encompasses television, radio, magazines, newspapers, books, other printed material, advertising, the internet and more. It has access to and can engage an enormous, heterogeneous, anonymous audience with a variety of purposes including selling, education and entertainment. The message that thin is beautiful is continually reinforced by some elements of the media and advertising, as is the current cultural preference for a slim figure (Garner et al., 1980).

Research suggests that the ideal body image for women presented by the media has become thinner over the last several decades. In addition, the socially preferred ideal female figure has become increasingly slimmer. In contrast the average body weight of women has increased. This results in dissatisfaction with body image for many women and creates a social pressure to achieve an unrealistic and unhealthy slim ideal (Garner et al., 1980; Rodin, Silberstein & Striegel-Moore, 1985). However, promoting thinness, as the 'gold standard' for women's body shape is only a small part

of the media endorsed package. Levine and Smolak (1996) list a variety of possible negative media endorsed beliefs relevant to eating disorders. These include:

- Creation of slenderness as the gold standard for a narrow range of ideal body shapes
- The promotion of slenderness as the path to social, sexual and occupational success for women
- Emphasis on the possibility and desirability of personal transformation through fashion and dieting
- Promotion of the importance (i.e. reality) of image as substance
- Establishment of gender roles based on impossible expectations
- Fatness as a sign of personal loss of control and failure

Although standards and cultural norms of beauty have existed in the past it is only relatively recently that these norms have become so widely accessible via the mass media and transmitted in such a wide variety of formats to an increasingly younger age group. For example, between the ages of 8 and 12 the amount of time spent watching television increases from 2.5 to 4 hours per day. Over half of the 20,000 advertisements per year watched by children are of food products of debatable nutritional quality (Dibb, 1996; Lewis & Hill, 1998).

Unfortunately images of slenderness have been taken to the extreme with models becoming more “tubular” over time and it has been suggested that the current ideal female body shape approaches that of anorexic (Boskind-White & White, 1983). These unrealistic societal ideas have caused many adolescent girls and women to experience discontent with their weight and shape.



The mass media therefore appears to be an important vehicle through which a range of socio-cultural values are generated and legitimised, and as such contribute to a continuum of eating disorders (Stice 1994). However, the true impact of the media on body image, weight management, and disordered eating is uncertain. Some researchers view the media as somehow brainwashing its audience. By contrast, others believe its influence is mediated by the motives of the audience and their use of it (Levine & Smolak 1996).

From Levine and Smolak's reviews it would appear that the extent of exposure to the media does not automatically result in early shape and weight concerns. They acknowledge that magazines and television programmes broadly show the expected glorification of thinness and weight loss. However, the small number of studies that have manipulated exposure to such content do not consistently demonstrate an associated increase in body dissatisfaction. A key observation is that only where participants had pre-existing weight and shape concerns was there evidence of media impact resulting in increased body dissatisfaction.

Current socio-cultural influences teach females not only what the ideal body looks like but also how to try to attain it, including how to diet, purge and engage in other disregulating behaviour. It has been argued that children are exposed to these adult beliefs, values, prejudices and stereotypes more so now than at any other time (Postman, 1983). Children appear to adopt and internalise these beliefs as their own. It has been proposed that young girls learn that one of their functions in life is to act as aesthetic adornment (Barnett & Baruch 1980) and that being attractive is interwoven with pleasing and serving others. Even children's books convey messages about the importance of appearance of women and television has served to portray a singular feminine ideal of thinness, beauty and youth (Schwartz & Markham 1985). This

culturally preferred body image has influenced the beliefs and behaviour of children. They learn from diverse agents of socialization that appearance is especially important to girls and that they should be concerned with it.

Once again, good research evidence of this influence is relatively short in supply. Field (1999) examined the perceived influence of fashion magazines on shape and weight contentment and weight control from survey data collected in 1991. Twenty six percent of her sample of 500 girls aged between 9-17 reported reading fashion magazines at least twice per week whilst 85% reported some exposure. Half of the sample agreed with the statement "Do pictures of women in magazines make you want to lose weight?" whilst two thirds of the girls agreed with the statement "do you think that pictures of women in magazines influence what you think is the perfect body shape?" There was an association between the perceived influence of the media and the frequency of reading fashion magazines. Girls who were frequent readers were two to three times more likely than infrequent readers to report exercising or dieting because of a magazine article and to agree that magazines influence what they believe is the ideal body shape. Despite this strong and apparently convincing evidence of the impact of fashion magazines on the initiation of weight and shape concerns causality still remains an issue. One might hypothesise that girls who are already dissatisfied with their body weight and shape are more likely to be drawn to media that reinforce their negative and possibly distorted weight and shape beliefs.

In more recent work, Field, Camargo, Barr Taylor, Berkey, Roberts & Colditz, (2001) have proposed that the most likely mechanism through which frequency of exposure to the mass media increases the likelihood that a girl becomes concerned with her weight or develops eating disordered symptoms is via encouraging girls to compare their bodies with those depicted in the media and inspiring them to look like the

unrealistic models. Social comparison theory describes the need to use others as a source of information about social phenomena such as body shape ideals in order to evaluate one's own attitudes and self-perception. It would follow therefore that those with high social comparison needs may be more likely to use media images and be more sensitive to their portrayal in evaluating their own body image. Field et al., (2001) found that independent of age and BMI, both girls (odds ratio[OR]:1.9; 95% confidence interval [CI]: 1.1-1.3) and boys (OR:2.7;95% CI: 1.1-6.4) who reported making a lot of effort to look like same sex figures in the media were more likely than their peers to become very concerned with their weight.

Further research is needed within this area and should focus on the characteristics of individuals that make them more or less susceptible to media images. It would be desirable to move away from investigating what types of media have the most impact on children's weight and shape concerns and instead ask what types of children or what characteristics of children make them more vulnerable to body focus media. It is also important to acknowledge that media engagement is an active process and that for much of the time children's engagement with the media is largely pleasurable and informative (Levine & Smolak 1998).

#### 1.4.2 Peers

The media is not the only potentially influential source of the socio-cultural message that thinness is important for women and girls. During early adolescence, girls in particular value the opportunity to seek advice and support from friends regarding personal issues such as self-control and attractiveness (Berndt & Perry, 1990). From the age of 12 and onwards parents become less important as support providers, although they rarely become unimportant (Berndt & Hestenes, 1996). Given that the role of peers

in the transmission and prioritisation of weight and shape issues should increase and change with age it is disappointing to note that this intra-generational transmission is largely ignored in the research prior to adolescence. Maloney et al., (1989) found that 45% of 7-13 year olds had a friend who was dieting and 16% agreed that their friends would like them more if they were thinner. Although frequency was not reported, Pyle et al., (1981) found that suggestions from friends to lose weight were often followed by dieting episodes associated with the onset of bulimia. Mitchell et al., (1986) found 45% of bulimics said they had initiated bingeing and purging following pressure from a friend to lose weight.

In relation to social comparison both Wertheim et al., (1997) and Nichter & Vuckovic (1994) have identified a process amongst adolescents involving “fat talk”, in which one girl says “I’m so fat”, and the second girl says “no you’re not”, but then thinks “If she thinks she is too fat maybe I am too!” In a review of the limited literature, Paxton (1996) gives several examples of the ways that talking about weight and dieting (‘fat talk’) could be functional in adolescent peer group interactions. By having high numbers of dieting friends it increases the likelihood of exposure to giving and receiving of weight control information and advice. In addition, by talking about dieting with friends it serves to highlight issues regarding thinness and heightens awareness of dissatisfaction with particular body areas. By sharing these sentiments this may enhance the feeling that they are normative and promote affiliation with a particular group. However there is little evidence to support the notion of peers providing direct encouragement to diet (Paxton et al., 1991). Instead, Muir et al.’s, study (1999) supports the importance of social comparison processes in the initiation of diets in young adolescents.

There is evidence to suggest that peer opinion and behaviour are important before adolescence. However we know relatively little about how these mechanisms operate. Research with younger age groups conducted by Levine et al., (1994) found that 'peer messages' correlated with both dieting and ChEAT scores. In addition, Barr, Sharp, Shisslak, Bryson, Estes, Gray, McKnight, Crago, Kraemer & Killen, (1998) noted that the perceived importance that peers put on weight and eating strongly predicts weight concern in 9-12 year old girls.

Barr et al., (1998) found that teasing about weight predicted weight concern in 11-15 year-old girls, but not in 9-12 year olds. Thompson, Coover, Richards, Johnson & Cattarin, (1995) found that past episodes of teasing related to later adolescent shape and weight concerns. In response to the inability to distinguish whether the teasing related to issues around overweight or underweight, Murphy & Hill (1999) examined the levels of overweight victimisation in 12-year old girls and boys. They found that 12% of the 450 children studied described themselves as victimised for being overweight. These children were heavier than their non-victimised peers although half were normal weight for age. In addition, victimisation was significantly associated with dietary restraint even when actual weight was controlled for. This was also associated with a range of weight loss behaviours including fasting.

The role of peers and peer behaviour is clearly of significance to early weight concern and dieting and peer influence appears to vary across the age range. Although studies are suggestive, methodological limitations and the paucity of studies directly assessing peer propagation of socio-cultural pressures preclude any firm conclusions. Nevertheless these findings are of interest, are encouraging and represent a complex and interesting dynamic which warrants further more detailed investigation.

### 1.4.3 Parents

As the primary socialisation agent the family is in a unique position to impart sociocultural messages to young females. Research that has examined the role of parents and peers on children's problem eating attitudes and behaviours is fairly consistent with the research that has investigated the influence of parents and peers on children's body image concerns. Dieting by mothers has been shown to predict dieting concerns among girls (Hill & Pallin, 1998; Hill, Weaver & Blundell, 1990; Smolak, Levine & Schermer, 1999). Girls who report that their mother is on a diet are also more likely to demonstrate dieting concerns and behaviours. Furthermore, Smolak et al., noted that perceived encouragement to lose weight from both mother and father has been shown to be related to dieting cognitions and behaviours in girls.

It is therefore likely that parents act as an important vehicle transmitting these concerns, and that their attitudes to weight and dieting are conveyed to and accepted by their children from an early age. In an important forerunner to the present study Hill, et al., (1990) set out to investigate whether dieting mothers influence their daughters dieting, and share susceptibilities which break their dieting resolve.

The study was divided into three phases. In phase one, 52 girls aged between 9-11 completed a dietary restraint questionnaire. In phase 2, the 10 highest scores on the restraint scale and 10 lowest scores were re-interviewed and completed two further questionnaires. In phase 3 the mothers of the 20 girls were interviewed at home and completed the restraint questionnaire, Eating Attitudes Test (Garner & Garfinkel, 1979) & Eating Patterns Questionnaire (Bennett, 1982). Hill et al., found a strong family link between mothers and their 10-year-old daughters in their motivation to diet. Furthermore, highly restrained daughters and mothers shared susceptibility to the disinhibitory effects of negative mood states, an effect frequently described by adult

dieters and bulimics (Cooper & Bowskill, 1986). The reasons for this familial association are diverse and may reflect the operation of both genetic and environmental variables, such as weight status, propensity to gain weight, food preferences and family economics. The importance of this association lies in the identification of highly restrained 10-year-old girls, in the risk represented by early dieting for later eating problems, and in the description of certain family features which characterize anorexic and bulimic families (Kog & Vandereycken, 1985).

Levine et al., (1994) suggested that weight control behaviours among young girls are modelled partially on their mothers' behaviour. Girls whose mothers diet and are concerned with their weight and shape are more likely than their peers to develop unhealthy weight control practices. Comparable data are lacking for boys. Smolak et al., (1999) observed that comments by mothers had a larger impact than those by fathers and that daughters were more affected than sons by the comments. Mitchell et al., (1986) also noted that 53% of bulimics initiated bulimic behaviour following pressure from their family to lose weight.

Field et al., (2001) found that independent of age and BMI, parental influences were predictive of becoming highly concerned with weight and becoming a constant dieter. Children who perceived that their mother was frequently trying to lose weight were more likely to become highly concerned with weight or constant dieters, thus offering support for the role mothers play in the transmission of cultural values about desirable body weight and shape (Hill et al., 1998; Pike & Rodin 1991; Smolak et al., 1999). However the child's perception of thinness/ lack of fatness to the father was more important than their perception of its importance to the mother.

Parents are not merely passive in modelling their weight concerns for their children. There is evidence of active parental involvement. In considering direct

parental involvement Smolak et al., (1999) examined the relative contributions of mothers and fathers direct comments about their child's weight and modelling of weight concern through their own behaviour. They found that fourth and fifth grade children were affected by direct parental comments regarding weight and shape especially by the mother and that the girls appeared to be more affected than the boys. They conclude that both parents may contribute to children's, and especially girl's, fears about being fat, body dissatisfaction and weight loss attempts.

The association between body weight of children and their parents is known to be influenced by both genetic and cultural factors. However little is known about the relationship between weight concerns and weight control practices of parents and their children. In identifying the family as a route of transmission and acquisition it is perhaps more accurate to read 'parental', or more specifically 'maternal'. The majority of the research described has focussed mainly on mothers and their influence on their daughters. Mothers are still regarded as the gatekeepers of family nutrition. In addition they are the most obvious role models of eating and weight issues for growing daughters. There is a growing body of literature that recognises their facilitation of early dieting. It would not be unreasonable to predict a close correspondence between weight and eating attitudes of mothers and daughters, the assumption being that parents either model or directly encourage dieting.

## **1.5 Family dynamics**

### **1.5.1 The psychosomatic family**

Family pathology has been under investigation since anorexia nervosa was first identified. However it is still difficult to describe and identify archetypal parents of anorexic offspring. There has been some success in looking at family patterns of



interaction. Minuchin, Rosman & Baker (1978) conducted the best-known analysis of family functioning. They identified the anorexic family as enmeshed, over protective, rigid and lacking in conflict resolution. Subsequent to this a more mixed picture has emerged. However there is still support for the notion of an unhealthy interaction in eating disordered families (Kog & Vandereycken 1985; Waller & Hartley 1994).

