

Volume I

The Development of Body Dissatisfaction in Girls

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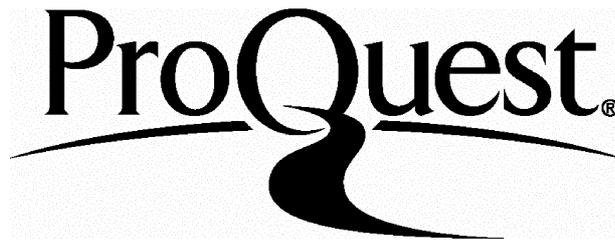
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ABSTRACT

A preference for a thinner body shape is prevalent among females in Western culture and body dissatisfaction and dieting are reported in girls as young as nine years of age. Sociocultural pressure is considered a dominant impetus behind women's desire to conform to prescribed standards of appearance. The present study investigated the psychological processes operating in the development of body dissatisfaction in girls in their pre-adolescent and early adolescent years. Internalisation of the 'thin ideal' was hypothesised as a central component of this mechanism, following recent research with adult women highlighting relationships with body dissatisfaction and pathological eating. Three hundred and fifty six girls aged 9-12 years from independent, high-achieving schools completed questionnaires on awareness and internalisation of the 'thin ideal', body dissatisfaction, and specific psychological and interpersonal influences. The practice of dieting was assessed and the girls' body weight and height were measured.

Body dissatisfaction and dieting were associated with greater Body Mass Index, although not restricted to overweight girls, and no difference was found between age groups. Internalisation of the thin ideal was found to mediate the relationship between awareness of the sociocultural standard of appearance and body dissatisfaction, and media exposure and the weight / eating-related attitudes and behaviour of the girls' mother and best friend independently predicted awareness. The predictive effects of maternal and peer weight / eating-related attitudes and behaviour remained when controlling for the other and for media exposure. Teasing frequency predicted body dissatisfaction when controlling for awareness and

internalisation, suggesting that these operate as independent processes in body dissatisfaction development. Body dissatisfaction was further found to mediate the relationships between internalisation and dieting, and teasing and dieting. Self-esteem and teasing were not found to operate as moderators of the awareness-internalisation or internalisation-body dissatisfaction associations and possible explanations are explored. Identification of the psychological processes involved in the development of body dissatisfaction, which operate at a young age in some girls, highlights targets for intervention strategies to prevent girls becoming discontent with their body shape / size, engaging in dieting behaviour and possibly progressing to a clinical eating disorder.

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1 INTRODUCTION

1.1 OVERVIEW

Academic and popular interest in the subjective component of appearance-related body image has grown considerably in recent years. Intensive psychological research conducted in this area highlights the interaction between an individual's experience of their body and the sociocultural influences to which they have been exposed. Of concern is the seemingly normative experience of body dissatisfaction among children and adolescents, particularly females, in Western cultures. This phenomenon has implications for health and educational professionals, as the inter-relationships between body dissatisfaction and dieting and clinical eating disorders, both increasingly prevalent in this population, are well documented.

This introductory chapter will initially consider definition and measurement issues in relation to body image and will explore the phenomenon of subjective body dissatisfaction in adult women and adolescent and pre-adolescent girls. Subsequent sections will review the literature on the inter-relationships between body dissatisfaction, dieting and eating disorders and the role of social and psychological factors in understanding the development of body dissatisfaction will be considered. Issues pertaining to body image and culture will be discussed, emphasising the social pressures on women exerted by the 'thin ideal', the stereotype of female beauty in Western cultures. The possible etiological role of internalisation, the acceptance and subscription to this ideal-body stereotype will be explored in some detail. The implications of the research evidence for primary prevention will be considered and evaluation studies of interventions described. Throughout this chapter,

developmental issues concerning body dissatisfaction will be highlighted and particular reference will be made to research with adolescents and pre-adolescent children. The final section will outline the aims and research questions of the present study.

1.2 DEFINING AND ASSESSING BODY IMAGE

Definition

Body image research conducted during the first half of this century has been concerned exclusively with the distorted perceptual experiences of the body following brain damage. Researchers have since acknowledged the framework of diverse psychological and sociological influences within which perceptions and experiences of one's body take place. Current literature conceptualises body image as a multidimensional construct encompassing size estimation accuracy, perception of one's attractiveness, perception of body boundaries, and accuracy of perception of bodily sensations (Fisher, 1990). Research on appearance-related body image has focused on the first two of these aspects. Size estimation accuracy, or body image distortion, refers to the perceptual component of physical appearance. The second component is subjective in nature and refers to attitudes towards one's body size / weight, specific body parts or overall physical appearance. Appearance-related body image therefore comprises three elements; 1) body size estimation; 2) evaluation of body attractiveness; 3) emotions associated with shape and size. Thus, body image has been defined as, "*A person's perceptions, thoughts and feelings about his or her body*" (Grogan, 1999).

Assessment of the Perceptual Component

In whole body estimation techniques, real-life images distorted to be objectively thinner or fatter than reality are presented to participants in the form of photographs (Garfinkel et al., 1979) or video images (Touyz et al., 1985). Participants are required to select the image they perceive as matching their current size. These techniques yield a quantitative measure of perceptual inaccuracy, calculated from the degree of discrepancy between the individual's actual and perceived size. Alternative assessment procedures require participants to approximate the widths of specific body parts using a light beam projector, which are compared with actual widths to give a measure of over / underestimation of size (Thompson & Spana, 1988).

Studies employing these methods report that women tend to overestimate their size, a finding that is not restricted to eating disordered populations (Cash & Brown, 1989). Research further indicates that overestimation may be localised to specific body sites, particularly the waist, hips and thighs (Grogan, 1999; Thompson & Spana, 1988). These findings suggest that studies of body satisfaction should focus on the discrepancy between the individual's perception of their body size and their ideal size, rather than their actual and ideal sizes.

Assessment of the Subjective Component

General body size / weight satisfaction is commonly assessed using figural stimulus materials. A series of nine schematic figures showing a range of body sizes from underweight to overweight has been widely administered in research studies. Participants are required to select the figures most closely representing their current

and ideal sizes (Stunkard et al., 1983). The discrepancy between the ratings is considered to indicate the individual's level of body dissatisfaction. A set of figure drawings based on this principle has also been developed for use with adolescent samples (Collins, 1991). However, it has been found that ratings of current size are influenced by whether participants are instructed to consider what they *feel* or what they *think* their current size is, thereby differentially tapping into affective and cognitive components respectively (Thompson, 1992). A procedure thought to assess affective reactions specifically associated with body image requires participants to closely look at their body in a mirror and rate their level of comfort-discomfort on the scale provided (Keeton et al., 1990).

There is an abundance of questionnaire measures developed to assess the subjective aspect of appearance-related body image. However, this component incorporates satisfaction, concerns, thoughts, behaviour and anxiety (Thompson et al., 1990). The differences between these aspects may be subtle and it is likely that many instruments measure more than one. The Body Esteem Scale (Franzoi & Shields, 1984) and the Body Dissatisfaction sub-scale of the Eating Disorders Inventory (Garner et al., 1983) measure weight / size dissatisfaction exclusively. However, they assess generic body image dissatisfaction, as no distinction is made between cognitive and affective components. Similar global measures developed for use with children and adolescent samples include the Body Esteem Scale for 7-11 year olds (Mendelson & White, 1982) and the Body Image sub-scale of the Self Image Questionnaire for Young Adolescents for 10-15 year olds (Petersen et al., 1984).

Other questionnaires do tap into one specific aspect, achieved by a narrow range of items or precise instructional protocol. The Physical Appearance State and Trait Anxiety Scale (Reed et al., 1991) measures the anxiety, an affective construct, associated with various weight relevant and non-weight relevant body parts. An instrument which has been used to measure the cognitive aspect of body image is the Physical Appearance sub-scale of the Bulimia Cognitive Distortions Scale (Schulman et al., 1986). Behavioural indicators may also be used as an indirect measure of the subjective component of appearance-related body image. For example, the Body Image Avoidance Questionnaire (Rosen et al., 1991) incorporates sub-scales concerned with clothing, eating restraint, social activities and grooming / weighing. Participants indicate the extent of their avoidance of situations in each of these domains related to body image.

Qualitative techniques have also been employed to investigate appearance-related body image. Semi-structured interviews may facilitate a detailed exploration of attitudes towards appearance and feelings of personal body dissatisfaction. Indeed, this methodological approach enables participants to address issues salient to their own experience, which may be neglected with self-report questionnaire measures alone.

Given the wide range of measures available, the particular technique or instrument utilised will depend on its psychometric properties, the participant population and the research or clinical purpose. It is argued that studies on appearance-related body image should employ a figure rating technique, as this may assess both perceptual and subjective components (Thompson et al., 1990). The

discrepancy between ideal and perceived current size indicates the degree of body image dissatisfaction and a comparison between perceived and actual body size may be used to assess body image distortion.

1.3 BODY DISSATISFACTION

Adult Women

Studies employing figure-rating techniques have consistently shown that adult women in Western cultures perceive themselves as heavier than they would prefer to be, selecting a thinner figure for their ideal size than for their current size. This finding has been documented for American (Fallon & Rozin, 1985), Australian (Tiggemann & Pennington, 1990) and British samples (Wardle et al., 1993) and is supported by evidence from questionnaire studies. It is reported that at least 50% of women are dissatisfied with their overall appearance, assessed on the Body Dissatisfaction sub-scale of the EDI (Garner et al., 1983). However, replications of studies employing a variety of assessment techniques are required to establish the prevalence of body dissatisfaction amongst adult women. Interview studies similarly indicate high levels of body dissatisfaction. Indeed, all participants in one study described an image of their ideal appearance, which incorporated changes to the shape or size of their legs, stomach and / or buttocks (Charles & Kerr, 1986). Qualitative studies further report that women expect to feel happier and more self-confident following weight loss and that they would be upset and would avoid social activities if they gained seven pounds (Grogan, 1999). Thus, the perceived effect of weight loss or gain on women's lives highlights the importance they place on keeping slim and offers support for the notion that body dissatisfaction and attempts

at weight loss are the normative experience of women today (Polivy & Herman, 1987; Tiggemann & Pennington, 1990).

The discrepancy perceived by many women between their current and ideal body shape / size is consistently cited in the literature as a key motivational factor of dieting. Indeed, the media is replete with features on food and weight loss and diet products are readily accessible to the consumer. Thus, dieting offers what appears to be an inexpensive, widely available and socially acceptable way of achieving the cultural 'thin ideal'. The high prevalence of dieting in this society is such that it has been described as a "national obsession" (Hill et al., 1992). However, the thin body size ubiquitously aspired to is an unrealistic goal for many women, as few are physiologically predisposed to this shape and repeated failed weight loss attempts instead become the reality (Brownell, 1990).

Adolescent and Pre-Adolescent Girls

It is increasingly apparent that body dissatisfaction is not a phenomenon associated exclusively with adulthood but that it is also the experience of many adolescent and pre-adolescent girls. Studies employing age-relevant figure drawings have shown that girls aged 9 years and 14-15 years selected thinner figures for their ideal size compared to their perceived current size (Hill et al., 1992; Tiggemann & Pennington, 1990). Thus, by 9 years of age girls appear to show a preference for the thin body valued by society and experience dissatisfaction if they perceive that their own shape and size fall short of this standard. Indeed, 40% of a sample of 8-9 year old girls reported directly that they wanted to be thinner and this proportion increased to 78% for 11-12 year olds (Maloney et al., 1989).

Body dissatisfaction measured using adjustable life-size video images has been shown to increase from 9 to 12 years, represented by a greater current-ideal discrepancy index in the older age group (Gardner et al., 1997). This finding has received further support, as the proportion of children who expressed a desire to be thinner on the Body Esteem Scale increased from 36% to 68% between the 6-7 year and 10-11 year age groups (Flanneryschroeder & Chrisler, 1996). Although separate analyses by gender are not provided, none of the younger children in this study said they wanted to be fatter. However, evidence for the experience of body dissatisfaction in younger children is conflicting, as Gardner et al (1997) found that 6-7 year old girls wanted to be larger. This may be due, in part, to the different assessment techniques and instructional protocols employed in studies. Furthermore, firm conclusions about the developmental course of body dissatisfaction during childhood and adolescence cannot be drawn from studies of cross sectional design, but rather these results highlight the need for longitudinal research in this field.

Research suggests that girls understand the concept of dieting as a means to achieve a thinner body size. In interviews, 8 year old girls described dieting as something that adults did to enhance their appearance and 13 year old girls said they avoided chocolate, as they felt 'fat' after eating it, a response which was noted for its similarities to the reports of adult women (Grogan & Wainwright, 1996). Recent research has found that 8-13 year old children believe that exercising, eating less and eating more 'healthy' foods instead of 'fatty' foods constitute dieting (Schur et al., 2000). The use of diet pills was also identified as a means of weight loss by 10% of the girls in this sample. Fifty percent of the children said they wanted to weigh less but only 16% reported that they had attempted to lose weight, suggesting that

although many 8-13 year old children feel, for a variety of reasons, that weight loss would be desirable, they may not necessarily act on this. Similarly, other studies have reported that up to 28% of 10-11 year old participants were currently dieting or had dieted in the past (Flanneryschroeder & Chrisler, 1996; Wardle & Marsland, 1990) and that 40% of children of this age felt that they should be on a diet (Flanneryschroeder & Chrisler, 1996). Schur et al (2000) further found that the children who had attempted to lose weight exercised more and changed their food choices rather than reducing their overall food intake.

Many studies interested in the relationship between dieting and body dissatisfaction do not report objective weights, preventing evaluation of the appropriateness of children's concerns. Some studies, however, have reported a significant increase in weight and height with age, as would be expected from maturational changes (Hill et al., 1992), and a significant, positive correlation between the self-ideal discrepancy and actual weight (Cullari et al., 1998) or Body Mass Index (Gardner et al., 1997). Thus, a larger objective body size is associated with a greater level of body dissatisfaction.

Studies incorporating measures of dietary restraint have found highly restrained girls to be significantly heavier and taller than unrestrained girls, irrespective of age (Hill et al., 1992; Hill et al., 1989). Hill et al (1992) further found that highly restrained girls had lower body esteem and felt significantly more dissatisfied with their waist, hips, thighs and shoulder width than unrestrained girls. A study in which 9-10 year old girls were required to record their daily food intake, reported that girls scoring higher on a dietary restraint questionnaire ingested

significantly less energy than non-restrained girls, 11% less than the recommended daily allowance, and tended to miss breakfast (Hill & Robinson, 1991). The relationship between body dissatisfaction and dieting concerns, with a functional effect on behaviour, is therefore evident in pre-adolescent and adolescent girls, as in adult women. It may be argued that this is inevitable, given the overall greater objective weight of girls who diet. However, Hill et al (1992) found that 40% and 50% of the highly restrained girls aged 14 years and 9 years respectively were within normal weight limits. Thus, for many girls the perception of body size may be a stronger predictor of body dissatisfaction and dieting motivation than actual weight. The question is therefore what contributes to the development of body dissatisfaction and dieting motivation in young girls?

It has been argued that the accumulation of body fat during puberty causes girls' bodies to deviate from the desired thin figure, thereby precipitating body dissatisfaction and weight loss attempts (Attie & Brooks-Gunn, 1989). However, the research reviewed thus far in this chapter indicates that children as young as 9 years, and possible younger, may feel discontented with some aspect of their own body shape / size and have concerns about becoming fatter. Furthermore, the dieting practices of some 10-11 year old children implies that the motivation to diet was established at an earlier age. Indeed, research studies have not consistently found a significant difference in body dissatisfaction between pre-menarche and post-menarche groups, suggesting that the onset of puberty may not trigger weight / eating-related concerns and behaviour (Fabian & Thompson, 1989; Veron-Guidry et al., 1997). An alternative argument proposed to explain this phenomenon states,

“Children consume adult beliefs, values and prejudices around body shape and size and adopt them as their own,” (Hill et al., 1992).

1.4 BODY DISSATISFACTION, DIETING AND EATING DISORDERS

Body Dissatisfaction: A Common Factor

There is mounting clinical and research evidence for the presence of eating disorders and sub-threshold bingeing / purging behaviour among adolescent and even pre-adolescent populations. As only a minority of girls develop a clinically diagnosable eating disorder, a comprehensive etiological model must explain the developmental pathway towards eating disturbance and delineate vulnerability factors that differentiate between individuals with the clinical syndrome, some level of disturbed eating and no pathology.

This literature review has so far highlighted the pervasive ‘normative’ experience of discontent with weight and shape among women and girls in Western culture. However, numerous studies have reported a relationship between body dissatisfaction and eating disorder symptomatology (Stice & Agras, 1998; Stice et al., 1994; Stice & Shaw, 1994). There is also some evidence from prospective analyses that excessive weight concerns can predict subsequent disturbed eating among adolescent girls (Killen et al., 1994). In this study, 3.6% of the sample developed eating disorder symptomatology and 1.4% met criteria for bulimia nervosa over a three-year period. Indeed, DSM-IV criteria for anorexia nervosa specifies, *“Intense fear of gaining weight or becoming fat”* and *“undue influence of body weight or shape on self evaluation”*. The definition for bulimia nervosa incorporates

criteria with a similar emphasis on weight and shape concerns specifying “*recurrent inappropriate compensatory behaviours to prevent weight gain*” and “*self evaluation is unduly influenced by body shape and weight*”. Thus, preoccupation with weight and dissatisfaction with one’s own body, are common to clinical and non-clinical populations. DSM-IV criteria emphasise over-valuation of shape and weight to distinguish the attitudes and concerns associated with the clinical disorder from those commonly experienced by the general female population.

The relationship between eating disorders and dieting is also well documented and studies have identified dieting as a precursor to bulimia nervosa (Mitchell et al., 1985) and childhood anorexia nervosa (Atkins & Silber, 1993). The risk of 15 year old, dieting girls developing an eating disorder is reported to be eight times greater than for non-dieters (Patton et al., 1990). A theoretical model proposed to explain the increased likelihood of dieting on subsequent binge eating in bulimia nervosa and the binge eating sub-type of anorexia nervosa emphasises the role of cognitive factors (Polivy & Herman, 1985). Polivy and Herman (1985) argue that when restrained eaters believe that their diet has been violated, they overeat but as long as they feel in control of their intake they continue to restrict what they eat. Thus, the trigger for binge eating in dieters is thought to be cognitive

The Continuity and Discontinuity Hypotheses

The observed similarities between dieting and eating disorders and the accumulating evidence for the inter-relationships of these together with body dissatisfaction have generated interest among theorists regarding a continuum of weight related concerns and behaviour. This perspective assumes continuity ranging

from no problems, through 'normative' states to clinical eating disorders at the extreme end and proponents of this model argue that points on the pole differ solely according to degree (Pike & Rodin, 1991; Striegel-Moore et al., 1986). It is implied that dieting plays a causal role in the development of eating disorders and thus pathological eating may begin in the normative range. The contrasting argument posits that there are qualitative differences between people with clinical eating disorders from those with sub-threshold eating disturbances and normal eating (Bruch, 1973).

Studies contrasting bulimic individuals, sub-bulimic individuals and controls have found that these groups could be reliably differentiated by drive for thinness, dietary restraint and self-esteem (Vanderheyden & Boland, 1987) or dietary restraint, perceived pressure to be thin, body dissatisfaction, negative affect and ideal-body internalisation (Stice et al., 1996). Furthermore, the sub-threshold individuals fell between the other two groups on measures of all variables. These findings elucidated quantitative differences between the groups, thereby providing support for the continuity perspective. However, another study found that bulimic women differed from dieters on eighteen measures of psychological symptomatology, although dieters and controls differed on only one, suggesting categorical differences between the groups (Ruderman & Besbeas, 1992). It is argued that studies comparing the groups on predominantly on weight-related dimensions have tended to support the continuity hypothesis whereas the discontinuity hypothesis receives support from studies investigating psychological symptoms, thereby explaining the lack of unequivocal evidence for either perspective (Stice et al., 1998a). However, Stice et al (1998) have addressed this issue by contrasting groups on both weight-

related factors and psychopathology variables. Analysis revealed a single discriminant function incorporating both weight-related factors (thin ideal internalisation, dietary restraint and body dissatisfaction) and psychopathology variables (anxiety symptoms, depressive symptoms and emotionality) that significantly differentiated between adolescents in the control, sub-threshold bulimic and bulimic groups. The authors concluded that bulimic females represent the extreme end of a continuum of weight / eating attitudes and behaviour and that both psychopathology variables and weight-related factors conform to the continuity hypothesis.

Etiological Factors in Eating Disorders

Evidence supporting the conceptualisation of a continuum does not imply, however, that all girls who diet and express weight concerns in the 'normative' range progress to exhibit a clinical eating disorder. It is thought that body dissatisfaction and dieting, as well as various interpersonal and self-regulatory difficulties, are necessary for the development of a diagnosable eating disorder (Connors, 1996). Risk factors for the latter domain include a problematic family environment characterised by minimal support, empathy and understanding (Stern et al., 1989), and high levels of conflict and control with little cohesion (Hastings & Kern, 1994). Research has also identified affective disorders among close relatives (Husdon et al., 1983) and traumatic events, specifically childhood sexual abuse (Connors & Morse, 1993), the severity of which was found to be related to the severity of the disturbed eating (Hastings & Kern, 1994), as contributing to increased risk for eating pathology.

Connors (1996) argues that body dissatisfaction, in the absence of additional psychological impairment, often results in dieting. When affective dysregulation, low self-esteem and insecure attachment are the primary concerns resulting from the interpersonal and self-regulatory risk factors described above, the individual is more likely to suffer from non-eating related psychopathology, such as affective or anxiety disorders. A diagnosis of a clinical eating disorder may be afforded to individuals with high body dissatisfaction and affective dysregulation, and some individuals with moderate risk in both domains of experience may be vulnerable to developing an eating disorder during times of considerable stress. In summary, it is argued that body dissatisfaction and emotional disturbance are both necessary and sufficient conditions for the development of eating disorders, although prospective research is ultimately required to determine the precise etiological pathway.