An extensive theoretical and clinical literature suggests that familial factors contribute to the development of eating disorders. Several mechanisms have been proposed to explain findings of familial aggregation of eating disorders (Strober, Lampert, Morrell, Burroughs & Jacobs, 1990), and similarities between mothers and daughters on measures of eating disorder symptoms (Attie & Brooks-Gunn, 1989; Pike & Rodin, 1991). Social learning theory proposes that parents are important agents of socialization who through modelling, feedback and instruction influence their child's body image and eating behaviour. However very little is currently known about parent's attitudes concerning their child's physical appearance and eating behaviour or about factors that influence parents' attitudes or behaviours concerning their children's weight and eating.

Within our cultural stereotypes, mothers are more likely be involved in controlling their children's eating behaviour and held more responsible for their child's physical appearance. Smetana (1988) found that mothers were perceived by their spouses and by their children as being in charge of enforcing family norms concerning physical appearance. The gender of a child is likely to influence how parents perceive that child's physical appearance. Parents of overweight daughters are reportedly more concerned about their children's weight and are more likely to restrict their daughter's access to food than parents of overweight sons (Costanzo & Woody, 1979).

Parent's attitudes about their own physical attractiveness may influence their feelings about their child's physical appearance. As argued earlier, parents are not merely passive in modelling their weight concerns for their children. Not only is there evidence of active involvement, this may be related to their own weight and shape concerns. For example, Striegel-Moore & Kearney-Cooke, (1994) found parents of 6-11 year olds, who themselves had been on a weight loss diet in the last year, were more likely to help their child lose weight than parents who had not been on a diet. The age of the child was also found to be a significant factor, with younger children being regarded in a more positive way and receiving more praise and encouragement and less criticism of their physical appearance. They concluded that despite growing concerns over childhood obesity and inactivity most parents maintain a positive view of their child's body image, eating behaviour and exercise habits. The data suggest that parent's attitudes and behaviours related to physical appearance tend to change during the child's later school years.

A growing consensus among researchers and clinicians implicates family related factors in this emergence of disordered eating in adolescence (Attie & Brooks-Gunn, 1989; Bruch, 1978; Johnson-Sabine, Wood, Patton, Mann & Wakeling, 1988; Minuchin et al., 1978). Accordingly, Garfinkel & Garner (1982) proposed that women with eating disorders have parents who are preoccupied with weight and eating, and who use external standards to evaluate self worth. However, Garfinkel, Garner, Rose, Darby, Brandes, Hanlon & Walsh, (1983) found that parents of children with anorexia, as a group, did not differ from parents of controls regarding weight or eating concerns or in judging their daughters current or ideal weight. Similarly, Steiger, Stotland, Ghardirian & Whitehead, (1995) found no significant increase of eating or weight concerns in first-

degree relatives of women with eating disorders compared with normal dieters and non-dieting controls.

In contrast, controlled studies of mothers of daughters with disordered eating patterns have produced consistent evidence of increased maternal eating concerns. Gershon, Schreiber, Hamovit, Dibble, Kaye, Nurnberger, Anderson & Ebert, (1983) found that mothers of eating disordered adolescents had a history of dieting more frequently than mothers of controls. Pike & Rodin (1991) found that mothers of eating disordered daughters had more disordered eating problems (as measured by certain EDI sub-scales) than mothers of control participants. Moreno & Thelen (1993) reported that mothers of bulimic daughters were more likely to perceive their daughters as overweight and encouraged their daughters to diet and exercise more. Pike & Rodin (1991) concluded that daughters may be pressured into extreme dieting by their mothers criticism of their weight and may learn disordered eating patterns by modelling their mothers' behaviours. Supporting this, Striegel-Moore & Kearney-Cooke (1994) found a strong relationship between mothers dieting and the extent to which they encouraged their child to diet. Mothers and daughters have also been shown to share similar attitudes about diet and weight (Hill et al., 1990; Pike & Rodin, 1991).

Few studies have specifically examined fathers eating attitudes and behaviours. Striegel-Moore & Kearney-Cooke (1994) suggested that fathers' dieting might also impact on children. They found 13% of mothers and 10% of fathers had helped their child to diet. However, Moreno & Thelen (1993) found no significant difference between fathers of bulimic versus non-eating disordered daughters.

The bulk of the evidence from the studies reviewed suggests a strong correspondence in dieting behaviour and disordered eating between mothers and daughters. Daughters with disordered eating may have been actively encouraged to diet

by their mothers. An additional issue concerns the mechanism of transmission of influence: Is it passive modelling or is it the result of direct parental encouragement? Despite a growing body of research, in reality it is very difficult to disengage these factors. What the studies do confirm is the influence held by parents and the need for including parents in moves to reduce unnecessary weight control.

### 1.5.2 Mothers with eating disorders - the impact on their children

It is well established that people with eating disorders commonly have difficulties in interpersonal relationships (Garfinkel & Garner, 1982; Humphrey, 1989). These interpersonal difficulties may well extend to their relationships with their children. The relationship between a mother with an eating disorder and her young child are of special interest since feeding is one of the critical early tasks for parents and feeding is also one of the most important ways parents communicate with their infants (Dunn 1980).

There is evidence of the mother's eating disorder impinging directly upon the infant. Lacey & Smith (1987) noted that some women with bulimia were concerned that their babies were overweight and tried to slim them down. Stein & Fairburn (1989) noted that mothers were concerned about their child's size as well as difficulties with feeding. Stein, Wooley, Cooper & Fairburn, (1994) found that mothers with eating disorders were more intrusive and less facilitating during both mealtimes and play. They also expressed more negative emotion during mealtimes but not during play. It was noted that the index mothers showed more conflict during mealtimes and their infants were less cheerful during both mealtimes and play. Overall, their findings showed evidence of a relationship between eating disorder psychopathology in mothers

and disturbance in parenting, mother-infant interaction and infant development at one year.

There is increasing evidence that parental psychiatric disorder may adversely influence a child's development (Rutter 1989). It might be predicted that feeding and general development of children where their mother has an eating disorder may be adversely affected. Stein & Fairburn (1989) found that the mother's eating disorder affected the way they cared for their child. In some this was a direct impact in that mothers had to absent themselves during episodes of overeating and vomiting. Their concern with weight and shape militated with breast-feeding and was associated with undue concern about their children's weight and shape, which in turn affected how they were fed.

Active eating disorder symptoms during pregnancy increase the risk of complications. Low pregnancy weight and low weight gain during pregnancy are strongly associated with low infant birth weight, (Abrams & Laros, 1986; Treasure & Russell, 1988). Other complications that have been noted include increased miscarriages in actively bulimic women (Mitchell, Seim, Glotter, Soll & Pyle, 1991), prematurity and higher perinatal mortality (Brinch, Isager & Tolstrup, 1988). It is clear that intrauterine growth is affected in women with eating disorders (Waugh & Bulik 1999). However in Waugh & Bulik's study they noted that the observed differences at birth did not persist after six weeks. In addition there was no delay in the achievement of the primary developmental milestones, suggesting no gross impairment. The mothers did experience problems with breast-feeding and felt too self-conscious of their bodies to continue with this.

One of the most consistent yet concerning findings relates to the nature of mealtime interaction between mothers with eating disorders and their infants. The

absence of positive comments during mealtimes and the failure to eat with their children suggest food and mealtimes continue to be an uncomfortable experience for women with a history of eating disorders (Waugh & Bulik 1999). Modelling and encouragement are important components of teaching children how to eat rich and varied diets. This once again has major implications for preventative work within these families and emphasises the need for additional support for these mothers during the child's early years to promote positive attitudes towards eating and food intake.

Stein et al., (1994) found that infants of mothers with eating disorders weighed less on average than comparison infants. It emerged that the strongest predictor of infant weight was the level of conflict between mother and infant. Mealtime conflicts were characterised by a battle for control, which led to a disruption in feeding.

From very early in a child's life, mealtimes provide a regular daily situation that needs to be negotiated by parents and children and provides an opportunity for children to assert their own developing autonomy. Conflict at such time can have an adverse impact on the child's development. Stein, Wooley & McPherson, (1999) found much higher levels of conflict between mothers with eating disorders and their siblings compared to their control group. They also noted that the index group of mothers had more difficulty in identifying the infant's cues and putting the child's needs first compared to the control group.

Mealtimes are also an opportunity for the infant to experiment with food and its texture. However, where a parent does not allow food to be handled, keeps it out of reach and blocks messiness at all cost, thus denying the infant any feeding autonomy, the parent is in effect denying the infants needs. If this persists and neither side gives in then conflict is likely to ensue. In contrast, a parent who tries to negotiate through such difficulties provides a model of resolving disputes and acknowledges to the infant that

his or her cues and feelings have been recognised. This in turn confirms to the infant that their needs are acceptable and helps in the development of self-awareness and improved self-esteem. Stein et al., (1999) believed this was because the mothers eating psychopathology disrupted aspects of parental functioning. It interfered with their responses to potential antecedents to conflict. The mothers with eating disorders found infant feeding highly stressful and were unable to put aside concerns about mess. The relationship between a parent and a child is not a one-way relationship. The child's attitude and behaviour also has an impact on the parent and it is important to acknowledge that this is a reciprocal relationship.

### 1.5.3 Eating problems and feeding disorders in children – the impact on their mothers

Failure to thrive in young children is estimated to account for between 1-5% of paediatric hospital admissions (Skuse, Wolke & Reilly, 1992). Of these children 30-40% are given a diagnosis of non-organic failure to thrive. The aetiology of this has received considerable attention over recent years. Possible explanations include emotional deprivation, adverse environmental factors and deficient nutritional intake. Several studies have identified parental health beliefs in leading to a restriction in the child's food intake (Pugliese, Lifshitz, Grad, Fort & Marks-Katz, 1983). It has also been reported that children of mothers with an eating disorder have feeding difficulties or poor weight gain (Stein & Fairburn, 1989). Lacey & Smith (1987) reported that some mothers with bulimia nervosa admitted to slimming their babies. These findings raise the question as to whether the presence of eating disorder psychopathology in mothers may be an aetiological factor in the development of non-organic failure to thrive in their children.

McCann, Stein, Fairburn & Dunger, (1994) compared 26 children with non-organic failure to thrive and their mothers with 26 individually matched women who had participated in a large community survey. They found that none of the mothers in either group fulfilled DSMIII-R diagnostic criteria for anorexia or bulimia nervosa. However the index group scored significantly higher on the restraint subscale than the comparison group. Sixty one percent of the mothers blamed themselves for their child's poor weight gain. Despite each child's weight being at or below the third centile, 58% believed their child to be of normal weight or just slightly underweight. Thirty eight percent perceived their child's shape as normal and 34% stating their child was only slightly thin. Fifty percent of mothers reported that they restricted their child's intake of sweet foods. In addition, 30% admitted to restricting other types of food including fried foods and meat as they considered them to be unhealthy and fattening. After referral 54% attempted to increase their child's food intake by having more frequent meals and increasing the quantity of food given. These findings are striking in that one would expect mothers of children with non-organic failure to thrive would already be attempting to increase their child food intake rather than restrict it.

Stein, Stein, Walters & Fairburn, (1995) found evidence to support the notion that feeding disturbances in children are specifically associated with disturbed eating habits and attitudes among mothers. Over 12 months the mothers of all children with ICD-10 diagnoses of a feeding disorder who were referred to local child & adolescent health services in a geographical area were identified (n=32). Thirty index families agreed to participate in the study. A comparison group of 30 children also referred to the clinic with behavioural problems was used and matched for age and gender. The children's ages ranged from 2-12 years. There were 18 boys and 12 girls. They found that the index group of mothers scored significantly higher on all five subscales of the



eating disorder examination-questionnaire compared to the comparison group. Causal relations cannot be determined from a cross sectional study, however it is possible that abnormal attitudes to body shape and weight and disturbed eating habits among mothers play a role in feeding disturbances in children. Further research is needed. However it is worth noting that when children present with feeding disturbances there should be careful and sensitive questioning about the parents' own eating habits and attitudes.

#### 1.5.4 The mother-daughter relationship

As previously stated it is now well established that dieting behaviour is common amongst adolescent girls. Attie and Brooks-Gunn (1989) examined the emergence of eating problems in adolescent girls as a function of pubertal growth, personality development and family relations. They found that girls who felt most negatively about their bodies at 13 were more likely to develop eating problems two years later. More disturbingly there is a growing body of research, which suggests that similar patterns of dieting behaviour can be found in girls aged, as young as 9 or 10 (Hill, et al., 1992; Hill, et al., 1994).

There have been many attempts to pinpoint familial factors in the aetiology of eating disorders and it is becoming clearer that young girls' eating attitudes and behaviour may be linked to their mothers' (Hill, Weaver & Blundell 1990). However, there are clearly methodological and ethical problems inherent in studies of family dynamics of eating disordered patients. An alternative strategy that has been adopted has been to take a step back in the developmental process and investigate groups who present with abnormal eating attitudes but who are not (yet) clinical cases. In one such study, Pike and Rodin (1991) examined the characteristics of 77 mothers of 16-year-old

girls selected on the basis of their daughter's degree of disordered eating. Two subgroups of girls were identified. Participants were contacted by letter and three questionnaires were sent out for completion. The measures used aimed to collect data in relation to family functioning, eating disorder pathology and more specifically mothers' and daughters' weight perception and appearance.