1.5 CULTURAL DETERMINANTS OF BODY DISSATISFACTION

The ‘Thin Ideal’

It is a recurrent theme in the literature that concepts of physical attractiveness are culturally determined and that the thin standard for beauty of today’s society has a role in the development and maintenance of body dissatisfaction and dieting. Historically, however, standards for beauty in Western culture have changed considerably. A rounded, voluptuous shape was most desirable during the nineteenth century but following World War I women strove for an increasingly non-curvaceous physique. The rise of the mass media during the 1950’s contributed to the popularisation of a small waist and full breasts and then in 1960 the waif-like model Twiggy became the icon of female attractiveness. Thus, the cultural standard of

beauty depicted by female role models has become taller and thinner and is typically described in the literature as the 'thin ideal.' Reasons proposed to explain society's preference for slenderness are threefold: 1) the aesthetic qualities of thinness are associated with beauty and sexual appeal; 2) thinness implies health and power; 3) the attribute of self-control may be inferred from a slim figure (Polivy & Herman, 1987). Interestingly, women overestimate the extent to which both men (Fallon & Rozin, 1985) and female peers (Cohn & Adler, 1992) value thinness, highlighting the degree of social pressure exerted on women by the thin ideal.

While the benchmark for female attractiveness has not remained fixed, the prevailing gender role stereotype in Western culture prescribes preoccupation with desirable physical appearance and the pursuit of this as a behavioural expectation for women. The tendency of women to equate self worth with their perceived appearance (Fallon, 1990) further illustrates the pervasive effects of the gender role stereotype on self-concept as well as on behaviour. It has been suggested that women who place high importance on thinness and actively strive towards this, strongly endorse the female sex role (Striegel-Moore et al., 1986). There is some evidential support for this argument, as the perceived importance of appearance was found to correlate significantly with traits and behaviour intrinsic to the female gender role stereotype in a non-clinical adult sample (Timko et al., 1987). This study further reported a significant correlation between symptoms of disordered eating and the importance placed on appearance, although the authors do not propose a mechanism to explain this relationship.

The widespread influence of gender role stereotypes among adults raises questions concerning the awareness of stereotypes in children. A study investigating the existence of body-build stereotypes in 9-16 year children employed semantic differential rating scales of global self-concepts and body-build concepts. Thin children were described as more good looking, not teased, having many friends, weaker and more afraid than fat children (Stager & Burke, 1982). Thus, attractiveness was more likely to be attributed to the ectomorph than the endomorph, indicating children's awareness of the socio-cultural association of thinness with beauty. It is noticeable that this methodology identified strength and bravery as positive dimensions associated with the endomorph body build, compared to the forced-choice format favoured by many studies, which tend to reveal an overall negative endomorphic stereotype. However, an overall awareness of negative social consequences of obesity and an aversion to this endomorphic body shape have been demonstrated using different assessment techniques in 5-6 year old children (Feldman et al., 1988; Flanneryschroeder & Chrisler, 1996), indicating that stereotypes are transmitted down generations from a very early age. Different psychological theories have been proposed to explain how these concepts filter down to the developing child.

Social Learning Theory depicts children as passive recipients of culturally transmitted information. According to this model children develop an understanding of what is culturally acceptable and appropriate from the observation of other peoples behaviour and other's responses to their own behaviour (Bandura, 1977). Their constructions of gender are formed in response to these various influences and they shape their behaviour accordingly, although this may be modified through

alternative experience. Hence, Social Learning Theory identifies observational learning and modeling as the processes by which children associate femininity with the pursuit of beauty. Gender Schema Theory focuses on the cognitive processing of gender-linked information from the environment (Bem, 1981). The theory assumes an androcentric society and argues that children assimilate gender-polarised images into their self-concept. Thus, children differentially endorse gender stereotypes according to the degree to which they categorise their environment according to gender, rather than the extent to which their behaviour is typically masculine or feminine. However, the theory does not account for the specific learning mechanisms by which children internalise societal norms. Although these theories differ according to the emphasis placed on the role of the individual relative to the environment, both acknowledge the importance of the cultural messages impinging on children.

Media Effects

Some investigators have focused on the mass media, as a powerful method of communicating information to a large, heterogeneous audience, to understand the social pressures on girls and women to conform to the thin ideal. It is widely accepted today that the media plays a crucial role in the cultivation of unrealistic standards for appearance. Indeed, content analysis investigations have found that the prototypical woman portrayed in magazines and on television is thin and that 'heavy' women are infrequently represented (Silverstein et al., 1986). It is argued that these images create and perpetuate the female gender role stereotype, equate thinness with social and occupational success, and denigrate body fat, thereby influencing the way women feel about their own bodies (Levine & Smolak, 1996).

Two influential psychological theories have been proposed to explain the effect of media images on body satisfaction. Social Comparison Theory states that people engage in comparison to judge themselves on a variety of dimensions (Festinger, 1954). Women are exposed to a plethora of images via the media and Social Comparison Theory predicts that these might serve as upward comparison targets against which many women experience negative self-evaluations. Indeed, it is argued that a fundamental aim of television and magazines is to elicit such comparison to persuade women to buy the product advertised as a way of obtaining the ideal body (Thompson et al., 1999).

The Self Schema Theory is concerned with the way media messages are assimilated, and subsequently influence, an individual's sense of self (Markus, 1977). An adaptation of this theory states that women draw on three reference points to construct a mental representation of body image (Myers & Biocca, 1992). These are 1) the 'socially-represented ideal body', represented in the media or promoted by family and peers; 2) the 'objective body' and 3) the 'internalised ideal body', a compromise between the objective body and socially-represented ideal. Myers and Biocca (1992) assert that the reference points frequently change and that body image is modifiable through new information. Indeed, reference points for self-assessment may be modified by the socio-cultural definitions of beauty. If the discrepancy between the 'objective' and 'internalised ideal' bodies is too great, self-criticism and reduced body esteem may result. They argue that the media makes the 'socially-represented ideal body' so slim that the 'internalised ideal body' becomes unrealistically thin, thereby widening this discrepancy. Other self-schema theorists have further argued that the potency of this discrepancy is modified by the degree to

which the individual is schematic for the appearance trait, or considers appearance to be important (Altabe & Thompson, 1996).

From a very early age children are bombarded with messages about acceptable body sizes and shapes. Simple calculations showed that to attain the proportions of a Barbie doll, a popular toy of young girls, the female population would have to grow taller, develop larger breasts, a thinner waist and a longer neck (Brownell & Napolitano, 1995). Thus, even through toys, children are exposed to unrealistic images of shape and weight that are accepted by society.

Studies have shown that the self-reported frequency of reading fashion / teenage magazines and the extent to which adolescent girls found these to be an important source of information about attractiveness predicted investment in thinness, weight management behaviour and disturbed eating (Field et al., 1999; Levine et al., 1994a). However, an inference of linear causality between exposure to relevant print media and weight-related concerns and behaviour may not be made from these studies of cross sectional design. Girls already experiencing body dissatisfaction may be more likely to read teenage magazines for advice or to validate their negative and possible distorted beliefs about weight and shape. Thus, exposure to weight-relevant media may contribute to the development of body dissatisfaction, or girls with pre-existing concerns may directly seek this information. Nevertheless, it is apparent that girls are sensitive to cultural pressures to conform to a narrow range of socially acceptable body shapes.

There is some evidence to suggest that exposure to thin ideal images does have a direct effect on body dissatisfaction. Studies have found that women reported increased body dissatisfaction (Stice & Shaw, 1994) and reduced body esteem (Grogan et al., 1996) following exposure to magazine advertisements depicting thin models and photographic images of thin models respectively compared to control groups. These findings may be predicted by Social Comparison Theory or the Self-Schema Theory, as the effect may be due to upward social comparisons with the models or a change in the 'internalised ideal body' to a thinner ideal. However, Grogan et al (1996) did not report the effect of exposure on participant's ideal body size and Stice & Shaw (1994) found that, contrary to their hypothesis, exposure did not influence women's ideal body size. They suggest that the experimental manipulation technique employed may not possess sufficient ecological validity compared to actual socialisation processes to effect the internalised body ideal. Research further indicates that following exposure to visual images of the thin ideal, women experienced heightened depression (Pinhas et al., 1999; Stice & Shaw, 1994).

Particular women may be more vulnerable to the psychological effects of media images. Pinhas et al (1999) found that women who scored highly on the Eating Disorders Inventory experienced the greatest increase in depressed mood following exposure to the images. Thus, evidence suggests that images portrayed in women's magazines have adverse effects on body satisfaction and affective state and that the psychological effect of such images may be exacerbated in women with pre-existing body weight concerns and disturbed eating patterns. The thin ideal may therefore function as both a causal and maintaining factor of weight-related concerns and behaviour. However, longitudinal studies are ultimately required to establish

whether girls and women highly exposed to media images of the thin ideal are more likely to develop weight concerns and weight management behaviour than those less exposed to cultural messages about appearance.

Ethnicity and Social Class

Divergent attitudes and aesthetic values associated with body shape / size are documented among different ethnic groups in Western culture. Studies have found that American Black and Asian women are more likely than White women to select a larger figure as their ideal shape, report less perceived pressure to be thin and experience fewer weight-related concerns (Abrams et al., 1993; Powell & Kahn, 1995). Thus, it is argued that the high value ascribed to thinness and the stigmatisation of fatness are predominantly views held by the Caucasian Western population, reflecting variation in popular media images represented by these sub-cultures (Grogan, 1999).

However, recent work suggests that the attitudes of non-White females in Western culture may be changing. A strong desire for thinness was found among 9 year old British Asian and Caucasian girls, even though the Asian girls had lower actual body weights (Hill & Bhatti, 1995). For both groups, a higher level of body dissatisfaction was related to restrained eating. Thus, contrary to previous research, a preference for thinness was not exclusive to White females in this sample. Other studies have reported greater levels of body dissatisfaction among 12 year old Asian and Hispanic girls compared with White girls, once actual weight is accounted for (Robinson et al., 1996). Together, these findings suggest that the social pressures

towards thinness prevalent among Western culture may be permeating into non-Caucasian groups.

There is a paucity of studies in the literature that compare the attitudes towards appearance in Western and other cultures, possibly due to the implications of applying diverse methodology across cultures. However, one key study in this field investigated the perceptions of female body shape / size of Kenyan Asian women born and resident in Kenya, Kenyan Asian women born in Kenya but resident in Britain for at least four years and white British women living in Britain (Furnham & Alibhai, 1983). Results showed that the Kenyan Asians perceived the fat female shapes significantly more positively on a variety of bipolar constructs than did both other groups and rated the thin figures less favourably. Furthermore, the perceptions of the British Kenyan group more closely resembled those of the white British than the Kenyan Asian group. As all three participant groups were matched for socio-economic class and perception of their own body shape these results may be assumed to reflect cultural differences in attitude. The similar attitudes of the White British and Kenyan British women suggests that people may integrate new cultural norms into their perception of ideal appearance. Thus, while the thin standard for female attractiveness and the stigma of overweight are not universally held values, original attitudes and perceptions may be modified, and identification with a particular culture is ultimately important in the perception of what is ideal.

Beauty and wealth have been closely linked throughout history and it has been argued that women of higher socioeconomic status are preoccupied with their weight and shape, as they have the resources to emulate the popular icons of fashion and

beauty (Fallon, 1990; Striegel-Moore et al., 1986). However, research investigating the relationship between body satisfaction and social class has yielded inconsistent results. Increased levels of weight concerns and dieting behavior were found among 11-18 year old girls attending schools for pupils of higher social class backgrounds (Wardle & Marsland, 1990). Interestingly, independent schools and universities, as academic institutions catering predominantly for the middle and upper socio-economic groups, are thought to intensify the socio-cultural pressures towards thinness (Striegel-Moore et al., 1986). Such stressful and high-achieving environments may foster both academic competition and competition for thinness. Other studies, however, have found no evidence of a relationship between body dissatisfaction and socio-economic status in adolescent girls (Robinson et al., 1996). It may therefore be false to assume at the current time that body concerns fall in the exclusive domain of women of higher social status. Rather, a much wider audience may now receive the pressures exerted by the thin ideal due to developments in mass media communication.

1.6 SOCIAL AND PSYCHOLOGICAL FACTORS

Maternal and Peer Influences

As illustrated in this discussion so far, intensive research has focused on cultural values transmitted via the mass media to understand the origins of body dissatisfaction. In comparison, relatively little has been written about the potential influence of interpersonal factors, which may be more or less salient for particular individuals. Social Learning Theory emphasises the role of modeling, feedback and instruction in the acquisition of attitudes and behaviour, suggesting that the nature of

certain social interactions may be an important source of influence. It has been proposed that mothers are a primary socialisation agent, transmitting the sociocultural values regarding weight and appearance to their daughters (Striegel-Moore et al., 1986).

Research has found that a child's level of body satisfaction is related to that of their mother, demonstrated by direct assessment of mothers from both clinical and non-clinical populations and their young daughters (Evans & le Grange, 1995) and through adult women's retrospective accounts of their childhood (Rieves & Cash, 1996). Studies further indicate a relationship between dietary restraint of mothers and their 10-11 year old daughters (Hill & Franklin, 1998; Hill et al., 1990). Interestingly, mothers of dieting girls rated their daughters as less attractive than other girls (Hill & Franklin, 1998). Similar findings have been reported from research with clinical populations of children, as mothers of eating disordered daughters were found to have more disturbed eating patterns and a longer dieting history compared to mothers of non-eating disordered daughters (Pike & Rodin, 1991). These women also felt that their daughters should lose more weight compared to mothers in the comparison group and they had a more critical attitude towards their daughters appearance, rating them as less attractive than the girls rated themselves (Pike & Rodin, 1991).

Collectively, these findings suggest that maternal weight / eating-related concerns and behaviour are a risk factor for the development of body dissatisfaction and restrained and disturbed eating in adolescent girls. However, the specific mechanism of transmission of the nature and importance of sociocultural values must

be considered. The evidence reviewed above suggests that mothers may indirectly model dieting attitudes and behaviour. There is further evidence to indicate that mothers directly try to improve their daughters appearance and encourage them to diet (Striegel-Moore & Kearney-Cooke, 1994). Indeed, the effort invested in encouraging their child to diet was related to parental dieting behaviour. Thus, it appears that direct communication of maternal attitudes and information about weight management plays a role in the development of similar attitudes and behaviour in children. It is argued that if direct encouragement of this nature is occurring, then indirect modeling may also be taking place, as parents transmit their own attitudes and values in subtle ways (Hill & Franklin, 1998). Striegel-Moore and Kearney-Cooke (1994) further found that parents of adolescents are more critical of their child's appearance, give less praise and increased encouragement to diet, than parents of younger children (Striegel-Moore & Kearney-Cooke, 1994). Thus, as the child approaches adolescence, parents begin to transmit cultural values regarding weight and appearance more actively.

There has been little research investigating the influence of an individual's peer group in enhancing or diminishing the importance of thinness and weight loss. However, intuitively this is a powerful influence, as girls typically share personal concerns and interests within their immediate friendship environment. Indeed, 41.5% of middle school girls reported that they talked with their friends about weight, shape and dieting at least sometimes and higher levels of peer interaction were found to be associated with higher levels of disordered eating attitudes and behaviour (Levine et al., 1994b). The importance peers put on weight and eating was found to be strongly and significantly related to weight concerns in 9-11 year old

children and may therefore be another potential risk factor for dieting and eating disorders (Barr Taylor et al., 1998).

Teasing

In addition to the societal messages about appearance communicated via the media, there is evidence that interpersonal experiences providing negative evaluative feedback about one's appearance influence the development of body dissatisfaction and disturbed eating. Teasing is a common occurrence during childhood and adolescence and physical appearance is a typical focus. Research conducted in this field is predominantly retrospective in design, relying on the historical recall of events in the absence of collaborative data. It is noteworthy, however, that even if collaborative data were obtained, a significant other is unlikely to have been present for all occurrences of teasing.

Studies have consistently demonstrated a relationship between reports of childhood appearance-related teasing, and body dissatisfaction and eating disturbance in late adolescence or adulthood (Fabian & Thompson, 1989; Gardner et al., 1997; Rieves & Cash, 1996; Stormer & Thompson, 1996; Thompson et al., 1995b; Thompson et al., 1999; Thompson & Heinberg, 1993). A history of teasing about weight or size has been found to have both direct and indirect predictive effects. Thompson et al (1995) reported a direct effect of teasing history on body dissatisfaction and eating disturbance and Thompson et al (1999) found that body dissatisfaction mediated the effect of teasing on eating problems. Furthermore, the effect of obesity level on body dissatisfaction has been shown to be mediated by a history of appearance-related teasing (Thompson et al., 1995b). The limited

longitudinal evidence available has shown that teasing predicted body dissatisfaction in adolescent girls at three year follow up (Thompson et al., 1995b) and that this finding is consistent once age, level of obesity and maturational status were accounted for (Cattarin & Thompson, 1994).

Longitudinal and retrospective cross sectional research has shown that the deleterious effects of appearance-related negative verbal feedback in childhood continue to be influential through adolescence and into adulthood. Peers are reported to be the most frequent perpetrators of teasing and criticism and brothers as the most frequent among family members (Rieves & Cash, 1996). Indeed, the powerful impact of familial commentary regarding appearance is indicated in the literature. Teasing by family members was found to contribute significantly to variation in body dissatisfaction, investment in thinness, weight management behaviour and disturbed eating in 10-14 year old girls and a significant relationship was found between peer teasing and body dissatisfaction alone. Furthermore, the comments made specifically by mothers about the weight of their 9-11 year old daughters were found to be significantly related to the child's weight loss attempts, body esteem and concerns about weight gain (Smolak et al., 1999). Hence, the research evidence suggests that negative verbal commentary about size and weight teasing represents a critical etiological factor in a developmental model of body dissatisfaction and eating disturbance.

Self-Esteem

The experience of one's somatic self is an implicit part of general self-concept. As mentioned previously in this discussion, however, body image becomes even

more closely affiliated with overall self-worth for women living in a Western, weight conscious society, as the pursuit of an acceptable physical appearance is of central importance to the female gender role stereotype. Given the preoccupation with appearance and the epidemic of dieting in this society, it is perhaps understandable that girls begin to invest a substantial part of their self-worth in how they look.

Many studies have reported a strong, positive relationship between level of body dissatisfaction and global feelings of self-esteem in adult women (Mintz & Betz, 1986; Striegel-Moore et al., 1986) and pre-menarchal and post-menarchal girls (Fabian & Thompson, 1989). Indeed, high self-esteem has been identified as a significant predictor of body satisfaction (Tiggemann, 1992). Interview studies have similarly revealed the wider implications of weight and eating-related concerns on self-perception. Adolescent girls reported feeling guilty and viewed themselves as greedy after eating something they felt they shouldn't and said they would be happier about themselves if they were half a stone lighter (Grogan & Wainwright, 1996). However, the causal link may operate in either direction. Feeling dissatisfied with one's body may impact on overall self-esteem. Indeed, individuals with eating disorders who have a strong investment in thinness believe that others evaluate them solely on their appearance. Alternatively, body dissatisfaction may be a product of a negative self-concept. It is argued that the relationship between self-esteem and body satisfaction is inter-dependent, such that they impact on each other (Freedman, 1990; Grogan, 1999).

Some studies have failed to demonstrate a relationship between body dissatisfaction and self-esteem (Silberstein et al., 1988). This conflicting evidence

may be due, in part, to the different definitions of body image and various measures employed in studies. To account for these discrepant findings, Silberstein et al (1988) suggest that women living in a weight conscious society accept that body dissatisfaction is the normative experience. They argue that in this way, women's experience does not deviate from that of their peers, thereby protecting them from any negative influence of body dissatisfaction on self-esteem. It is possible, however, that body dissatisfaction impacts on self-esteem only in those individuals who consider appearance to be fundamental to self-evaluation overall, although this hypothesis has not been subjected to empirical investigation.

1.7 INTERNALISATION OF THE THIN IDEAL

The research evidence reviewed so far provides considerable support for the argument that sociocultural pressure is the impetus behind women's desire to conform to prescribed standards of appearance and that these factors are paramount in maintaining body dissatisfaction, dieting and clinical eating disorders. As previously highlighted, however, a difficulty associated with establishing the direction of causality is inherent in studies analysing the relationship between sociocultural factors and weight / eating-related concerns and behaviour. Thus, such studies do not explain the mechanisms underlying the development of body dissatisfaction and restrained or disturbed eating patterns.

In recent years, investigators have proposed hypotheses concerning possible mechanisms. Considerable research interest has been directed towards understanding the role of an individual's awareness of the sociocultural pressures and

their acceptance, or internalisation, of these standards. Validation of the Sociocultural Attitudes Towards Appearance Questionnaire, developed to assess both of these dimensions, found that awareness and internalisation of the ideal body stereotype showed good convergence with various measures of body dissatisfaction and eating disturbance (Heinberg et al., 1995). Indeed, the concept of an internalised body ideal is a key feature of the Self-Schema Theory, postulated to explain the influence of media messages on the mental construction of ones own body image (Myers & Biocca, 1992). It is argued that women internalise the ideal-body stereotype, thereby accepting and subscribing to this as a personal standard for physical appearance, to different degrees, and that women who have internalised sociocultural pressures for thinness more deeply are at greater risk of developing an eating disorder (Striegel-Moore et al., 1986). Evidence of higher levels of ideal body internalisation among bulimic women (Stice et al., 1996) and the ability of internalisation to predict eating disorder symptomatology (Cusumano & Thompson, 1997) and the onset of bulimic behaviour in prospective research provides support for this argument (Stice & Agras, 1998).