A striking familial correspondence in pathology was revealed. Mothers of daughters with disordered eating reported lower family cohesion although the difference between this group and the comparison group failed to reach significance. However satisfaction with family cohesion did reach statistical significance with the difference between the ideal and current family cohesion score being greatest for the target group. It is possible that family cohesion declines as the degree of disordered eating increases. The mothers of the girls who scored highly on eating disorder symptomatology themselves scored significantly higher than mothers of comparison low scorers on a compound of three EDI subscales: 'drive for thinness', 'bulimia' and 'body dissatisfaction'. Furthermore, they reported dieting at a younger age, thought their daughters should lose more weight, and were less satisfied with family cohesion (relative to ideal) than the comparison mothers. In other words there was evidence consistent with the mothers' role modelling concerns with weight and dieting, a process, which was not entirely passive. The latter finding that the mothers of symptomatic girls (as well as the girls themselves) were less satisfied in their perception of family functioning, is also in accord with the previously described literature on family systems in eating disorders.

Overall this study suggests that daughters' attitudes and behaviour were influenced by their mothers both passively as role models and more directly by pressure to be thin. Serving as role models for their daughter's, mothers who are highly

concerned with thinness, dieting and appearance may be more likely to have daughters who are disordered in their eating. Pike & Rodin (1991) believed that mothers of girls with disordered eating would not only be highly self critical about their own weight and appearance but that they would apply the same standards to their daughters. This would place more pressure on their daughters to achieve ideals of thinness and attractiveness. In turn, this would put them at greater risk of becoming eating disordered. These data are consistent with the hypothesis that the transmission of disordered eating may be learned at least partially through daughters modelling their mother's behaviour.

The forces which encourage adolescent girls and adult females to pursue thinness, pervade our environment. It is suggested that parents may act as an important vehicle for these concerns and that their attitudes to weight and dieting are conveyed and accepted by their children from an early age. To continue with this line of argument and investigation requires retreating further in age to a point where weight concerns and dieting behaviour are becoming salient for girls. Body shape dissatisfactions and attempted dieting are no longer the exclusive province of adolescence, but are clearly apparent in a proportion of much younger girls (Hill et al., 1994; Hill, et al., 1992; Maloney, et al., 1989). However, are the determinants of early weight and dieting concerns consistent with those demonstrated in older girls and clinical groups? As noted earlier, it has been found that even in preadolescence such behaviour may be related to parental dieting. So, for example, Hill, Weaver and Blundell (1990) found a strong correlational relationship between the degree of dietary restraint expressed by a group of 10-year-old girls and their mothers. In addition, the mother-daughter relationship and maternal body concerns have been considered central to the development of a girl's body image and eating attitudes (Orbach 1986; Wooley & Wooley 1985). Pike & Rodin (1991) concluded that family factors were significant in

distinguishing between adolescent girls who were eating disordered and those who were not. It is within this context that the present investigation was undertaken.

### 1.6 The present study

The present study was designed to address the ideas put forward by Pike & Rodin (1991), and extend their investigation by examining the relationship between mothers' and daughters' attitudes about dieting and weight concerns and their perceptions of family functioning in a younger non-clinical group. The central research questions were:

To what extent would the dieting behaviour of young adolescent girls correspond to their mothers' concerns about weight and dieting, and

Are particular types of family environment associated with the development of disordered eating?

If early dieting is an important pathway for the development of disordered eating attitudes and behaviours, using reported dieting behaviour to define groups of girls should show similarities in maternal attitudes and behaviour to those found in older adolescents by Pike and Rodin. Accordingly it was hypothesized that;

1. Mothers of young adolescent dieters would be more likely to be concerned with dieting and their own appearance than mothers of a comparison, non-dieting group of girls.

2. Mothers of young adolescent dieters would be more critical of their daughters' appearance than mothers of a comparison, non-dieting group of girls.

3. Mothers of young adolescent dieters would be less satisfied with aspects of family functioning than mothers of a comparison, non-dieting group of girls.

## Chapter 2.

### METHODS

#### 2.1 Participants

Participants in this study were selected from a cohort investigated previously by Hill et al., (1994). Two groups of 20 girls were selected from a single year group of 106 girls who attended state senior schools in the North of England. Parental consent for participation had been obtained as each parent or guardian was contacted by letter (see Appendix 1).

The criterion for selection was the girls' dietary restraint score. The 20 girls with the highest restraint score were identified. A comparison group of 20 girls whose restraint score fell between the 50<sup>th</sup> and 25<sup>th</sup> percentiles was also identified. The mean age of both groups was 11 years, 9 months.

Of the forty mothers or guardians contacted, two had moved away from the area (one high restraint and one comparison) and three refused to participate (one high restraint and two comparison). The next girl most closely meeting the selection criterion replaced these missing participants.

From the girls' surnames, 4 (10%) were from Asian families, the rest were white Caucasian. They were equally distributed between the two restraint groups. They came from a low to middle class urban background. The mothers were grouped according to their daughters' current restraint status. The mean age of those mothers with daughters in the high restraint group was 41.7 years, and for those mothers in the comparison group it was 39.5 years (not significantly different).

All participants were unaware of the criterion for selection. Thirty-one (82 per cent) of the mothers were currently married and 33 (87 per cent) were working either part or full time. Thirty eight of the girls lived with their natural mothers. One lived

with a foster mother and one with her grandmother (both from the comparison group). The maternal data from these two cases were not included in the final analysis

## **2.2 Measures**

The following measures were used:

### **2.2.1 Physical status measures**

#### **Weight and height**

Body weight and height data were collected using standard apparatus and were used to calculate a Body Mass Index (BMI,  $\text{kg/m}^2$ ) for each participant, which was compared with recent UK norms (Committee on Medical Aspects of Food Policy, 1991). Self-report data on height and body weight were also collected from the mothers to enable calculation of their BMI.

#### **Pubertal status**

An indication of pubertal status was provided by menarcheal status at age 11. Girls were classified as either premenarcheal or post menarcheal at 11 years on the basis of their mothers' response to the question "Has your daughter started her menstrual periods"?

### **2.2.2 Self-perception measures**

#### **Body esteem**

Body esteem was measured using a scale devised by Mendelson & White (1982). This questionnaire consists of a series of 24 simple statements requiring a yes-no response (see Appendix 2). It is regarded by its authors as reliable and suitable for children as young as 7 years old. Items with words referring to children were rephrased to allow completion by the mothers (see Appendix 3).

### Body shape preferences

Body shape preferences were indicated on a simple pictorial scale adapted from that developed by Stunkard, Sorenson and Schulsinger (1983) (see Appendix 4). This scale is a series of seven line drawings of a male or female figure, ordered from extremely thin to obese from left to right. Underneath the drawings was a continuous horizontal line forming a visual analogue scale. The assessment has been used in different age groups by several researchers (e.g. Cohen et al., 1987; Fallon & Rozin 1985; Hill et al., 1994). In the present study participants were presented with two of these scales and asked:

- a) Which point on the scale is most like you now?
- b) Which point on the scale would you most like to look like?

These ratings correspond to the choice of (1) currently perceived body shape and (2) preferred body shape. A measure of body shape satisfaction is derived from subtracting the rating of preferred shape from current shape. A difference of zero indicates satisfaction, while a negative value corresponds to a desire to be thinner.

### Self-esteem

Self-esteem was measured using the State Self-Esteem Scale designed by Heatherton & Polivy (1991) (see Appendix 5). This 20 item questionnaire has three subscales: performance self-esteem (seven items), social self-esteem (seven items) and appearance self-esteem (six items), with each scale having a range of mean scores from 1-5. When combined, these subscales yield a total or general self-esteem score. This instrument was selected because of its multifactoral structure, its good reported validity and it was suitable for completion by both age groups.

### 2.2.3 Dietary restraint

Eating behaviour was measured by the Dutch Eating Behaviour Questionnaire (DEBQ), a scale devised by Van Strien, Frijters, Bergers & Defares (1986) (see Appendix 6). This is a 33 item questionnaire that assesses dietary restraint (ten items), emotional eating (thirteen items), and external eating behaviour (ten items). Each scale has a range of mean scores from 1 to 5, and has previously been used in children from the age of 9 (Hill & Robinson, 1991).

### 2.2.4 Family factors

#### Family environment scale

The family environment was measured using a 90-item questionnaire devised by Moos & Moos (1987). The questionnaire has ten subscales measuring the socio-environmental characteristics of families. The cohesion, expressiveness and conflict subscales are components of the relationship dimension. Personal growth is measured by the independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation and moral-religious emphasis subscales. The system maintenance dimension is evaluated by the organisation and control subscales. The real form (Form R), which measures people's current perceptions of their conjugal or nuclear family environments, was used in the present study (see Appendix 7).

#### Dieting history, self-perception and background information

Mothers were asked to provide information relating to their marital status, date of birth, occupation, number of children within the family and their dates of birth (see Appendix 8). An additional set of questions was directed at the information collected by Pike & Rodin (1991). These included information from mothers on weight history (highest, lowest and ideal weight), past dieting behaviour, present eating patterns and



self perception with regard to weight and attractiveness compared with other women of their age. Mothers were also asked about their daughters' ideal weight (in relation to current weight), and their perception of her weight and attractiveness relative to other girls of her age. The daughters completed questions on their own eating patterns, their perceived weight and attractiveness, and also their perception of their mothers' weight and relative attractiveness (see Appendix 9).

The mothers and daughters were both asked to rate themselves in terms of their current weight perception on a 7-point likert scale, (very underweight = -3, about right = 0, very overweight = 3) and in comparison with other women/girls their age on a 5-point attractiveness scale (much less attractive = -2, equally attractive = 0, much more attractive = 3). The mothers were then asked to repeat this for their daughters (i.e. the mothers perception of their daughters weight and attractiveness) and the daughters were asked to do the same for the mothers.

### **2.3 Procedure**

On receiving consent for their participation in the study, mothers and daughters were visited at home usually in the late afternoon or early evening by the researcher. The mothers and daughters completed the assessments at the same time but with great care to ensure that they were done independently. The researcher was present throughout this time to answer any questions and ensure independent completion. It was stressed that all study data would remain confidential and participant identity would not be compromised. The interview and assessment took between 60 and 90 minutes. All measures were checked before terminating the interview to ensure that there were no missing data. The researcher was unaware of the initial restraint status of the girls. The

coding of the subject groupings was not broken until the end of the study when questionnaires from all participants had been scored.

#### **2.4 Data analysis.**

Following the initial scoring of the questionnaires, all measures were analysed by two-way analysis of variance (main factors, restraint and family membership). Students t test was used as a post hoc comparison test between pairs of means.

## Chapter 3.

### RESULTS.

#### 3.1 Physical characteristics

The main physical characteristics for mothers and daughters can be seen in Table 1. There was no significant difference between the mean ages within each group. As would be predicted there was a significant main effect of family on age, height, weight, weight % and BMI with the mothers being older, taller, and heavier and having a higher BMI compared to their daughters (smallest  $F(1,36)=8.11, p<0.1$ )

**Table 1.** Means and standard errors of physical characteristics of the girls in the high restraint and comparison groups and their mothers.

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Age (Yrs, mths)	11,8	11,7	41,6	39,5	
Height (m)	1.49 (0.01)	1.49 (0.02)	1.62 (0.02)	1.62 (0.01)	F**
Height %	101.3 (0.9)	101.0 (1.3)	100.9 (0.9)	101.3 (0.9)	
Weight (kg)	45.3 (2.2)	40.2 (1.7)	64.2 (2.3)	61.4 (1.6)	F**
Weight %	119.9 (5.7)	107.0 (5.0)	103.2 (3.6)	100.9 (2.6)	F**
BMI	20.3 (0.8)	18.1 (0.6)	24.2 (1.1)	23.1 (0.5)	F**

\*  $p<.05$ ; \*\*  $p<.01$ .

F main effect of family

Both the high restraint daughters and their mothers weighed more on average than the comparison group, although the difference failed to reach significance. The high restraint girls were significantly heavier than the comparison girls, and as a group were 13 per cent above their age standardized normative weight. However both groups contained girls who were over and under their normative weight. The high restraint girls had a higher BMI when compared to the other girls ( $t(38)=2.20$   $p<.05$ ). This significant difference was not apparent in the mothers. The mean BMI of both groups of mothers was within the normal range of 20-25 ( $M=24.2$ , vs.  $M=23.1$ ,). However mothers of the high restraint girls had marginally greater past weight range (highest minus lowest weight,  $M=15.0\text{kg}$ ,  $SE=2.4$ ) than mothers of comparison girls ( $M=9.7\text{kg}$ ,  $SE=1.2$ ) ( $t(36)=1.91$ ,  $p=.064$ ). Mothers of the high restraint girls were significantly more likely to eat snacks between meals ( $t(36)=2.19$ ,  $p<.05$ ), and four women in this group reported fasting for a whole day in contrast to only one in the comparison group.

### 3.2 Self-perception

The high restraint group differed significantly from the comparison girls both in their body shape preference and desired weight loss (see Table 2). The high restraint girls' preference for a thinner body shape was mirrored in a desired weight loss of 3.2kg (7.1lb). In their evaluation of their weight 65 per cent of the high restraint group said they felt overweight. In contrast, only 15 per cent of the comparison group reported feeling overweight. The high restraint girls and their mothers saw themselves as having a larger current body shape compared to the comparison group of girls and their mothers. The girls' and mothers' current body figure perception revealed a significant main effect of restraint ( $F(1,36)=6.67$   $p<.01$ ). However only the mean scores between

the daughters were significantly different ( $t(38)=3.64$   $p<.001$ ). The high restraint girls perceived themselves to be almost one line drawing larger than the comparison group of girls. As would be expected there was also a main effect of family with the mothers perceiving themselves as having a larger body shape than their daughters ( $F(1,36)=13.22$   $p<.001$ ).

**Table 2.** Means and standard errors of self-perception measures of the girls in the high restraint and comparison groups and their mothers.