The role of internalisation in the development of body dissatisfaction has been subject to empirical testing in some studies. A study using structural equation modeling indicated that the negative effects of exposure to the thin ideal via visual media were partially mediated by the internalisation of sociocultural pressures (Stice et al., 1994). Specifically, media exposure predicted increased gender role endorsement, which heightened the degree of internalisation. Internalisation was further related to body dissatisfaction, which in turn mediated the relationship with eating disorder symptomatology. Gender role endorsement in this study

encompassed various social roles stereotypically associated with women. Interestingly, other research has suggested that disturbed eating is not related to femininity per se, but specifically to the aspect of the female gender role concerned with the importance of appearance (Timko et al., 1987).

Exposing adults to images of thin models using experimental manipulation techniques has not had a consistent effect on internalisation (Stice et al., 1994; Stice & Shaw, 1994). These findings may indicate that the thin ideal is internalised at a young age and therefore not easily influenced during adulthood by experimental manipulation, which in turn is a technique lacking some ecological validity compared to actual socialisation processes. Furthermore, other socialisation agents apart from media, such as family and peers may be important factors influencing the internalised ideal body. Longitudinal research found that internalisation of the thin ideal was correlated with dieting but did not prospectively predict change in dieting behaviour over a nine month period in 16-19 year old girls (Stice et al., 1998b). This suggests that internalisation may have a crucial impact as a risk factor earlier than late adolescence and that it may be an important part of the mechanism underlying dieting motivation operating during pre-adolescence, rather than influencing the pattern of dieting in late adolescence and adulthood.

In summary, social pressure to achieve a thin body is exerted on females from various sources, including the media, peers and family. These pressures reinforce the value of a thin body, thereby promoting internalisation of the thin ideal. In individuals who have internalised this ideal body stereotype, the perceived discrepancy between actual and ideal body shape / size results in the subjective

experience of body dissatisfaction. There is also some evidence that perceived social pressures, particularly teasing about body shape / size, may directly contribute to body dissatisfaction (Stice et al., 1998c). Thus, social pressure in the form of negative feedback may be sufficient to promote body dissatisfaction even in people who have not internalised the thin ideal. Social pressure may further have a direct effect on restrained eating (Stice et al., 1998c), highlighting their power in promoting eating behaviour in the absence of an internalised thin ideal and body dissatisfaction.

1.8 PRIMARY PREVENTION

Evidence for the relationship between body dissatisfaction and eating disorders suggests that preventative programmes targeting weight concerns may be productive. Indeed, the aim of primary prevention is defined as, *“Reducing the incidence of an undesired behaviour through reduction or elimination of risk factors that can cause or contribute to its occurrence”* (Gabel & Kearney, 1998 p33). In the field of eating disorders, such interventions might have the added benefits of reducing the widespread discontent experienced by adolescent and preadolescent girls in this society and avoiding risk associated with reduced nutritional intake through dieting at such a crucial time in their development. Although limited, outcome research evaluating primary prevention programmes has typically focused on three components of weight / eating-related concerns; 1) knowledge; 2) attitudes; 3) behaviour. However, evidence for the benefits of prevention interventions has been inconsistent.

In one of the few studies reporting a good outcome, 13 year old girls were presented with a short videotape depicting a conversation between sisters about bulimia nervosa and its effects, sociocultural attitudes towards thinness, dieting, healthy weight regulation techniques and ways of resisting peer pressure to diet (Moreno & Thelen, 1993). The experimental and control groups were found to differ significantly on their knowledge about the undesirable effects of dieting and purging and on their level of weight concerns. The long-term effectiveness of this strategy is not known, however, as participants were assessed only one month post-intervention. Likewise, the reported effectiveness of specific prevention strategies with young adult women should be interpreted with caution due to inadequate follow up procedures (Huon, 1994; Springer et al., 1999).

Other research has reported overall less encouraging findings for both short and long-term effects of preventative interventions. In a randomised controlled study, a programme aimed at teaching girls aged 11-13 years the harmful effects of unhealthy weight regulation, promoting healthy eating and exercise and developing coping skills to resist sociocultural influences towards thinness and dieting was incorporated into the school curriculum (Killen et al., 1993). Slides depicting girls implementing healthy and unhealthy approaches to weight regulation and role-plays were used to teach pupils to recognise social influences towards thinness, evaluate their options and resist these pressures. At the eighteen-week follow up a significant increase in knowledge was found for the entire sample and in the subset of girls identified to be at higher risk for developing an eating disorder. However, no significant differences in attitudes towards eating, weight-related concerns and weight regulation practices were found between the treatment and control groups. A

further study evaluating structured classes addressing the determinants of body size and shape, nutrition, weight regulation techniques and media representation of the ideal female body found no changes in eating behaviour in 14 year old girls at one-month and twelve-month follow up. Indeed, an increase in body dissatisfaction over time was reported (Paxton, 1993).

Killen et al (1993) suggested that preventative intervention programmes may be most beneficial for girls at higher risk of developing an eating disorder, as they found a trend for the weight concerns of girls in this group to decrease compared to the control group at seven-month follow up. This argument has received further support, as drive for thinness and body dissatisfaction were shown to have significantly improved at six months only for those 10 year old girls scoring the highest on these measures at baseline (Huon et al., 1997), although this may be partly due to regression to the mean.

It appears that a short-term educational approach may increase girls' knowledge of weight / eating related issues, but there is little support for the effectiveness of programmes in changing attitudes and behaviour, except perhaps for a minority of high-risk individuals. It is argued that the presentation of primary prevention interventions may need to be modified to utilise the influence of the peer environment in enhancing or diminishing the importance of thinness and weight regulatory behaviours (Paxton, 1993). Thus, small group discussions among friends may be considered. Although short-term favourable effects of group discussion have been demonstrated for young adults (Huon, 1994), appropriate facilitation of the discussion is recommended to avoid possible enhancement of negative attitudes

towards body shape and size (Paxton, 1996). Paxton (1996) suggests pupils are taught to identify when conversations with friends about appearance-related issues trigger individual concerns regarding body shape. She further identifies the potential benefits of cognitive techniques in helping adolescents to re-frame body comparative thoughts and recognise the emotional and behavioural effects of such thoughts.

A recurrent theme in the literature is that body / eating-related concerns and behaviour should be targeted in the pre-adolescent years and thus preventative interventions must be appropriate for this age group. It is suggested that children should be encouraged to pursue fulfilling activities and develop skills in areas unrelated to appearance, accept of a wide range of body shapes, and learn how to respond to teasing. Strategies aimed at increasing parent's awareness of the effect of their own concerns and eating behaviours on their children are also suggested (Shisslak et al., 1996). It should be emphasised, however, that long-term prospective research is ultimately required to evaluate the effectiveness of primary prevention interventions in inoculating girls against developing negative attitudes and disturbed eating.

1.9 THE PRESENT STUDY: AIMS AND HYPOTHESES

The overall aim of the present study is to enhance our understanding of the development of body dissatisfaction. This introductory chapter has highlighted the widespread existence of body dissatisfaction in adult women in Western societies and the increasing prevalence of this among adolescent girls. Indeed, the occurrence of eating disorders in adolescents and the dieting practices reported in girls as young

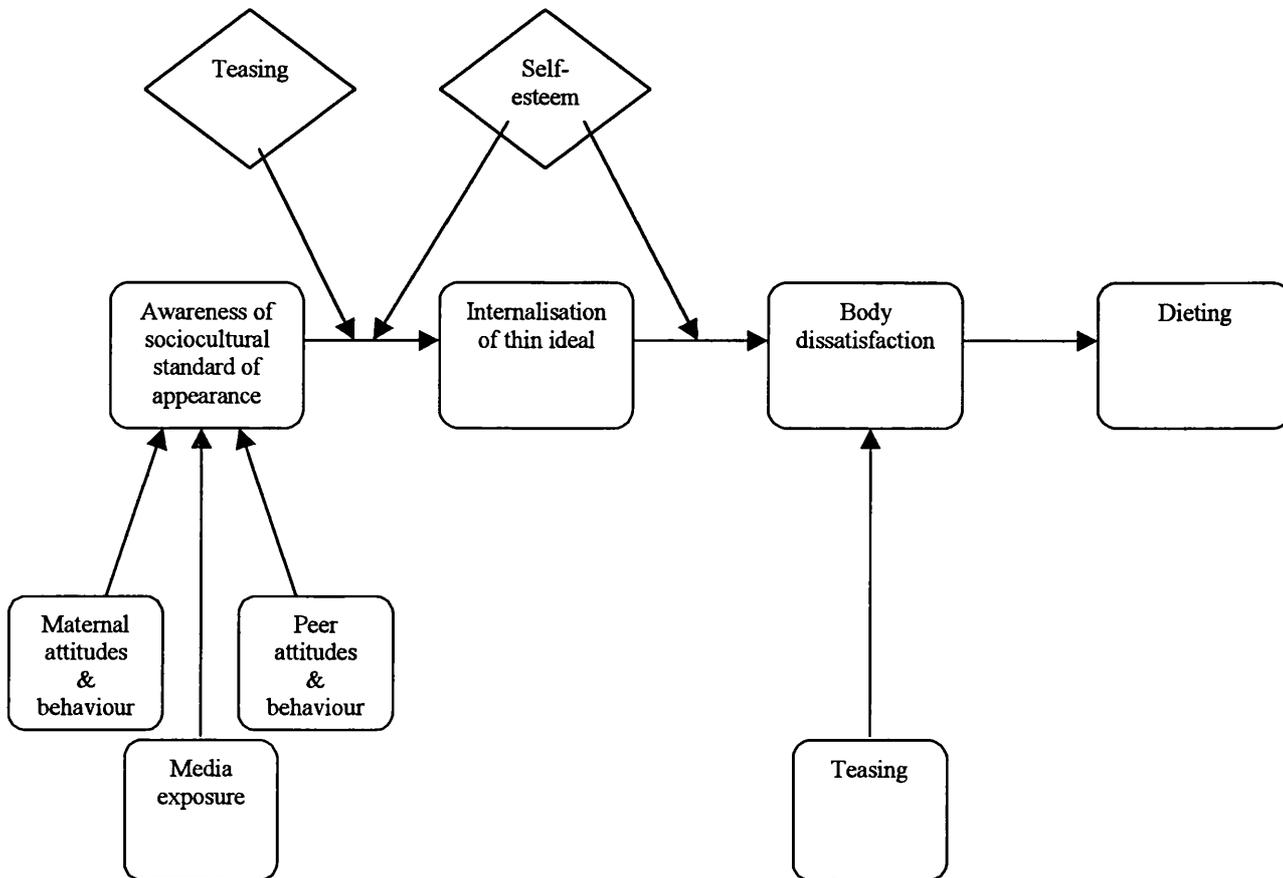
as 11 years suggest that the emergence of these phenomena should be investigated during the early adolescent or pre-adolescent years. Hence, this study is directed at girls aged 9-12 years inclusive.

The literature review indicates that various social, cultural and psychological factors are related to body dissatisfaction and / or restrained or disturbed eating. However, relatively few studies have empirically tested the occurrence of proposed psychological processes in the development of body dissatisfaction, based on the inter-relationships between these factors. Recent research with adult women has emphasised the central role of internalisation of the thin ideal in the underlying mechanism. As a result of these studies, researchers have argued that the thin ideal is internalised at a young age, although no studies investigating this in children and adolescents have been conducted to date. A primary aim of the present study is to explore the hypothesised relationship between internalisation of the thin ideal and body dissatisfaction in 9-12 year old girls.

Internalisation of the thin ideal is dependent upon the individual having some awareness of the sociocultural standards of appearance. Thus, it is proposed that the thin ideal, as personal standard for appearance, may be accepted and subscribed to once it is recognised as a standard sanctioned by society. It is argued that media exposure and the weight / eating-related attitudes and behaviour of a girls mother and friends, identified in this chapter as related or determinant factors of body dissatisfaction, establish and heighten her awareness of the thin ideal.

Teasing has been found to directly influence body dissatisfaction, and thus it is hypothesised that girls who have experienced teasing may become dissatisfied with their bodies even if they have not internalised the thin ideal. However, it is further hypothesised that the indirect effect of teasing on body dissatisfaction operates by increasing the likelihood that the thin ideal will be internalised. It is also proposed in this study that girls with lower self-esteem are more likely to internalise the thin ideal once aware of its existence in society and that self-esteem further influences which girls subsequently develop body dissatisfaction. Finally, a relationship between body dissatisfaction and dieting is hypothesised in accordance with existing literature. The proposed psychological processes under investigation may be represented diagrammatically.

Figure 1: Psychological processes under investigation



Specifically, the present study aims to test the following hypotheses:

1. Internalisation of the thin ideal will mediate the relationship between awareness of the sociocultural standard of appearance and body dissatisfaction.
2. Body dissatisfaction will mediate the relationship between internalisation of the thin ideal and current dieting behaviour.
3. Exposure to popular teenage magazines will be associated with awareness of the sociocultural standard of appearance.
4. Maternal weight / eating-related attitudes and behaviour will be associated with awareness of the sociocultural standard of appearance.

5. Peer weight / eating-related attitudes and behaviour will be associated with awareness of the sociocultural standard of appearance.
6. The experience of being teased will be associated with body dissatisfaction.
7. Body dissatisfaction will mediate the relationship between the experience of being teased and current dieting behaviour.
8. The experience of being teased will moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal.
9. Self-esteem will moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal.
10. Self-esteem will moderate the relationship between internalisation of the thin ideal and body dissatisfaction.

2 METHOD

2.1 DESIGN

This questionnaire study was a cross sectional, correlational design conducted within schools.

2.2 RECRUITMENT

An initial letter providing a brief explanation of the purpose of the study and an outline of the procedure was sent to the Head Teachers of ten independent girls' schools in the North Thames Region. Only schools with both junior and senior departments were contacted in this way to ensure that the participant population comprised girls aged 9-12 years, as this age range spans primary and secondary education.

In response to this letter, six Head Teachers declined the suggestion to meet to discuss the study further. One Head Teacher explained that she did not want to direct pupils' attention to issues of body shape and attractiveness, as anorexia nervosa was an ongoing problem within the school. She stated that her concerns were specific to the particular student population and that she would not have had similar objections working in other establishments. Written feedback from another Head Teacher described the recent publicity her school has received regarding the prevalence of anorexia nervosa among pupils. She further explained that the school strives to address personal, social and health education but that she did not want to

heighten pupils' awareness of eating disorders, as they were high-achieving girls for whom this issue was very pertinent. A third Head Teacher conveyed her particular reservations about weighing and measuring the pupils and, following a meeting, the Head Teacher of another school felt unable to proceed with the study, as parents had in the past complained about routine practice of weight and height checks. Three schools gave consent for their pupils to participate in the research study following meetings between the investigator, Head Teacher and / or junior and senior school departmental head teachers.

In light of the literature reviewed in the penultimate section of the introductory chapter, it is interesting that 70% of the Head Teachers contacted felt they did not want their school to participate in this study. Indeed, the limited volume of research that has been conducted to evaluate primary prevention programmes has largely employed inadequate follow-up procedures and produced inconsistent findings. It is not necessarily the case, however, that educational professionals do not recognise value in research, which may improve our understanding of the development of body dissatisfaction and diet motivation and contribute to innovative preventative intervention strategies. Rather, there appears to be an assumption that any activity, which focuses attention on issues related to appearance and body image, will increase the risk of eating disorders. It seems that this is a particular concern for girls in middle class, high-achieving and competitive environments. Considering the recent publicity reported by one Head Teacher, it is possible that she did not want to raise the profile of eating disorders in the school among parents.

In contrast, teachers who did agree to participate felt that problems of childhood body dissatisfaction, dieting and eating disorders will not be resolved but instead will be concealed and remain undetected if not openly addressed and they felt that research of this nature is required to develop effective prevention strategies. Furthermore, they were enthusiastic that the research procedure itself could be incorporated into their own programme of personal, social and health education.

2.3 PARTICIPANTS

Participants were 356 pupils aged 9-12 years inclusive from two independent, girls' schools in the North Thames Region. This participant population was selected, as the literature reviewed in the previous chapter suggests intensified sociocultural pressures towards thinness and increased weight / eating-related concerns and behaviour in independent, high-achieving schools attended predominantly by girls from middle and upper socio-economic groups. The third consenting school did not ultimately participate due to procedural considerations. Only pupils who provided written, active consent from both themselves and a parent were eligible to participate in the study.

2.4 ETHICAL CONSIDERATIONS

Ethical approval for this study was obtained from the Joint UCL / UCLH Committees on the Ethics of Human Research (Appendix 1). A variety of procedures developed from ethical considerations were integrated into the research process. Firstly, a contact telephone number was provided on all correspondence and

information sheets so that teachers, parents and pupils could easily contact the investigator with any questions or comments. The participants were informed at each stage of the procedure that they could withdraw from the study at any time and were assured that their responses would remain both anonymous and confidential.

A member of the teaching staff was present throughout the administration of the questionnaire to assist the investigator in monitoring the reactions of the girls. Those girls for whom written consent was not obtained were not present. Following completion of the questionnaire, the investigator led a debriefing session, at which the teacher was also present. The participants were invited to describe any items they found difficult or distressing to answer and a discussion about any impressions gathered after completing the questionnaire was held. The reasons for this discussion were to ensure that participants had not developed incorrect ideas about the purpose of the study, or the misconception that the research was promoting thinness, and to assess whether the process had upset any of the girls. All participants were advised that they could contact the investigator or a staff member to discuss any issues arising from the study. Information leaflets containing useful contact numbers for counselling services and agencies for eating disorders and other relevant adolescent issues were given to Head Teachers in the event they were approached by any vulnerable individual following the study.

All consenting participants were weighed and measured individually with the school nurse present and were informed in advance that they would not be told their weight or height. This was to ensure that the girls could not enter comparative or competitive discussions with each other.

2.5 MEASURES

The Piers-Harris Children's Self-Concept Scale. The Piers-Harris Children's Self-Concept Scale is an 80-item self-report measure for global self-esteem consisting of descriptive statements requiring a yes-no response, scored in the direction of high self-esteem (Piers & Harris, 1969). The scale was developed and tested with 8, 11 and 15 year old children. Cronbach's alpha for internal consistency and the test-retest reliability coefficient are reported as .90 and .77 respectively. In the present study, a shortened version was administered comprising items from five sub-scales: 1) behaviour, 2) intellectual and school status, 3) anxiety, 4) popularity, and 5) happiness and satisfaction. Items from a sixth sub-scale assessing self-perception related to physical appearance were not included to prevent repetition of items with other measures.

Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ). The SATAQ is a 14-item self-report measure comprising two sub-scales: 1) awareness-acknowledgement of a societal emphasis on appearance, and 2) internalisation-acceptance of these standards (Heinberg et al., 1995). Responses are made on a 5-point Likert scale ranging from 1 (*completely disagree*) to 5 (*completely agree*). Cronbach's alpha values for the awareness and internalisation sub-scales are .71 and .88 respectively and the scale shows good convergence with other measures of body image and eating disturbance. Test-retest reliability is not reported. The scale was tested on American, female undergraduate students aged 17-35 years. For use in the present study, some of the items were re-phrased for ease of understanding by this British, school-aged population. The item *'It's important for people to work hard on*

their figures / physiques if they want to succeed in today's culture' was removed, as it was felt to be inappropriate for this age group.

Body Esteem Scale. The Body Esteem Scale is a widely used self-report measure assessing children's affective evaluation of their bodies (Mendelson & White, 1982). It consists of 24 descriptive statements requiring a yes-no response, scored in the direction of high body esteem. The split-half reliability is .83 and the test-retest reliability is not reported. The questionnaire is regarded as suitable and reliable for children as young as 7 years of age. The item '*It's pretty tough to look like me*' was removed for the present study, as it was considered ambiguous for a British sample population.

Perception of Teasing Scale (POTS). The POTS is an 11-item self-report scale assessing a history of being teased about physical appearance. It comprises two sub-scales: 1) weight-related teasing, and 2) teasing about abilities / competencies, and both frequency and effect are measured for each item (Thompson et al., 1995a). Responses are made on a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Very Often*) for responses relating to frequency and from 1 (*Not Upset*) to 5 (*Very Upset*) for responses relating to effect. Cronbach's alpha values for the weight-related teasing and competency teasing sub-scales are reported as .88 and .75- .84 respectively. Test-retest reliability coefficients are reported as follows: weight-related teasing, frequency (.90); weight-related teasing, effect (.85); competency teasing, frequency (.82); competency teasing, effect (.66). A shortened version of the scale was used in the present study and items were duplicated to assess teasing by people at school and by family members. Although the scale was originally tested on

students aged 17-42 years old, it was felt to be appropriate for use with the present population sample. However, the tense of the items was altered to allow for the possibility that participants may have been experiencing teasing at that time.

Body Shape Perceptions and Preferences. Body shape perceptions and preferences were assessed on a pictorial scale consisting of seven female figures increasing in size from thin to obese (Collins, 1991). Participants are required to indicate their 'current' and 'ideal' figures on the corresponding analogue scale. The discrepancy between these ratings is an index of body dissatisfaction. This version of the scale was developed for pre-adolescent and early adolescent children.

Maternal and Peer Weight / Eating-Related Concerns and Behaviour. This 12-item measure was devised specifically for the purpose of the present study. It consisted of descriptive statements requiring a yes-no response, scored in the direction of positive weight / eating-related concerns or behaviour. Items were duplicated to assess the concerns and behaviour of each participant's mother and best girl-friend.

Awareness of Body-Build Stereotypes. This 6-item scale was devised specifically for use in the present study to assess participant's awareness or acknowledgement of social stereotypes associated with body size / shape. The measure was presented in forced choice format and participants were required to indicate to which figure drawing most people would think the characteristic stated best applied. Four figure drawings ranging from thin to obese taken from the Body Shape Perceptions and Preferences scale (Collins, 1991) were provided. The

characteristics represented a range of traits or descriptions stereotypically associated with the thin body build (Brylinsky & Moore, 1994; Stager & Burke, 1982).