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Current figure	3.66 (0.14)	2.86 (0.17)	4.21 (0.29)	3.81 (0.26)	R*F**
Ideal figure	2.92 (0.09)	2.87 (0.13)	2.97 (0.19)	2.88 (0.12)	
Ideal-current discrepancy	-0.74 (0.14)	-0.01 (0.16)	-1.53 (0.32)	-0.83 (0.24)	R**F**
Body esteem	12.20 (1.33)	15.55 (1.01)	13.00 (0.97)	14.67 (1.16)	
SE performance	3.73 (0.14)	3.96 (0.15)	4.00 (0.13)	3.82 (0.19)	
SE social	3.36 (0.14)	3.68 (0.18)	3.62 (0.17)	3.62 (0.20)	
SE appearance	2.98 (0.18)	3.63 (0.14)	3.10 (0.12)	3.33 (0.17)	R**

\*  $p<.05$ ; \*\*  $p<.01$ .

R main effect of restraint; F main effect of family

It was interesting to note that all four groups held similar beliefs about what their ideal figure would be, and this fell within a very narrow range of 2.8-2.97. The mean body shape satisfaction score, (ideal minus current) showed both family and restraint main effects. The comparison group of girls current perceived weight status ( $M=2.86$ ) most closely matched the ideal ( $M=2.87$ ). The comparison group of girls perceived their current and ideal body figures as almost identical whilst the high restraint girls perceived their ideal figure to be almost one line drawing below their current figure ( $t(38)=3.49$   $p<.001$ ). Both groups of mothers saw themselves as slightly overweight, and both selected preferred body shapes that were significantly thinner than their current shapes. The mean body shape preference of the mothers of high restraint girls was  $-1.53$  ( $SE=0.32$ ,  $p<.001$ ), and for the mothers of the comparison girls was  $-0.83$  ( $SE=0.24$ ,  $p<.01$ ). In other words, the mothers of high restraint daughters desired to be more than 1 1/2 line figures drawings below their currently perceived figure and the mothers of the comparison group almost one figure less. There was a main effect of family ( $F(1,36)=13.84$   $p<.001$ ) with mothers experiencing greater body shape dissatisfaction compared to their daughters. Body shape preference was negatively correlated with body mass index both for the girls ( $r(38)=-0.52$ ,  $p<.01$ ) and their mothers ( $r(36)=-0.60$ ,  $p<.001$ ), showing that those who were heavier had greater body dissatisfaction.

Both the high restraint daughters and their mothers achieved lower body esteem scores compared to the comparison group of girls and their mothers. Unfortunately, the main effect of restraint on body esteem just failed to reach statistical significance ( $F(1,36)=3.79$   $p<.059$ ). However when the mean scores of the daughters were compared, the high restraint girls were found to have significantly lower body esteem compared to the comparison group ( $t(38)=2.01$   $p<.05$ ).

The mothers' and daughters' scores on the performance and social subscales of the self-esteem questionnaire were virtually identical. However it was the high restraint group of girls who achieved the lowest mean scores on all the self-esteem subscales. Interestingly there was a main effect of restraint on the appearance subscale ( $F(1,36)=6.36$   $p<.05$ ) with both high restraint daughters and mothers having lower appearance self esteem. The difference between mean scores failed to reach significance between the two groups of mothers. However the comparison group of girls did have a significantly higher self-esteem appearance score compared to the high restraint girls ( $t(38)=2.86$   $p<.01$ ).

### 3.3 Eating behaviour

The mean levels of restrained, emotional and external eating for all participants are shown in Table 3. There was an overall significant main effect of restraint ( $F(1,36)=18.89$   $p<.001$ ). As would be expected there was a significant difference between the mean scores of the comparison group and high-restrained girls ( $t(38)=9.11$   $p<.001$ ), since this was the variable on which the girls were allocated to their groups. Both groups of mothers showed very similar levels of restraint, which was comparable to that of the high-restrained girls. There was also a significant restraint by family interaction ( $F(1,36)=18.51$ ,  $p<.001$ ), which showed the difference in dietary restraint between those three groups and the comparison low restraint daughters. Looking at the change in restraint score of girls from 9 to 11 years old, there was a significant restraint by age interaction ( $F(1,38)=8.02$ ,  $p<.01$ ). The low restraint group reduced from 2.32 (0.23) at age 9 to 1.40 (0.06) at age 11. The high restraint group did not change. In all, six girls changed restraint status (high to low and vice versa) from time one to time two.

There were no significant differences with regard to emotional or external eating, although it would appear that daughters rated themselves as slightly more susceptible to external factors compared to their mothers.

**Table 3.** Mean scores and standard errors for the eating behaviour questionnaire for mothers and daughters.

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Restrained eating	2.83 (0.14)	1.40 (0.06)	2.84 (0.18)	2.84 (0.23)	R**F** RxF**
Emotional eating	2.26 (0.15)	2.29 (0.18)	2.43 (0.15)	2.24 (0.17)	F**
External eating	3.23 (0.13)	3.05 (0.15)	2.95 (0.09)	2.83 (0.16)	

\* $p < .05$ ; \*\*  $p < .01$ .

R main effect of restraint; F main effect of family; RxF interaction.

### 3.4 Eating patterns

Details on daughters' and mothers eating patterns are presented in Table 4. The meal patterns were fairly consistent across the groups. The possible range of scores was 0-3 with 0 corresponding to never eat and 3 corresponding to always eat. There was a significant main effect of family ( $F(1,36)=5.90$   $p < .05$ ) on breakfast with mothers eating breakfast more frequently than daughters and the high restraint group eating breakfast the least. Two of the high restraint girls said they never ate breakfast and three said they had fasted in the past for a whole day. None of the comparison girls reported engaging in either of these restrictive behaviours.



Almost all participants ate lunch and an evening meal, and sometimes had supper. There was a significant difference between the mean snack scores of the mothers ( $t(36)=2.19$   $p<.05$ ), whereby mothers of highly restrained daughters reported eating more snacks compared to the comparison group of mothers. There was also a significant main effect of family on snacks with the daughters eating more snacks compared to the mothers. ( $F(1,36)=13.28$   $p<.001$ ). There was no difference between the number of snacks consumed by the daughters.

**Table 4.** Mean scores and standard errors for mothers and daughters meal patterns.

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Breakfast	1.80 (0.24)	2.25 (0.20)	2.45 (0.23)	2.44 (0.23)	F*
Lunch	2.55 (0.17)	2.65 (0.15)	2.45 (0.18)	2.28 (0.24)	
Evening meal	2.85 (0.11)	2.90 (0.10)	2.85 (0.11)	2.83 (0.09)	
Supper	1.05 (0.25)	1.25 (0.18)	1.22 (0.24)	1.22 (0.25)	
Snack	1.65 (0.17)	1.60 (0.13)	1.30 (0.11)	0.89 (0.16)	F**

\* $p<.05$ ; \*\*  $p<.01$ .

F main effect of family.

An examination of family structure of the groups showed no difference in either the number of children in the family or in the girls' birth order. However, the girls in the

high restraint category were twice as likely to have a brother (35 per cent) than the comparison girls (17 per cent).

### 3.5 Weight perception and self attractiveness

#### Mother's perception of their daughters

The questionnaire on dieting history and self-perception showed that both groups of mothers perceived their daughters current weight to be within 1kg of their ideal weight and rated it as 'about right'. This shows that the mothers were at odds with the self-perception of the high restraint girls who rated themselves on average as slightly overweight. Table 5 summarises the mean and standard errors of the mothers and daughters ratings on self-attractiveness and self-perception.

The mothers did differ in their assessment of their daughter's attractiveness. Both groups of mothers placed their daughters slightly above the attractiveness of other girls their age. However, mothers of high restraint girls rated their daughter's attractiveness as significantly lower than mothers of the comparison girls ( $t(36) = 2.12$ ,  $p < .05$ ).

#### Mothers dieting and self-perception

There was no difference in the level of dietary restraint of the mothers of the high restraint girls ( $M=2.84$ ,  $SE=0.18$ ) and mothers of the comparison group ( $M=2.84$ ,  $SE=0.23$ ) as described in section 3.1.3 (see Table 3). Both high restraint mothers and comparison mothers had previously dieted, 75 per cent and 67 per cent respectively, although only 33% and 23% were currently dieting to lose weight. Moreover, there was no difference in the age at which they first dieted ( $M=25.7$ ,  $SE=2.7$  vs.  $M=22.6$ ,  $SE=2.1$ , respectively), or in the maximum weight loss achieved by dieting ( $M=6.0\text{kg}$ ,  $SE=1.4$  vs.  $M=5.2$ ,  $SE=0.9$ ). Both groups of mothers saw themselves as slightly overweight, and selected preferred body shapes that were significantly thinner than their

current shapes. In addition, both groups of mothers rated themselves as equally attractive as compared to other women of their age.

**Table 5.** Mothers and daughters current weight perception and self-attractiveness ratings, (means & standard errors).

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Weight perception of daughter	1.05 (0.23)	-0.15 (0.18)	0.15 (0.15)	0.00 (0.18)	R**F* * RxF**
Self attractiveness of daughter	-0.45 (0.17)	-0.10 (0.19)	0.45 (0.17)	1.00 (0.20)	R*F**
Weight perception of mother	0.70 (0.29)	0.35 (0.21)	1.05 (0.25)	0.89 (0.20)	F**
Self attractiveness of mother	0.10 (0.16)	0.30 (0.16)	-0.10 (0.18)	0.22 (0.17)	
Desired weight difference	-7.12 (1.37)	-3.03 (1.32)	-7.08 (1.78)	-5.60 (0.89)	

p<.05; \*\* p<.01.

R main effect of restraint; F main effect of family; RxF interaction.

#### Daughters' perception of their mothers'

The girls in both groups perceived their mother to be just above the right weight, with a tendency for the high restraint daughters to rate their mothers as slightly overweight. The daughters rated their mothers as equally attractive compared with other women of their age as did the mothers themselves.

#### Daughters dieting and self-perception

Both groups of girls considered themselves to be equally attractive compared with other girls the same age. Interestingly there was a main effect of family ( $F(1,36)=42.01$   $p<.001$ ) with mothers generally perceiving their daughters to be slightly more attractive than average. The comparison mothers rated their daughters as slightly more attractive whilst the restraint group of mothers believed their daughters to be of equal attractiveness to other girls of the same age. There was also a main effect of restraint ( $F(1,36)=4.69$   $p<.05$ ) with both the high restraint daughters and their mothers perceiving the girls as less attractive than did those in the comparison group. Overall the comparison group of mothers had a more favourable perception of their daughters in terms of attractiveness and weight compared to the high restraint mothers.

The high restraint girls perceived themselves as slightly overweight compared to the comparison group ( $t(38)=4.04$   $p<0.001$ ), or either group of mothers (interaction,  $F(1,36)=1.04$   $p<.01$ ).

The weight difference score showed that all participants wanted to weigh less than they currently did, with the high restraint daughters and their mothers desiring to lose on average 7kg. There was no significant main effect of restraint or family although the high restraint girls wanted to weigh on average 4kg less than the comparison group of girls ( $t(38)=2.25$   $p<.05$ ).

### **3.6 The family environment**

Daughters' and mothers' responses on the Family Environment Scale are summarised in Table 6. They showed main effects of the daughter's restraint status on three subscales.

The mothers perceived there to be more cohesion within the family compared to their daughters ( $F(1,36)=15.05$   $p<.001$ ). There was a main effect of restraint with the

comparison group of mothers and daughters perceiving there to be more cohesion within their families compared to the high restraint mothers and daughters ( $F(1,36)=5.7$   $p<.05$ ). The degree of emphasis on ethical and religious values showed a significant main effect of restraint ( $F(1,36)=8.69$   $p<.01$ ) with high restraint daughters and their mothers placing less emphasis on moral and religious issues compared to the comparison group.

Mothers perceived there to be more emphasis on moral and religious issues compared to their daughters within the family (main effect of family ( $F(1,36)=5.91$   $p<.05$ ). The comparison group of girls and mothers reported a higher degree of organisation within their families compared to the high restraint girls and their mothers (main effect of restraint, ( $F(1,36)=8.0$   $p<.01$ ). In addition the comparison group of mothers reported a significantly higher degree of organisation compared to the high restraint mothers ( $t(38)=3.23$   $p<.01$ ). There were no significant main effects of restraint or family on perceptions of control within the family, although the high restraint group of mothers and daughters both perceived somewhat more control within their families compared to the comparison group of mothers and daughters.

Both groups of girls perceived there to be less expressiveness within their families compared to the mothers (main effect of family ( $F(1,36)=12.16$   $p<.001$ ). All groups experienced similar amounts of conflict within their families. Daughters generally experienced less independence within the family than their mothers with the comparison group of mothers and daughters experiencing more independence than their high restraint counterparts. The daughters also felt there was more emphasis placed on achievement compared to their mothers, although these differences all failed to reach significance.

**Table 6.** Mean scores and standard errors for the Family Environment Scale for mothers and daughters

	Daughters		Mothers		
	High restraint	Comparison	High restraint	Comparison	
(N)	(20)	(20)	(20)	(18)	
Cohesion	5.05 (0.58)	6.35 (0.44)	6.40 (0.44)	7.50 (0.32)	R*F**
Expressiveness	4.10 (0.51)	4.45 (0.33)	5.85 (0.43)	5.67 (0.49)	F**
Conflict	3.60 (0.43)	3.55 (0.46)	3.90 (0.50)	4.11 (0.46)	
Independence	4.85 (0.26)	5.35 (0.33)	5.50 (0.46)	5.67 (0.38)	
Achievement Orientation	5.45 (0.36)	5.55 (0.32)	4.95 (0.44)	4.83 (0.45)	
Intellectual Cultural	4.80 (0.50)	5.15 (0.55)	5.50 (0.54)	5.72 (0.58)	
Active Recreational	5.50 (0.49)	5.45 (0.47)	5.25 (0.38)	6.11 (0.47)	
Moral Religious	2.70 (0.35)	3.90 (0.55)	3.15 (0.38)	5.28 (0.68)	R**F*
Organisation	3.95 (0.46)	4.70 (0.39)	3.90 (0.38)	5.67 (0.39)	R**
Control	4.65 (0.39)	3.85 (0.48)	5.00 (0.44)	4.56 (0.33)	

\* $p < .05$ ; \*\*  $p < .01$ . R main effect of restraint; F main effect of family.

Overall, the high restraint group of girls' ratings on the cohesion and moral-religious emphasis subscale tended to be lower than those of the comparison girls and both groups of mothers, at a point of one standard deviation below the normative mean (Moos & Moos, 1987). The calculation of a family incongruence score (the mean child parent difference across all subscales) revealed no difference in the extent of disagreement in family members' perception of current family climate between the restrained daughters and their mothers and comparison families.

## **Chapter 4.**

### **Discussion**

#### **4.1 Overview of results**

This study set out to examine whether the ideas put forward by Pike & Rodin (1991) regarding the relationship between mothers' and daughters' attitudes about dieting and weight concerns and their perceptions of family functioning in eating disordered adolescent girls were applicable to a younger non-clinical population. Pike & Rodin (1991) found higher levels of disordered eating in mothers of symptomatic 16 year-old girls. This suggested an agreed family agenda of weight concern, drive for thinness and dieting. This view is also supported by findings of shared dieting motivation in younger mother-daughter pairs (Hill et al., 1999; Ruther & Richman 1993). Specifically, the present study attempted to determine to what extent the dieting behaviour of young adolescent girls corresponded to their mothers' concerns about weight and dieting. In addition, it also tried to identify whether there were particular types of family environment associated with the development of early dieting.

Finding that mothers of high restraint girls showed differences in their own eating style, perceived their daughters to be less attractive relative to the comparison group of mothers perception of their daughters and were dissatisfied with some aspects of family functioning all parallel the results of Pike & Rodin (1991). The consistency of outcome is in accord with the view that mothers play some part in the transmission of the cultural values regarding weight, shape and appearance. However differences in maternal dietary restraint between the two groups were not apparent. Whether this could be due to the ubiquity of weight dissatisfaction and weight control attempts or some other explanation will be discussed below along with the other main findings of the study.



## 4.2 Girls' dietary restraint and dieting motivation

The present study has confirmed the high levels of dieting motivation in pre-adolescent girls. As such it concurs with the findings of Wardle & Marsland (1990) who concluded that "many girls are already weight conscious and prepared for a dieting career by the time they are 11". Why are girls of this age concerned about dieting? Three possibilities related to the girls' self-perception will be discussed: as a response to overweight, as a response to feelings of body dissatisfaction, or as a response to earlier puberty.

The study found that the high restraint girls had a significantly higher BMI than their low restraint counterparts, and as a group were 13% above their age standardised normative weight. It might be argued therefore that their dieting motivation was in some ways legitimate given their higher BMI. Indeed, this link between overweight and dietary restraint has been observed in other studies of children, adolescents and adults (e.g. Wardle & Beales 1986; Hill et al., 1989, 1992). However, the association is not perfect since in both groups of girls studied there were those who were over and under their normative weight. This same loose association has been observed by Hill et al., (1989), who noted that between 40-50% of the 9 and 14-year olds studied were more than 10% above their age standardised weight norm. Not only were the rest below this arbitrary weight threshold, 3 girls (out of 42) could be considered underweight (<90% of their weight norm).

Related to body weight is body dissatisfaction. Hill et al., (1994) showed that body dissatisfaction increased in overweight and obese girls and that it (and BMI) was a significant predictor of dietary restraint at age 9. For older adolescent girls, dissatisfaction with weight and/or shape is more strongly related to dieting than is actual weight (Wadden et al., 1989).

The idea that dieting in adolescence is a response to feeling fat has been long accepted (e.g. Nylander 1971; Greenfield et al., 1987). Results from the present study also suggest 11-year-old girls are experiencing these feelings of fatness. The high restraint girls perceived themselves as having a more generously proportioned figure compared to the comparison group of girls. In line with Fallon & Rozin's (1985) study on body figure dissatisfaction, this group of girls showed a bias towards thinness with both groups perceiving their ideal figure as thinner than their actual figure. Interestingly, there was no difference in their ideal figure size. Rather, the comparison group of girls showed minimal distance between their ideal and current shape while the high restraint group placed their ideal figure nearly one line drawing away from their current figure, in the direction of thinness. Again, this is consistent with Ricciadelli & McCabe's (2001) review of the literature on body image concerns in which they concluded that between 28-53% of girls desired a thinner body size compared to 4-18% who desired a larger/broader body size.

Although the high restraint girls had a lower body esteem score compared to the comparison group of girls, there were no significant differences in self-esteem between the two groups of girls. This may be a reflection of Button's finding (1990) that self-esteem is only modestly related to fatness concern. Or it may be that for the younger age group earlier predictors of dieting may be more concrete and that the more abstract concepts such as self-esteem and body dissatisfaction have a greater impact later in adolescence. On all self-esteem measures (body-esteem, performance, social and appearance self-esteem) the high restraint girls' mean score was less than the comparison group of girls and both groups of mothers, although some of these differences failed to reach statistical significance. However, the self-esteem appearance

scale did show a main effect of restraint with the high restraint mothers and daughters achieving a lower score on this subscale compared to the comparison groups.

Finally, out of the 40 girls only six had started menstruating and these were equally distributed between the high restraint and comparison group. Statistical comparisons revealed no significant differences on any of the psychological measures between these girls as compared to the other 34. From this study it is not possible to attribute the emergence of dieting to early puberty as has been proposed for eating problems by Attie & Brooks-Gunn (1989). However, the mean age of their sample was nearly fourteen which is somewhat older than the present sample. It may be that as the high restraint girls enter puberty they have an already established predisposition for attempting weight control, which may intensify during adolescence.

Having looked at some of the internal and individual determinants of dieting the remainder of the discussion will focus on external factors, more specifically the family and the mother daughter relationship.

### **4.3 The family context**

The specific ways in which the family are involved in the onset and maintenance of disordered eating are still open to debate. This study aimed to address the issue by focussing on the mother daughter relationship and features of the mother's attitude and behaviour that related to dieting and shape dissatisfaction among their daughters.

Pike & Rodin (1991) suggested that the transmission of disordered eating might be learned at least partially through their daughters modelling maternal behaviour and through direct pressure placed by mothers on their daughters to be thin. One of the principal findings of Pike & Rodin (1991) was the higher level of disordered eating in the mothers of symptomatic 16-year-olds. This suggested an 'agreed' family agenda of

weight concern, drive for thinness and dieting. This view is also supported by the findings of shared dieting motivation in younger daughter-mother pairs (Hill et al., 1990; Ruther and Richman, 1993). However, the expected difference in maternal dietary restraint was not evident in the present study. This could partly be explained by to the ubiquity of weight dissatisfaction and weight control attempts. In the present study the majority of both groups of mothers perceived themselves overweight and wanted to be thinner. Over two thirds had attempted to diet. This level of maternal dieting is similar to that reported in American mothers of 7-13-year-old-girls (Maloney et al., 1989).

Unfortunately the dietary restraint measure used in the present study only enquired about current behaviour and yields no information on past dieting concerns or attempts to control eating. The results did show that the mothers of high restraint girls reported a slightly greater lifetime weight range, were more likely to have fasted for a whole day, and were significantly more likely to snack between meals. Against the backdrop of commonplace weight control these subtle differences may be markers of more intense past dieting behaviour or of current dieting failure in the mothers of the high restraint girls. It is perhaps these differences that warrant further and more detailed investigation.

#### **4.4 Mechanisms of transmission.**

With regards to the specific mechanisms of transmission, the present study is unable to shed much light on the passage of influence from mother to daughter. It is noted by Smolak et al., (1994) that studies like that of Pike & Rodin (1991), and by implication the present study, do not permit discrimination between indirect modelling influences and the more direct communication of information and encouragement to control weight. However it is likely that if there were evidence of direct parental

encouragement then it would be safe to assume that indirect influence would also be present. Parents who actively foster weight control would also be likely to communicate their perceptions and beliefs and attitudes in a variety of subtle, even unconscious ways. Feeling that your young adolescent daughter should lose more weight (Pike & Rodin 1991), or that your adolescent daughter is less attractive (present study), are tangible parts of this high priority for thinness and weight control. Moreover, this is understandable given that parents want the best for their child, and for women it appears that the best comes to those who are thin.

Research on parental promotion of weight concern rarely looks beyond maternal attitudes and behaviour. This is due to the presumed central role of mothers in acting out the nature and importance of thinness and the gender-stereotyped nature of dieting itself. In an investigation of 8-year-olds dieting awareness and reports, it was noted that the children's perception of whether their mother would diet if she felt fat was a significant predictor of their own reported dieting behaviour (Hill & Pallin, 1995). In contrast, the perceived likelihood of their father dieting in response to feeling fat was unrelated to their dieting awareness. This outcome would appear to confirm that maternal dieting is far more influential than paternal behaviour. However it is important that mothers do not become the sole focus of research attention. Anecdotally, comments from male family members are commonly cited as reasons for starting to diet or trying to lose weight. Smolak et al., (1999) found that paternal input was related to the child's weight loss attempts, body esteem and concerns about being fat. Thus, fathers may make an independent contribution to their children's weight concerns and weight loss efforts. Many of the mothers in the present study wanted their partners to see the body figure preference scale and for them to rate the mothers position on the scale and state

their ideal. It may be that male or paternal influences are not transmitted directly to their daughters but filter through from the mother who is influenced by them.

Field et al., (2001) found that independent of age and BMI, parental influences were predictive of becoming highly concerned with weight and becoming a constant dieter. Their study offers support for the role that mothers play in the transmission of cultural values about desirable body shape and weight. However an unexpected finding was that the child's perception of the importance of thinness/ lack of fatness to the father was more important than their perception of its importance to the mother. Overall, their findings suggest that weight related issues of parents are transmitted to their children. We therefore need to further our understanding of the role of fathers in the development of weight concerns and weight control behaviours.

Teasing about fatness or overweight is also associated with the initiation of weight control strategies during adolescence (Thompson et al., 1995). It is interesting to note that the high restraint girls in the present study were twice as likely to have brothers compared to their low restraint counterparts. Their contribution to the family climate of weight and shape dissatisfactions should not be overlooked or underestimated. Nor should that of fathers. It is important that research does not become an exercise in blame that is directed exclusively at mothers. Future studies need to include the whole family, which will pose a number of difficulties when there is already a high degree of conflict reported amongst this group.

#### **4.5 Family dynamics**

Family dysfunction has frequently been noted in the aetiology of eating disorders (Morgan & Russell 1975) and several studies have investigated family differences between anorexic and bulimic patients (Stober 1981; Minuchin et al., 1978).

In an attempt to establish if any differences existed between the family systems of high and low restraint girls the Family Environment Scale was used to investigate current perception. It revealed that high restraint families tended to be less cohesive, less organised and placed less emphasis on ethical and religious issues and values compared with low restraint families. As in Johnson & Flach's, (1985) study with 18-28-year old bulimics, the high restraint daughters perceived the family as less supportive and unhelpful (low cohesiveness) compared to their low restraint counterparts.

Previous research into family dysfunction has tended to focus more on differences between anorexic and bulimic families rather than eating disordered families versus comparison groups, or on within disorder differences. For example, Steiner, Mazer & Sobieski (1985) found some relationship between the family environment of adolescent anorexic patients and the severity of their illness. Anorexics with more severe symptoms came from less cohesive and less well organised families that were lower on expressiveness, independence, recreational and cultural orientation and religious emphasis. Similar results were obtained in the current study except on the expressiveness and recreational subscales. It is also interesting to note that there was a significant difference between the mothers' and daughters' perception of the family with regard to expressiveness. The mothers perceived the family as more expressive compared to the daughters.

Whilst this study appears to be an important preliminary attempt to examine the family environment it does not allow one to comment on whether there are specific differences between the families of individuals with eating pathology and other symptomatic families. Indeed, the characterisation of the high restraint families is quite similar to that of the psychosomatic family reported by Moos (1987). The main difference lies in the symptomatic expression of the distress, i.e. food-related as

opposed to illness-related or substance abuse. The reason for the selection of a food-related problem as a symptom is perhaps a reflection of some part of the mother daughter relationship, or a broader socio-cultural preoccupation with food and weight related behaviour combined with some individual predisposition.

Evidence of differences in perceived family functioning also mirror the differences reported by Pike & Rodin (1991), despite the differences in measures used. In their study, both the mothers and symptomatic girls desired significantly more family cohesion than they currently perceived they had. Similar findings were reported by Attie & Brooks-Gunn (1989), who noted that mothers of adolescent girls with eating problems perceived their families as having less cohesion, organisation and expressiveness. In the present study, both the daughters who reported dieting and their mothers were less satisfied with current family cohesion, family organisation and moral religious emphasis than the non-dieting comparison group. The similarity in outcome is important given the purpose of the research. Dissatisfactions with characteristic areas of perceived family functioning have been detected in families containing a young adolescent dieter, as they have in families with adolescents with eating disorders. This suggests a continuity of dissatisfaction during development, and argues strongly for the need for longitudinal research designs.

It is also consistent with the view that the observed differences in family functioning are not merely consequences of coping with an eating disordered individual. Weight and shape dissatisfactions and resultant alterations in eating behaviour do not occur in isolation of other domains of family existence. This is an important reminder of the dynamic nature of family functioning, with dissatisfactions in self-perception influencing dissatisfactions in other domains and vice versa.