Media Exposure. Participants were asked to name the magazines they read, as one possible form of media influence.

Dieting. Participants indicated on a yes-no response scale whether they were currently dieting and whether they had dieted in the past.

Perception of Weight. Participants selected a single statement from five that best described their body size. The statements were, '*I think I am much too fat*'; '*I think I am too fat*'; '*I think I am just about right*'; '*I think I am too thin*'; '*I think I am much too thin.*'

2.6 PROCEDURE

A letter providing a brief explanation of the purpose of the study and an outline of the procedure was sent to Head Teachers (Appendix 2) and was followed up two weeks later with a telephone call. Meetings were held with representatives of interested schools to discuss theoretical and procedural issues, information sheets were provided (Appendix 3) and consent forms were completed by teachers who agreed to their school participating in the research (Appendix 4).

A pilot study was conducted in one school prior to data collection. Separate information sheets and consent forms for pupils and parents, together with an

introductory letter from the head teacher of the junior school, were sent to a random selection of twelve pupils aged 9 years. To assess the suitability of the questionnaire for the whole sample population and their degree of understanding relating to issues of appearance, it was only considered necessary to include 9 year old girls in the pilot study. Eleven pupils who provided active consent from themselves and a parent completed the questionnaire led by the investigator and participated in a group debriefing session. Unclear or ambiguous items or instructions included on the questionnaire were modified in light of the pilot study.

Information sheets and consent forms were sent to all pupils aged 9-12 years and their parents (Appendices 5-8). Only those girls who provided written consent from both themselves and a parent were eligible to participate. Pupils who took part in the pilot study completed only those sections of the questionnaire designed specifically for this study (Maternal and Peer Weight / Eating-Related Concerns and Behaviour and Awareness of Body-Build Stereotypes) to allow the test-retest reliability to be calculated. Their responses were not included in the analyses for the main study.

The study was conducted in class groups with a member of the teaching staff present. The investigator introduced the research and emphasised issues of confidentiality, the freedom for all pupils to withdraw at any time and that the questionnaire was not a test of knowledge. Once all pupils' questions had been answered, the investigator read out each item on the questionnaire in turn, allowing sufficient time for a response to be made. Following the completion of each section, the investigator asked the group if they had any questions or comments. Finally, the

debriefing discussion was held, as described previously. The entire administration procedure lasted approximately 40 minutes. The questionnaire is provided as Appendix 9.

Each participant was weighed and measured individually, with the school nurse present in the room. The weighing scales and ruler were concealed from the girls' view and they were not given feedback about their weight or height. This was conducted immediately following administration of the questionnaire or during convenient breaks in the day to cause minimal disruption to the daily timetable. It was again emphasised to the participants that confidentiality would be enforced, as the code numbers that appeared on their questionnaire would enter the height / weight record sheet, and that they did not have to participate in this part of the study if they so wished.

3 RESULTS

3.1 OVERVIEW

The results in this chapter are reported in five sections. The sample population is described in the first section. The second section describes the preliminary analyses carried out to assess the reliability of the scales devised specifically for the purpose of this study and to evaluate the validity of all the measures for this participant population. Results from test-retest reliability and factor analysis studies are reported. The inter-relationships between all measures of body dissatisfaction are also described. The third section presents descriptive data for each variable assessed on the questionnaire. Dieting behaviour and body dissatisfaction are explored in depth, with data presented for the whole sample and also in relation to age and Body Mass Index (BMI). In the fourth section, correlation matrices are presented for the inter-relationships between all variables, controlling for age and BMI. In the final section, results from regression analyses are reported for each experimental hypothesis in turn.

3.2 DESCRIPTION OF SAMPLE

The sample consisted of 356 pupils from two independent girls' schools. Information sheets and consent forms were distributed to 443 pupils inviting them to take part in the study. Three hundred and sixty two pupils provided consent forms from themselves and a parent, representing a response rate of 81.7%. Six eligible participants were absent from class at the time of administering the questionnaire due

to illness or extra curriculum music lessons. Thus, the final sample size of 356 represents a participant rate of 80.4%. Participants were aged 9 to 12 years inclusive and were from a predominantly White ethnic group. These characteristics are presented in Table 1.

Table 1: Age and ethnicity of the participant population

Characteristic		Participants
Age (N)	9 years	50
	10 years	79
	11 years	97
	12 years	130
Ethnicity (%)	White	81 %
	Black	17 %
	Asian / Oriental	1 %
	Other	1 %

Body Mass Index (BMI) was calculated for 321 participants by dividing their weight in kilograms by their squared height in metres. Thirty five girls, representing 9.83% of the sample population, chose not to be weighed and / or measured. The minimum, maximum, mean and standard deviation values of BMI for the sample population are presented in Table 2.

Table 2: Minimum, maximum, mean and standard deviation values of BMI for the sample and individual age groups

Participants	BMI				
	minimum	maximum	range	mean	standard deviation
9 years (N=46)	12.42	24.16	11.74	16.91	2.82
10 years (N=74)	12.44	26.48	14.04	17.68	2.84
11 years (N=89)	13.85	26.35	12.50	18.24	3.04
12 years (N=112)	13.63	30.29	16.66	19.73	2.97
Sample (N=321)	12.42	30.29	17.87	18.44	3.10

It can be seen from Table 2 that the mean BMI increases with age. The girl(s) with the lowest BMI was in the youngest age group and the girl(s) with the highest BMI was in the oldest age group. The greatest range of BMI's was present among the 12 year old girls, although the standard deviation values are similar for each age group.

Recently developed cut-off points for defining childhood overweight and obesity based on a large international sample may be utilised to assess the proportion of participants with BMI in these categories. The cut-off points are age and gender specific and at age 18 years pass through the BMI cut-off points of 25 and 30 kg / m² for adult overweight and obesity respectively (Cole et al., 2000). It is noteworthy that a cut-off point for underweight is not provided in this system. The proportions of participants from the current sample categorised as non-overweight, overweight or obese according to these BMI cut-off points are presented in Table 3.

Table 3: Percentage of participants classified as non-overweight, overweight and obese

Age	Classification				
	<u>non-overweight</u>	<u>overweight</u>		<u>obese</u>	
	%	BMI cut-off	%	BMI cut-off	%
9 years	82.6	19.07	13.1	22.81	4.3
10 years	78.4	19.86	20.2	24.11	1.4
11 years	77.5	20.74	20.3	25.42	2.2
12 years	79.5	21.68	17.8	26.67	2.7

Table 3 shows that between 13.1% and 20.3% of the sample with BMI data available may be classified as overweight and between 1.4% and 4.3% of the sample have a BMI equal or above the cut-of point for obesity.

3.3 PRELIMINARY ANALYSES

Test-Retest Reliability

The test-retest reliability of the two measures devised specifically for the purpose of this study was assessed. Correlation coefficients for the total scores obtained on the two separate testing occasions are presented in Table 4.

Table 4: Relationship between total scores obtained from two test administrations

Measure	R
Maternal weight / eating related concerns and behaviour	.919 **
Peer weight / eating related concerns and behaviour	.911 **
Awareness of body build stereotypes	.178

** $p < .01$

It can be seen from Table 4 that the scale developed to assess maternal and peer weight / eating-related concerns and behaviour has good test-retest reliability and is therefore suitable for inclusion in the main study analyses. However, there is a poor relationship between the scores obtained at the two time points on the Awareness of Body- Build Stereotypes scale. Closer examination of the item responses did not reveal any pattern to the difference between responses made on the two test administrations. This suggests that the scale may not have been assessing the same construct over time or that participants may have changed their responses on the second administration following discussion between testing sessions. The forced choice format of the scale may have further influenced its test-retest reliability, as participants may have felt that an adjective could be assigned to more than one body build, thus giving different answers on the two testing occasions. In light of these considerations, this measure was excluded from further analyses and awareness of the sociocultural standard of appearance was assessed solely by this sub-scale on the SATAQ.

Factor Analysis

The responses from the main study were subjected to factor analysis to examine whether the items on each separate scale were measuring the same construct

in this participant population. Items loading onto the factor(s) extracted for each scale with a correlation coefficient below .3 were eliminated from subsequent analyses.

Four items from the Piers-Harris Children's Self-Concept Scale were removed, as they did not correlate adequately with the construct of global self-esteem purportedly assessed by this measure.

'I am popular with boys'

'When I grow up, I will be an important person.'

'I am always dropping or breaking things'

'I cry easily'

It would seem that for this participant population these items do not necessarily assess self-esteem. For example, it was apparent during the administration of this measure that reflecting upon their popularity with boys embarrassed many participants. Indeed, many may not have contact with boys in virtue of attending a single-sex school, and hence this item may be assessing an aspect of maturity or interest in boys.

One item from sub-scales of the Maternal and Peer Weight / Eating-Related Attitudes and Behaviour measure was excluded from subsequent analyses.

'I think that my mother / best girl-friend believes women should be thin'

It is possible that this was a confusing concept for participants and that they responded according to their own beliefs rather than their perception of their mother's or friend's beliefs.

Following factor analysis, it was not necessary to exclude from further investigations any items from the Body Esteem Scale, Sociocultural Attitudes Towards Appearance Questionnaire or the Perception of Teasing Scale.

Body Dissatisfaction Measures

The responses given on the three measures of body dissatisfaction were initially explored.

Table 5: Discrepancy indices calculated from the Body Shape Perception and Preferences scale

Discrepancy Index (current self – ideal self)	%
4	.3
3	4.8
2	9.3
1	33.1
0	45.2
- 1	6.8
- 2	.6
- 3	0
- 4	0

Key

Positive value = preferred body shape is thinner than perceived current body shape

Negative value = preferred body shape is fatter than perceived current body shape

From Table 5, it can be seen that approximately half of the participants perceived their current body shape to be similar to their ideal body shape. Only 7.4%

of participants would prefer to have a larger body whereas 47.5% would prefer to be thinner.

Table 6: Percentage of respondents selecting each option on the Perception of Weight scale

Response	%
Much too fat	5.9
Too fat	22.0
Just about right	66.9
Too thin	5.1
Much too thin	0

Table 6 shows that 66.9% of the participants were satisfied with their current body weight. Only 5.1% felt that they are too thin whereas 27.9% felt that they are too fat.

The total scores on the Body Esteem Scale (mean = 14.84; sd = 6.67) ranged from one to 23, indicating that there were girls among this participant population with the extreme levels of body esteem, as measured by this scale. Indeed, the standard deviation value indicates a broad spread of total scores around the mean.

Following exploration of the responses on each measure of body dissatisfaction, the total scores were correlated with each other to establish the inter-relationships between the three measures.