#### 4.6 Further Research

The present study has concentrated on the eating attitudes and behaviour of mothers and daughters. This is a reflection of the vast literature on the topic of cultural pressures on women to conform to a particular stereotype of attractiveness. Men are also subject to these pressures. An investigation into the eating attitudes and behaviour of both men and younger boys may provide further valuable insight in the transmission of these powerful messages.

Another interesting research question is at what age do parents start to pass on the socio-cultural values of thinness to their children? The findings of Stein et al., (1995) suggest that parental eating problems can be readily seen in feeding difficulties of children from preschool age and beyond. The literature on the acquisition of food preferences and choices also identifies the operation of parental influence from a very early age (Ray & Klesges, 1993). Johnson & Birch (1994) note that mothers' dieting concerns influence the degree to which they are controlling their children's food intake which itself is associated with impairment in the children's capacity to self regulate energy intake. Furthermore, this undermining of self-regulation was observed in 3-5 year olds and was present in girls but not boys. Parents need sensible advice on how their attitudes and behaviour can influence those of children. This is particularly necessary at time of increasing population levels of obesity and weight control, and the resultant tension between initiatives to tackle obesity and those directed at the prevention of eating disorders.

Edmunds & Hill (1999) noted that highly restrained children reported greater parental control of their dieting. Parental control of eating (characteristic of restrained mothers) is associated with impaired self-regulation in younger girls and had the potential for weight gain (Johnson & Birch, 1994). Further research is needed to clarify

whether dietary restraint is a result of an impaired opportunity to learn self-regulatory cues and/or a response to a tendency to overweight. In addition, further research should address whether such a response is self-imposed, parentally reinforced, solicited by the child, the result of longstanding pressures or a fresh response in the face of a changing and developing body. To acknowledge the importance of these areas both children and their parents need further investigation.

As is said of the media, mothers also play a significant, if hard to quantify, role in the aetiology of eating disorders. However it is important to realize that mothers and the media do not influence self-esteem in an exclusively negative direction. Since the media have considerable influence in increasing awareness of health issues, it is vital young women receive the right messages about body shape and healthy weight.

Stice (1994) proposes in his socio-cultural model of bulimia that the socio-cultural pressures as transmitted by family, peers and the media, promote an internalisation of these ideals. Low self esteem and identity confusion are thought to increase the likelihood of internalisation of these pressures. Weight is posited to moderate this effect, with the relation between internalised ideals and body dissatisfaction being stronger amongst heavier women. Body dissatisfaction leads to dietary restraint, which in turn increases the chances of binge eating and bulimia. Modelling of bulimic behaviours by family, peers and the media is theorized to increase the likelihood of moving from restrained eating to bulimia. Similarly, coping skills deficits and impulsivity are postulated to interact with restraint to produce bulimic behaviour. The model fails to incorporate other major factors including personality and biological influences. Therefore a more comprehensive model of bulimia is required which addresses its development across the sexes.

#### 4.7 Methodological Limitations

Several limitations should be noted to this study. Firstly, research on the parental promotion of weight concern rarely looks beyond maternal attitudes and behaviour. This is due to the presumed central role of mothers in acting out the nature and importance of thinness, and to the gender stereotyped nature of dieting itself. In an investigation of eight-year-olds dieting awareness and reports, it was noted that the children's perception of whether their mother would diet if she felt fat was a significant predictor of their own reported dieting behaviour (Hill & Pallin, 1995). In contrast, the perceived likelihood of their father dieting in response to feeling fat was unrelated to their dieting awareness. This outcome would appear to confirm that maternal dieting is far more influential than paternal behaviour. However mothers should not be the sole focus of attention. Anecdotally, comments from male members are commonly cited as reasons for starting to diet or lose weight. In addition teasing is associated with weight control attempts during adolescence (Thompson, Covert, Richards, Johnson & Cattarin, 1995). It is notable that the high restraint girls in the current study were twice as likely to have brothers than their low restraint counterparts. Their contribution to the family climate of weight and shape dissatisfaction should not be overlooked, nor should that of fathers. There is a need to extend the scope of such studies. This should hopefully prevent this research from becoming an exercise in blame that is directed exclusively at mothers.

Secondly the present study provides little evidence regarding the specific mechanism of transmission of influence from mother to daughter. It does not permit discrimination between indirect modelling influences, and the more direct communication of information and encouragement to control weight. However if there were evidence of direct parental encouragement, then it would be safe to assume that

indirect influences would also be present. Parents who actively fostered weight control would also be likely to communicate their perceptions, beliefs and attitudes in a variety of subtle, even unconscious ways. Feeling that your adolescent daughter should lose more weight (Pike & Rodin 1991), or that your adolescent daughter is less attractive relative to the comparison group of girls (current study), are tangible parts of this high priority for thinness and weight control.

Thirdly, the study may also be questioned with regard to its representativeness. These were questionnaire data derived from a small sample that was a single age group from one geographical area. Further research needs to involve a larger group of mothers and daughters, to include fathers and sons, and to draw its sample from a larger geographical area and from more than one age group.

Fourthly, mothers' BMIs were calculated from self-reported height and weight. It has been suggested that self-reported weight may be an underestimate of actual weight, although any difference is usually small. For example, Jacobson & DeBock (2001) compared differences between women's self-reported and measured height and weight and concluded that self-reported height and weight should be viewed with caution in Body Mass Index assessment, especially if the sample are obese, since any discrepancy between reported and actual weight is greater in those who are heavier. However, it is interesting to note in the present study that several of the mothers from both restraint groups took the opportunity to use the scales provided by the researcher to weigh themselves. So for several mothers, their measured rather than self-reported weight was recorded for calculation of their BMI.

Finally, much of the research into eating behaviours, attitudes and body concerns has been conducted on adolescent girls using a variety of assessment instruments, mostly developed on adult samples, raising some concerns about their

suitability for a younger age group. In response, Banasiak, Wertheim, Koerner and Voudouris (2000) evaluated the psychometric properties of the restraint subscale of the Dutch Eating Behaviour Questionnaire (Van Strien et al, 1986) and Figure Rating Scale (Stunkard, et al, 1983) in 14-year old girls. They concluded that these measures demonstrated good internal consistency and high test re-test reliability. Figural stimuli were first introduced by Stunkard et al (1983) as an easy to administer self-report measure of body image. These rating scales have been widely used in epidemiological investigations (Sorensen & Stunkard, 1993) and with young adolescents (eg. Hill & Pallin, 1998) to establish body figure discrepancy. Critics of figural stimuli highlight the coarse and ordinal nature of the scale, restricted in range of response options, and inconsistent size differences between successive figures as potential pitfalls to their use (Garner, Friedman & Jackson, 1998). However, despite these shortcomings the scale appears to be highly robust. Indeed, there is little evidence that more sophisticated drawings of body shapes offer any improvements in reliability or validity. Stunkard (2000) examined the validity of two newly constructed rating scales with more realistic figural stimuli for the assessment of body image (Garner et al 1998). The results show no greater validity than did for first scale to be developed (Stunkard et al, 1983), as determined by the correlation between scale scores and body mass index and body weight. In another methodological analysis, Bulik, Wade, Heath, Martin, Stunkard and Eaves (2001) conclude that scales using the original figural stimuli are a robust technique for classifying individuals as obese or thin

#### 4.8 Clinical implications

Over recent years there has been an increase in pressure on government to assist in reducing obesity in the UK for health reasons (e.g. National Audit Office, 2001). Any attempts will ultimately increase the attention given to weight and eating at all ages, and not simply in those who are overweight. Other studies have already highlighted that weight and dieting are already high on the personal agenda for a number of pre-adolescents and it may be that these children hear the message rather than those for whom it is intended. In addition, this age group holds an extremely negative view of the character and lifestyle of the overweight (Hill & Silver 1995). Publicly increasing awareness of the undesirability of overweight and identifying children for such an intervention may have some (uncertain) effect on adult weight. However without careful foresight and planning it may also inadvertently boost unauthorised weight concern and dieting. It is also likely that these concerns will be more keenly experienced by girls than boys and may well result in a subsequent rise in dieting and then eating disorders.

There is also evidence to suggest that women are less liable to the effects of overweight on physical health than men (Seidell 1992; Must, Jacques, Dallal, Bajema, & Dietz, 1992). However, the impact of weight management strategies is likely to be more keenly experienced by women, as weight, appearance and food are generally more important matters for women than men. Hill, Draper & Stack (1994) showed that by the age of 9, girls and boys already differ in their body shape aspirations. It follows that girls and boys will accept and respond differently to any initiative on weight and eating. Therefore, any initiative, which fails to acknowledge gender differences, runs the risk of promoting the pursuit of thinness by girls and failing to involve the interest of boys. Neither of these outcomes is desirable.

There is a need to investigate the early development of dieting preoccupation in children so as to understand when to intervene with children who diet excessively (Maloney et al., 1989). By documenting the development of dieting preoccupations in young children it may help with early case identification and perhaps lead to improved intervention strategies. Highlighting possible aetiological factors has therapeutic implications. If we are able to identify high-risk children then preventative work can be established before the disordered eating becomes a clinical disorder. The identification of dysfunctional families and the significant components of the mother-daughter relationship might also imply that any therapeutic intervention has to include the whole family.

It may also be desirable to shift away from a disease prevention approach and move instead towards a health promotion model. Implicit in this would be the focus on general protective factors rather than specific risk factors, for example, self-esteem. There is even preliminary evidence illustrating the effectiveness of a self-esteem focussed intervention on the body image and eating attitudes of 11-14 year old girls (O'Dea & Abraham 2000). In addition O'Dea & Abraham (2000) stress the need to acknowledge the interplay of puberty, gender, weight and age when developing intervention programmes.

Recent research by Abramovitz and Birch (2000), exploring 5-year-old girls' ideas, concepts and beliefs about dieting, found 34-65% (depending on the question asked) had ideas about dieting. More importantly, compared to girls whose mothers did not diet, girls whose mothers reported current or recent dieting were more than twice as likely to have ideas about dieting. This might suggest that a mothers' dieting behaviour is a source of a young girls' concepts and beliefs about dieting. It would seem important that mothers should be informed that their weight control attempts may influence their

young daughters emerging ideas, concepts and beliefs about dieting. Mothers should be encouraged to use health promoting rather than health compromising weight control strategies, not only for their own well being but to reduce the likelihood that daughters will incorporate health-compromising dieting behaviours into their concepts, ideas and beliefs about dieting.

It is more widely acknowledged that the weight-related ideas of parents are transmitted to their children. To maintain a healthy weight and to ensure that their children do not become either overweight or overly concerned with weight it is advisable that parents remind themselves that they serve as role models and therefore, should attempt to adopt the diet and activity patterns that they would like their children to emulate. To prevent children and adolescents from developing extreme concern with weight and unhealthy weight control behaviours, peers, parents and the media must all be targets for intervention.

Mothers of children with non-organic failure to thrive have been found to restrict their own food intake and despite their child's low weight, restrict their child's intake of sweets and fattening or unhealthy foods (McCann et al., 1994). The importance of family factors in the aetiology of eating disorders has long been proposed. Parents who comment on their daughters weight are more likely to have daughters who chronically restrict food intake and express weight dissatisfactions. Prevention programmes may reduce the risk of eating disorder development by educating parents concerning the impact of commenting to a daughter about her weight and eating. Further research is needed as this has serious implications for health workers working with this group, as they need to be mindful of the feeding and development of such children.



Children's diets are therefore important both in terms of the child's health and their health in later life. However the development of food preferences is complicated and not fully understood, although cognitive and social factors appear to be important (Birch 1987). In terms of social factors, research has highlighted the role of peer group pressure (Birch 1987) and television commercials (Peterson, Jeffrey, Bridgewater, & Dawson, 1984). In addition there is substantial evidence that parental influence is important. Children have been shown to select different foods when they are being watched by their parents compared to when they are not (Klesges, Stein, Isbell, & Klesges, 1991). Olivera, Ellison, Moore, Gillman, Garrahe & Singer, (1992) showed a correlation between mothers and children's food intakes for most nutrients in pre-school children and suggested targeting parents to try to improve children's diets. Parents also affect food choices by their children indirectly through the foods purchased and served in the household therefore influencing the child's exposure and possible habits and preferences in the future. Alderson & Ogden (1999) found that mothers feed themselves differently to how they feed their children. Mothers feed their children less healthy foods but state that health is more important motivator.

Many variables within the family environment may influence children's eating behaviours and ultimately their weight outcome. Parents influence their children's eating patterns not only through the foods they make available to children, but also through their child feeding strategies and role modelling of appropriate eating behaviour. Parents employ a range of child feeding strategies intended to ensure adequate, well-balanced food intake, but that can be coercive and controlling. Johnson & Birch (1994) conclude that it is important for parents to create an optimal environment for their children's growth and health by providing a variety of nutritious

foods. They also believe that it should remain within the child's domain to maintain control over how much of these foods are eaten.

The possibility that parents facilitate or promote early dieting and weight concerns among older children and young adolescents has been explored in the current study and previous research by Hill et al., (1990) and Edmunds & Hill (1999). Pike & Rodin (1991) found that daughters who diet by adolescence tend to have mothers who diet, and mothers may encourage daughters to diet and provide coaching on how to do so. Birch & Fisher (2001) suggest that the intergenerational transfer of eating and weight problems between mothers and daughters may begin during the preschool period. They found that mothers with restrained eating styles imposed more control on their 5-year-old daughters eating and had daughters who showed evidence of reduced self-control of energy intake. This research, together with that by Edmunds and Hill (1999) highlights the need for longitudinal data to examine the role of parental control, especially restriction and monitoring, as a developmental precursor of daughters' subsequent use of self imposed dietary restraint for weight control.

#### **4.9 Conclusions**

Eleven-year-old girls continue to show high levels of dieting motivation. Moreover, the high restraint girls in this study were more likely to be dissatisfied with their body shape and tended to have lower body esteem scores compared to a group of low restraint girls. These differences were not merely a reflection of higher body weight or body mass index. For some, these discontents were incongruous with their actual body weight and were reflected in their thinner target ideals.

The close correspondence between the dietary restraint of girls and their mother found by Hill et al., (1990) was not replicated in the present study. Although no

significant relationship was found between the mothers and daughters restraint scores, the mother daughter relationship appeared to be important in other ways. The high restraint mothers and daughters both had low body esteem and a desire to lose more weight than the comparison group of girls and their mothers. In addition, they rated their daughter's attractiveness significantly lower than did comparison mothers

The findings from this study concerning the general functioning of the family system are notable in the light of previous research. The high restraint daughters and mothers perceived their families to be less cohesive, have lower levels of organisation and place less emphasis on moral and religious issues. Dissatisfaction with characteristic areas of perceived family functioning is evident in families with a young dieter and in families with eating disordered adolescents. This would suggest that the observed differences in family functioning are not merely consequences of coping with a dieting or eating disordered individual. Although the present study does not answer the question of why preadolescent girls become eating disordered per se, it does highlight the significance of the family system and the mother daughter relationship which may act to set the stage for the development of an eating disorder.

The degree of body dissatisfaction and the ideas expressed in relation to weight and body shape by the girls in the study are not inherently damaging. What is of great concern is that these ideas are persistent and that they may become the foundations upon which more serious eating pathology may develop.

## 5. References

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## **Appendix 1**

### **Parental consent letter**



**From the School of Medicine  
Academic Unit of Psychiatry**

15 Hyde Terrace  
Leeds LS2 9LT UK

Fax 0532 433719  
Telephone 0532 431751  
Direct line 0532

332734

To the mother of

I am conducting a research project as part of a postgraduate Masters Degree in Clinical Psychology at Leeds University. I would like to explain a little about the project and ask for your help in completing it.

The project is a follow-up study of some previous research conducted by my supervisor Dr. Andrew Hill and another student two years ago. At that time they surveyed a number of schools in the Leeds area to look at childrens attitudes concerning their self perception and body esteem. The information I would like to collect this time is very similar to that collected two years ago. I would also be very interested in your own perceptions of these issues.

The project simply involves both you and your daughter completing some very straightforward questionnaires which would take between 30 and 45 minutes of your time. To do this I would visit families at home to explain the questionnaires and help with their completion.

I will be contacting you again within the next ten days to see if you are able to help me, and arrange a time when it would be convenient for me to visit.

Thanking you in anticipation.

Yours sincerely,

**Julie Franklin**  
**Trainee Clinical Psychologist**

**Andrew J. Hill, Ph.D., C.Psychol.**  
**Lecturer in Behavioural Sciences**



## **Appendix 2**

### **Body Esteem Questionnaire**

Name:

Date:

Please circle the alternative which best describes you:

- |  |     |    |
|--|-----|----|
| 1. I like what I look like in pictures.                              | Yes | No |
| 2. Kids my own age like my looks.                                    | Yes | No |
| 3. I'm pretty happy about the way I look.                            | Yes | No |
| 4. Most people have a nicer body than I do.                          | Yes | No |
| 5. My weight makes me unhappy.                                       | Yes | No |
| 6. I like what I see when I look in the mirror.                      | Yes | No |
| 7. I wish I were thinner.  | Yes | No |
| 8. There are lots of things I would change about my looks if I could | Yes | No |
| 9. I am proud of my body.  | Yes | No |
| 10. I really like what I weigh.                                      | Yes | No |
| 11. I wish I looked better.  | Yes | No |
| 12. I often feel ashamed of how I look.                              | Yes | No |
| 13. Other people make fun of how I look.                             | Yes | No |
| 14. I think I have a good body.                                      | Yes | No |
| 15. I'm looking as nice as I'd like to.                              | Yes | No |
| 16. It's bad to look like me.  | Yes | No |
| 17. I wish I were fatter.  | Yes | No |
| 18. I often wish I looked like someone else.                         | Yes | No |
| 19. My classmates would like to look like me.                        | Yes | No |
| 20. I have a high opinion about the way I look.                      | Yes | No |
| 21. My looks upset me.   | Yes | No |
| 22. I am as nice looking as most people.                             | Yes | No |
| 23. My parents like my looks.  | Yes | No |
| 24. I worry about the way I look.                                    | Yes | No |

## **Appendix 3**

**Body esteem questionnaire modified for mothers**

Name:

Date:

Please circle the alternative which best describes you:

- |  |     |    |
|--|-----|----|
| 1. I like what I look like in pictures.                              | Yes | No |
| 2. People my own age like my looks.                                  | Yes | No |
| 3. I'm pretty happy about the way I look.                            | Yes | No |
| 4. Most people have a nicer body than I do.                          | Yes | No |
| 5. My weight makes me unhappy.                                       | Yes | No |
| 6. I like what I see when I look in the mirror.                      | Yes | No |
| 7. I wish I were thinner.  | Yes | No |
| 8. There are lots of things I would change about my looks if I could | Yes | No |
| 9. I am proud of my body.  | Yes | No |
| 10. I really like what I weigh.                                      | Yes | No |
| 11. I wish I looked better.  | Yes | No |
| 12. I often feel ashamed of how I look.                              | Yes | No |
| 13. Other people make fun of how I look.                             | Yes | No |
| 14. I think I have a good body.                                      | Yes | No |
| 15. I'm looking as nice as I'd like to.                              | Yes | No |
| 16. It's bad to look like me.  | Yes | No |
| 17. I wish I were fatter.  | Yes | No |
| 18. I often wish I looked like someone else.                         | Yes | No |
| 19. My friends would like to look like me.                           | Yes | No |
| 20. I have a high opinion about the way I look.                      | Yes | No |
| 21. My looks upset me.   | Yes | No |
| 22. I am as nice looking as most people.                             | Yes | No |
| 23. My family like my looks.   | Yes | No |
| 24. I worry about the way I look.                                    | Yes | No |

## **Appendix 4**

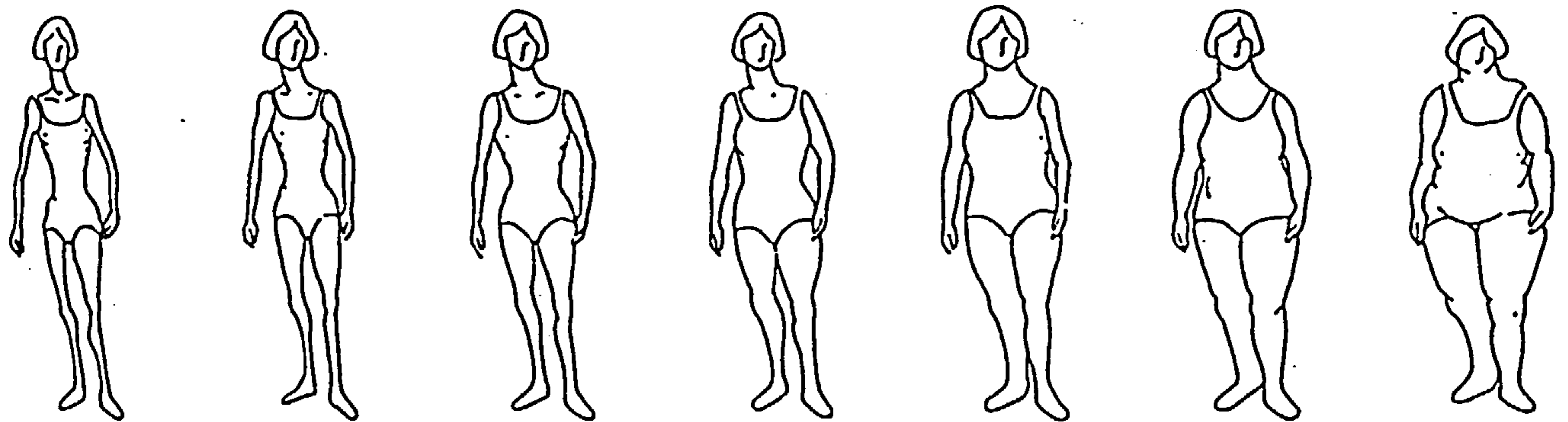
### **Body figure preference scale**

NAME:

DATE:

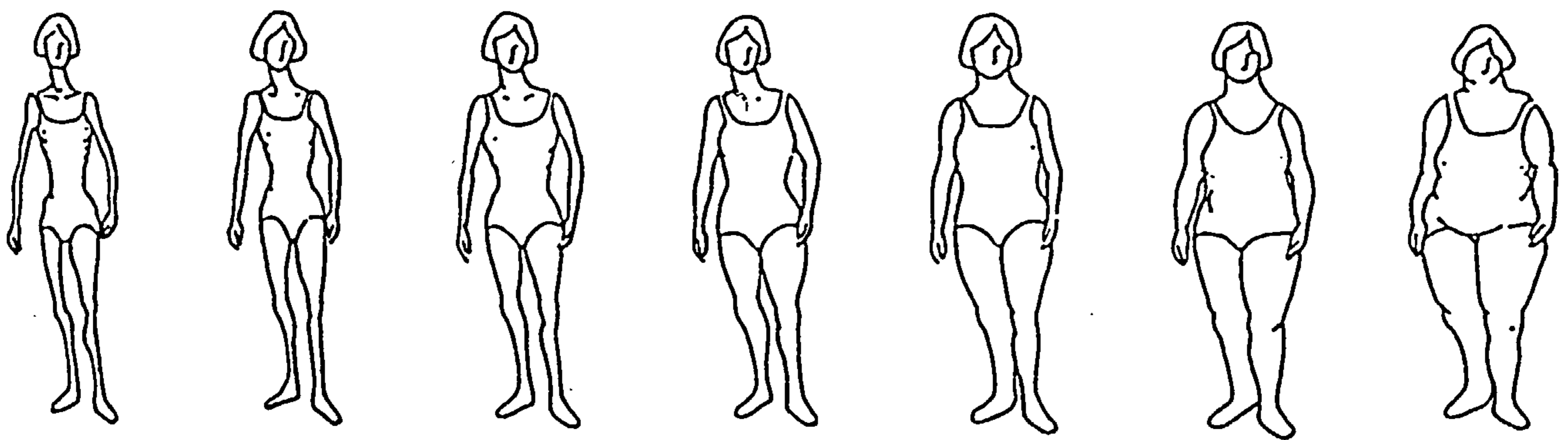
... ..

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 5**

### **State self-esteem scale**

This is a questionnaire designed to measure how you feel about yourself. Make sure you answer all of the items, even if you are not certain of the best answer. Please circle what you feel is true of yourself **TODAY**.

	1	2	3	4	5
	Not at all			Extremely	
1. I feel confident about my abilities.	1	2	3	4	5
2. I am worried about whether I am regarded as a success or failure.	1	2	3	4	5
3. I feel satisfied with the way my body looks right now.	1	2	3	4	5
4. I feel frustrated or unhappy about my performance.	1	2	3	4	5
5. I feel I am having trouble understanding things that I read.	1	2	3	4	5
6. I feel that others respect and admire me.	1	2	3	4	5
7. I am dissatisfied with my weight.	1	2	3	4	5
8. I feel self-conscious.	1	2	3	4	5
9. I feel as clever as others.	1	2	3	4	5
10. I feel displeased with myself.	1	2	3	4	5



11. I feel good about myself.

1                      2                      3                      4                      5

12. I am pleased with my appearance right now.

1                      2                      3                      4                      5

13. I am worried about what other people think of me.

1                      2                      3                      4                      5

14. I feel confident that I understand things.

1                      2                      3                      4                      5

15. I feel inferior to others at this moment.

1                      2                      3                      4                      5

16. I feel unattractive.

1                      2                      3                      4                      5

17. I feel concerned about the impression I am making.

1                      2                      3                      4                      5

18. I feel I have less intellectual ability right now compared to others.

1                      2                      3                      4                      5

19. I feel like I am not doing well.

1                      2                      3                      4                      5

20. I am worried about looking foolish.

1                      2                      3                      4                      5

## **Appendix 6**

### **Dutch eating behaviour questionnaire**

Please answer each question by circling the most appropriate alternative.

1. If you have put on weight, do you eat less than you usually do?

Never          Seldom          Sometimes          Often          Very Often

2. Do you have a desire to eat when you are irritated?

Never          Seldom          Sometimes          Often          Very Often

3. If food tastes good to you, do you eat more than you usually do?

Never          Seldom          Sometimes          Often          Very Often

4. Do you try to eat less at mealtimes than you would like to eat?

Never          Seldom          Sometimes          Often          Very Often

5. Do you have a desire to eat when you have nothing to do?

Never          Seldom          Sometimes          Often          Very Often

6. Do you have a desire to eat when you are fed up?

Never          Seldom          Sometimes          Often          Very Often

7. If food smells and looks good, do you eat more than you usually do?

Never          Seldom          Sometimes          Often          Very Often

8. How often do you refuse food or drink offered because you are worried about how much you weigh?

Never          Seldom          Sometimes          Often          Very Often

9. Do you have a desire to eat when you are feeling lonely?

Never          Seldom          Sometimes          Often          Very Often

10. If you see or smell something delicious, do you have a desire to eat it?

Never          Seldom          Sometimes          Often          Very Often

11. Do you watch exactly what you eat?

Never          Seldom          Sometimes          Often          Very Often

12. Do you have a desire to eat when somebody disappoints you?

Never          Seldom          Sometimes          Often          Very Often

13. If you have something delicious to eat, do you eat it straight away?

Never          Seldom          Sometimes          Often          Very Often

14. Do you deliberately eat foods that are slimming?

Never          Seldom          Sometimes          Often          Very Often

15. Do you have a desire to eat when you are cross?

Never          Seldom          Sometimes          Often          Very Often

16. Do you have a desire to eat when you are expecting something unpleasant to happen?

Never          Seldom          Sometimes          Often          Very Often

17. If you walk past a baker's do you have a desire to buy something delicious?

Never          Seldom          Sometimes          Often          Very Often

18. When you have eaten too much, do you eat less than usual on the following days?

Never          Seldom          Sometimes          Often          Very Often

19. Do you get a desire to eat when you are anxious, worried or tense?

Never          Seldom          Sometimes          Often          Very Often

20. If you walk past a snack bar or café, do you have a desire to buy something delicious?

Never          Seldom          Sometimes          Often          Very Often

21. Do you deliberately eat less in order not to become heavier?

Never          Seldom          Sometimes          Often          Very Often

22. Do you have a desire to eat when things are going against you or when things have gone wrong?

Never          Seldom          Sometimes          Often          Very Often

23. If you see others eating, do you also have a desire to eat?

Never          Seldom          Sometimes          Often          Very Often

24. How often do you try not to eat between meals because you are watching your

weight?

Never      Seldom      Sometimes      Often      Very Often

25. Do you have a desire to eat when you are frightened?

Never      Seldom      Sometimes      Often      Very Often

26. Can you resist eating delicious foods?

Never      Seldom      Sometimes      Often      Very Often

27. How often in the evening do you try not to eat because you are watching your weight?

Never      Seldom      Sometimes      Often      Very Often

28. Do you have a desire to eat when you are disappointed?

Never      Seldom      Sometimes      Often      Very Often

29. Do you eat more than usual when you see other eating?

Never      Seldom      Sometimes      Often      Very Often

30. Do you think about how much you weigh before deciding how much to eat?

Never      Seldom      Sometimes      Often      Very Often

31. Do you have a desire to eat when you are upset?

Never      Seldom      Sometimes      Often      Very Often

32. When you see someone preparing a meal, does it make you want to eat something?

Never      Seldom      Sometimes      Often      Very Often

33. Do you have a desire to eat when you are bored or restless?

Never      Seldom      Sometimes      Often      Very Often

## **Appendix 7**

### **Family environment scale, form R**

NAME:

DATE:

Family Environment Scale

The statements below are about families. You are to decide which of these statements are true of your family and which are false. If you think the statement is **True** or mostly **True** of your family, put a circle round **T**. If you think the statement is **False** or mostly **False** of your family, circle **F**. Remember, we would like to know what your family seems like to you. So do not try to figure out how other members see your family, but do give us your general impression of your family for each statement.

- |  |   |   |
|--|---|---|
| 1. Family members really help and support one another.               | T | F |
| 2. Family members often keep their feelings to themselves.           | T | F |
| 3. We fight a lot in our family.                                     | T | F |
| 4. We don't do things on our own very often in our family.           | T | F |
| 5. We feel it is important to be the best at whatever you do.        | T | F |
| 6. We often talk about political and social problems.                | T | F |
| 7. We spend most weekends and evenings at home.                      | T | F |
| 8. Family members attend church, synagogue or mosque fairly often.   | T | F |
| 9. Activities in our family are pretty carefully planned.            | T | F |
| 10. Family members are rarely ordered around.                        | T | F |
| 11. We often seem to be killing time at home.                        | T | F |
| 12. We say anything we want to around home.                          | T | F |
| 13. Family members rarely become openly angry.                       | T | F |
| 14. In our family, we are strongly encouraged to be independent.     | T | F |
| 15. Getting ahead in life is very important in our family.           | T | F |
| 16. We rarely go to plays, concerts or lectures.                     | T | F |
| 17. Friends often come over for dinner or to visit.                  | T | F |
| 18. We don't say prayers in our family.                              | T | F |
| 19. We are generally very neat and orderly.                          | T | F |
| 20. There are very few rules to follow in our family.                | T | F |
| 21. We put a lot of energy into what we do at home.                  | T | F |
| 22. It's hard to "let off steam" at home without upsetting somebody. | T | F |

- |  |   |   |
|--|---|---|
| 23. Family members sometimes get so angry they throw things.                               | T | F |
| 24. We think things out for ourselves in our family.                                       | T | F |
| 25. How much money a person makes is not very important to us.                             | T | F |
| 26. Learning about new and different things is very important in our family.               | T | F |
| 27. Nobody in our family is active in sports.  | T | F |
| 28. We often talk about the religious meaning of Christmas, Passover, or other holidays.   | T | F |
| 29. It's often hard to find things when you need them in our household.                    | T | F |
| 30. There is one family member who makes most of the decisions.                            | T | F |
| 31. There is a feeling of togetherness in our family.                                      | T | F |
| 32. We tell each other about our personal problems.  | T | F |
| 33. Family members hardly ever lose their tempers.   | T | F |
| 34. We come and go as we want in our family.   | T | F |
| 35. We believe in competition and "may the best man win."                                  | T | F |
| 36. We are not that interested in cultural activities.                                     | T | F |
| 37. We often go to the movies, sports events, camping, etc.                                | T | F |
| 38. We don't believe in heaven or hell.  | T | F |
| 39. Being on time is very important in our family.   | T | F |
| 40. There are set ways of doing things in our family.                                      | T | F |
| 41. We rarely volunteer when something has to be done at home.                             | T | F |
| 42. If we feel like doing something on the spur of the moment we often just get up and go. | T | F |
| 43. Family members often criticise each other.   | T | F |
| 44. There is very little privacy in our family.  | T | F |
| 45. We always strive to do things just a little better the next time.                      | T | F |
| 46. We rarely have intellectual discussions.   | T | F |
| 47. Everyone in our family has a hobby or two.   | T | F |
| 48. Family members have strict ideas about what is right and wrong.                        | T | F |



- |   |   |   |
|---|---|---|
| 49. People change their minds often in our family.  | T | F |
| 50. There is a strong emphasis on following rules in our family.  | T | F |
| 51. Family members really back each other up.   | T | F |
| 52. Someone usually gets upset if you complain in our family.   | T | F |
| 53. Family members sometimes hit each other.  | T | F |
| 54. Family members almost always rely on themselves when a problem comes up.                                | T | F |
| 55. Family members rarely worry about job promotions, school marks, etc.                                    | T | F |
| 56. Someone in our family plays a musical instrument.   | T | F |
| 57. Family members are not very involved in recreational activities outside work or school.                 | T | F |
| 58. We believe there are some things you just have to take on faith.  | T | F |
| 59. Family members make sure their rooms are neat and tidy.   | T | F |
| 60. Everyone has an equal say in family decisions.  | T | F |
| 61. There is very little group spirit in our family.  | T | F |
| 62. Money and paying bills is openly talked about in our family.  | T | F |
| 63. If there's a disagreement in our family, we try hard to smooth things over and keep the peace.          | T | F |
| 64. Family members strongly encourage each other to stand up for their rights.                              | T | F |
| 65. In our family, we don't try that hard to succeed.   | T | F |
| 66. Family members often go to the library.   | T | F |
| 67. Family members sometimes attend courses or take lessons for some hobby or interest (outside of school). | T | F |
| 68. In our family each person has different ideas about what is right and wrong.                            | T | F |
| 69. Each person's duties are clearly defined in our family.   | T | F |
| 70. We can do whatever we want to in our family.  | T | F |
| 71. We really get along well with each other.   | T | F |
| 72. We are usually careful about what we say to each other.   | T | F |
| 73. Family members often try to one-up or out-do each other.  | T | F |

- |  |   |   |
|--|---|---|
| 74. It's hard to be by yourself without hurting someone's feelings in our household.               | T | F |
| 75. "Work before play" is the rule in our family.  | T | F |
| 76. Watching T.V. is more important than reading in our family.                                    | T | F |
| 77. Family members go out a lot.   | T | F |
| 78. The Bible or Koran are very important books in our family.                                     | T | F |
| 79. Money is not handled very carefully in our family.   | T | F |
| 80. Rules are pretty inflexible in our household.  | T | F |
| 81. There is plenty of time and attention for everyone in our family.                              | T | F |
| 82. There are a lot of spontaneous discussions in our family.                                      | T | F |
| 83. In our family, we believe you don't ever get anywhere by raising your voice.                   | T | F |
| 84. We are not really encouraged to speak up for ourselves in our family.                          | T | F |
| 85. Family members are often compared with others as to how well they are doing at work or school. | T | F |
| 86. Family members really like music, art and literature.  | T | F |
| 87. Our main form of entertainment is watching T.V. or listening to the radio.                     | T | F |
| 88. Family members believe that if you sin you will be punished.                                   | T | F |
| 89. Dishes are usually done immediately after eating.  | T | F |
| 90. You can't get away with much in our family.  | T | F |

## **Appendix 8**

### **Background questionnaire for mothers**

The purpose of this questionnaire is to provide some background information about you. Please answer as honestly as possible.

### ABOUT YOU

1. Are you: SINGLE / MARRIED / SEPARATED / DIVORCED / WIDOWED
2. What is your date of birth?.....
3. Occupation?.....
4. How many children do you have?.....

Please give their sex and dates of birth:

M / F .....	M / F.....
M / F .....	M / F.....
M / F .....	M / F.....

5. How tall are you?.....
6. What is your present weight?.....
7. What is the most you have ever weighed at your present height? (excluding pregnancy).....
8. What is the least you have ever weighted at you current height? (excluding illness).....
9. What would be your ideal weight?.....
10. Do you feel yourself to be:
 

VERY OVERWEIGHT	.....
OVERWEIGHT	.....
SLIGHTLY OVERWEIGHT	.....
ABOUT RIGHT	.....
SLIGHTLY UNDERWEIGHT	.....
UNDERWEIGHT	.....
VERY UNDERWEIGHT	.....

11. How old were you when you first attempted to diet to lose weight? .....
12. What is the maximum number of pounds you have lost from dieting at any one time?.....
13. Are you currently dieting to lose weight Y / N

(If so how many pounds have you lost.....)

14. Have you or any member of your family suffered from an eating disorder?

Y / N .....

15. Do you eat:

Breakfast	Always	/	Often	/	Sometimes	/	Never
Lunch	Always	/	Often	/	Sometimes	/	Never
Evening meal	Always	/	Often	/	Sometimes	/	Never
Supper	Always	/	Often	/	Sometimes	/	Never
Snacks between meals	Always	/	Often	/	Sometimes	/	Never

16. Do you ever fast for a whole day? Y / N

(If so how often is this..... )

17. Compared with other women of your age how attractive do you feel?

- MUCH MORE ATTRACTIVE .....
- SLIGHTLY MORE ATTRACTIVE .....
- EQUALLY ATTRACTIVE .....
- SLIGHTLY LESS ATTRACTIVE .....
- MUCH LESS ATTRACTIVE .....

**ABOUT YOUR DAUGHTER**

18. How tall is she ?.....

19. What does she weigh?.....

20. What would you consider her ideal weight to be?

.....pounds more                      .....pounds less

21. Do you feel her to be:

VERY OVERWEIGHT	.....
OVERWEIGHT	.....
SLIGHTLY OVERWEIGHT	.....
ABOUT RIGHT	.....
SLIGHTLY UNDERWEIGHT	.....
UNDERWEIGHT	.....
VERY UNDERWEIGHT	.....

22. Has she ever dieted to lose weight?      Y / N

23. Compared with other girls of her age how attractive is she?

MUCH MORE ATTRACTIVE	.....
SLIGHTLY MORE ATTRACTIVE	.....
EQUALLY ATTRACTIVE	.....
SLIGHTLY LESS ATTRACTIVE	.....
MUCH LESS ATTRACTIVE	.....

24. Has she started her menstrual periods yet?      Y / N

## **Appendix 9**

### **Background questionnaire for daughters**

The purpose of this questionnaire is to provide some background information about you. Please answer as honestly as possible.

1. Do you eat:

Breakfast	Always	/	Often	/	Sometimes	/	Never
Lunch	Always	/	Often	/	Sometimes	/	Never
Evening meal	Always	/	Often	/	Sometimes	/	Never
Supper	Always	/	Often	/	Sometimes	/	Never
Snacks between meals	Always	/	Often	/	Sometimes	/	Never

2. Do you ever go for a whole day without eating? Y / N

(If so how often is this .....)

3. Do you feel yourself to be:

VERY OVERWEIGHT	.....
OVERWEIGHT	.....
SLIGHTLY OVERWEIGHT	.....
ABOUT RIGHT	.....
SLIGHTLY UNDERWEIGHT	.....
UNDERWEIGHT	.....
VERY UNDERWEIGHT	.....

4. Compared with other girls of your age how attractive do you feel?

MUCH MORE ATTRACTIVE	.....
SLIGHTLY MORE ATTRACTIVE	.....
EQUALLY ATTRACTIVE	.....
SLIGHTLY LESS ATTRACTIVE	.....
MUCH LESS ATTRACTIVE	.....

5. How tall are you?.....

6. What is your current weight?.....

7. What would be your ideal weight?.....

8. Do you feel your MUM to be:

VERY OVERWEIGHT	.....
OVERWEIGHT	.....
SLIGHTLY OVERWEIGHT	.....
ABOUT RIGHT	.....
SLIGHTLY UNDERWEIGHT	.....



UNDERWEIGHT	.....
VERY UNDERWEIGHT	.....

9. Compared with other mums how attractive is she?

MUCH MORE ATTRACTIVE	.....
SLIGHTLY MORE ATTRACTIVE	.....
EQUALLY ATTRACTIVE	.....
SLIGHTLY LESS ATTRACTIVE	.....
MUCH LESS ATTRACTIVE	.....