Table 7: Correlations between scores on the three measures of body dissatisfaction

Variable	1	2	3
	DI	PW	BE
1. Discrepancy Index (DI)	-	-.744 **	-.662 **
2. Perception of Weight (PW)		-	.685 **
3. Body Esteem (BE)			-

** $p < .01$

It can be seen from Table 7 that there is a high level of agreement between the three measures of body dissatisfaction. The correlation coefficients are significant at the 1% level indicating that these general patterns of association may be expected to be found in another similar population. These results suggest that the measures may be assessing the same underlying construct. Thus, the scores on all three measures were added together to create a single index for body dissatisfaction.

3.4 EXPLORATORY ANALYSES

Variable Scores

The minimum and maximum scores obtained on each variable are presented in Table 8 together with the associated mean score and standard deviation.

Table 8: Minimum score, maximum score, mean score and standard deviation for each variable (N = 356)

Variable (range)	Minimum	Maximum	Mean	Standard Deviation
Body dissatisfaction (1-34)	2	31	13.06	7.32
Awareness (5-25)	5	25	13.99	4.32
Internalisation (8-40)	10	40	22.25	6.43
Self-esteem (1-15)	1	15	12.29	2.78
Maternal attitudes / behaviour (0-5)	0	5	2.72	1.69
Peer attitudes / behaviour (0-5)	0	5	1.47	1.67
Teasing frequency (12-60)	12	53	18.79	6.42
<i>School (6-30)</i>	6	28	10.25	4.21
<i>Family (6-30)</i>	6	27	8.50	3.12

From Table 8 it can be seen that the scores for body dissatisfaction span almost the full range, indicating that the participant population included girls with high body dissatisfaction and girls who were satisfied with their body shape and size and overall physical appearance. This range of scores is reflected in the large standard deviation value. Maximum levels of awareness of the sociocultural standard of appearance and internalisation of the thin ideal were recorded. The full ranges of scores were obtained for self-esteem, maternal and peer weight / eating-related attitudes and behaviour, with less variance in scores compared to the other variables. It is also apparent that the mean score for self-esteem tends towards the higher

extreme, indicating an overall trend for participants to have moderate to high levels of self-esteem.

The minimum and maximum scores obtained for teasing frequency indicate that some participants have not experienced teasing, while others have frequently been recipients of negative verbal commentary. However, the mean score tends towards the lower extreme, indicating an overall trend for participants to have been infrequently teased. There appears to be a trend for teasing to be more frequent in school than by family members, as indicated by a higher mean score. However, a higher standard deviation for school related teasing indicates a greater spread of scores around the mean.

Media exposure was assessed according to the nature of the magazines read by participants. The investigator recorded whether the named titles contained material, including advertisements, referring to teenage or women's issues, fashion, beauty or weight. 75.3% of participants reported reading magazines of this kind, compared to 24.7% who read non-relevant magazines or no magazines.

Body Dissatisfaction, Age and BMI

As a key research variable in this study, body dissatisfaction was further investigated in relation to the age and BMI of participants. The range of BMI's for each of the four age groups has been split into tertiles in the following analyses, such that the BMI's of approximately 33% of participants are included in each tertile. The BMI ranges for each tertile according to age are presented in Table 9.

Table 9: BMI tertiles for each age group

Age	BMI		
	1 st tertile	2 nd tertile	3 rd tertile
	a ≤ BMI ≤ b	a ≤ BMI ≤ b	a ≤ BMI ≤ b
9 years (n = 46)	12.4200 – 15.1500	15.1501 – 17.3500	17.3501 – 24.1600
10 years (n = 74)	12.4400 – 16.1700	16.1701 – 18.2400	18.2401 – 26.4800
11 years (n = 89)	13.8500 – 16.3400	16.3401 – 18.7500	18.7501 – 26.3500
12 years (n = 112)	13.6300 – 18.2301	18.2301 – 19.8700	19.8701 – 30.2900

To explore possible main effects of age and age-adjusted BMI tertiles on body dissatisfaction, and a possible interaction between these factors, a general factorial ANOVA was conducted. The results indicate that there is no main effect for the age factor on body dissatisfaction [$F(3, 305) = 1.93$; $p = .13$] but that there is a significant main effect for the age-adjusted BMI tertile factor [$F(2, 305) = 17.02$; $p < .001$]. Thus, body dissatisfaction does not differ between age groups after BMI is controlled for, although it does differ significantly according to BMI. The results further indicate that there is no interaction between the two factors [$F(6, 305) = 1.64$; $p = .14$], such that the effect of BMI on body dissatisfaction is similar across all four age groups. This is represented graphically in Figure 2.

Figure 2: Profile of age and age-adjusted BMI tertile on body dissatisfaction

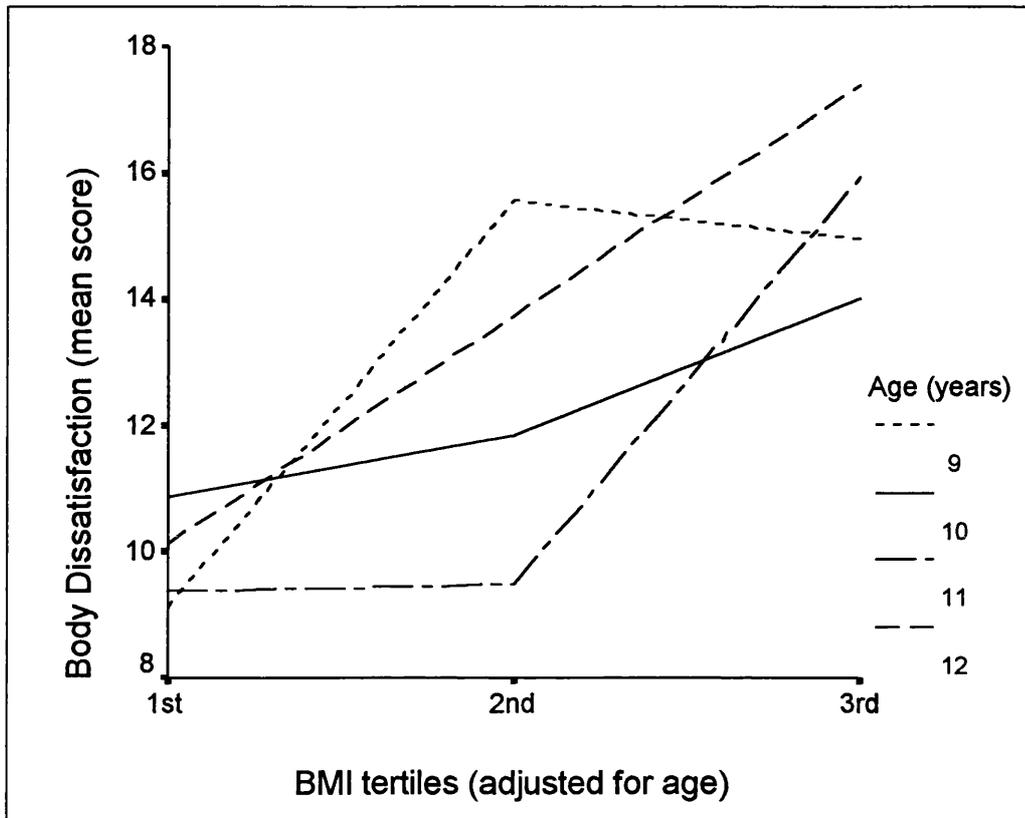
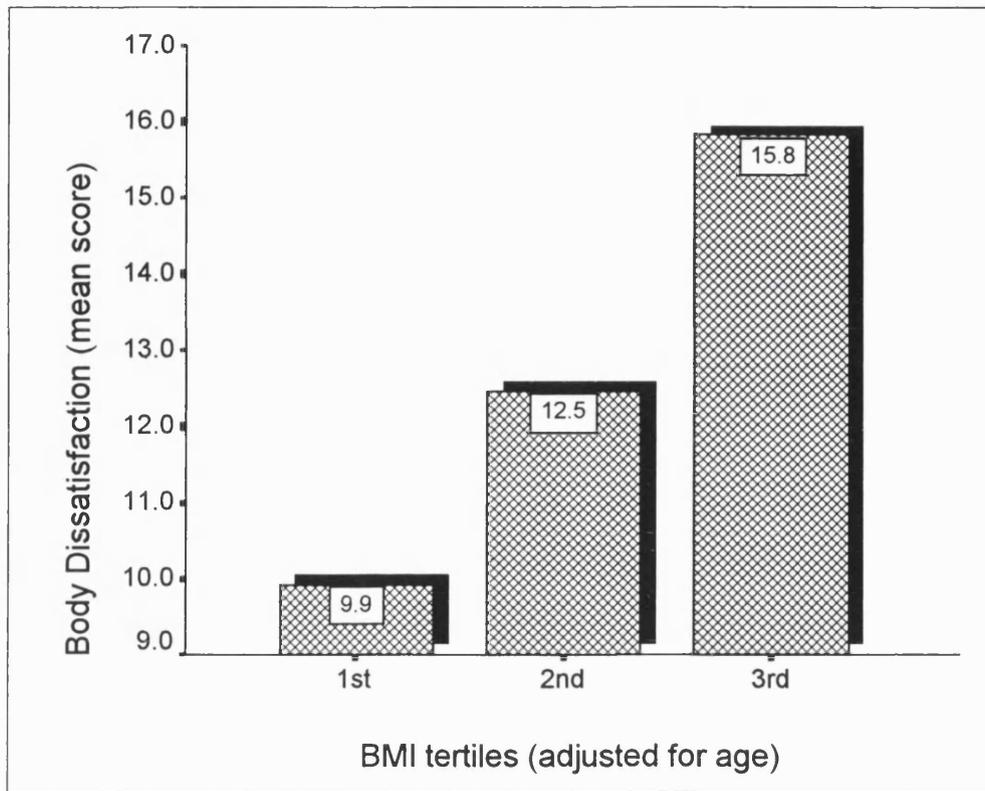


Figure 2 illustrates the absence of an interaction between age and age-adjusted BMI tertile on mean body dissatisfaction score, as there is approximate profile homogeneity between the four age groups. The main effect of age-adjusted BMI tertile on body dissatisfaction is further illustrated in Figure 3.

Figure 3: Mean body dissatisfaction scores for each age-adjusted BMI tertile



It can be seen from Figure 3 that body dissatisfaction increases with increasing BMI and analysis of variance calculation indicates a significant difference in mean body dissatisfaction scores between age-adjusted BMI tertile groups [$F(2, 314) = 20.55; p < .001$]. Tukey post-hoc analysis further indicates that all pairwise comparisons are significant, as shown in Table 10.

Table 10: Pair-wise comparisons in mean body dissatisfaction scores between age-adjusted BMI tertiles

Age-adjusted BMI tertile (a)	Age-adjusted BMI tertile (b)	Difference between means (b-a)	Standard Error	p
1	2	2.54	.94	.02
1	3	5.90	.92	.00
2	3	3.36	.93	.00

It can be seen from Table 10 that the mean body dissatisfaction score is significantly greater at the 1% level in the third age-adjusted tertile than both other tertiles. The mean score of participants in the second age-adjusted tertile is greater than that of the first tertile at the 5% level of significance.

Body dissatisfaction was also investigated according to the recent BMI cut-off points for overweight and obesity developed by Cole et al (2000). In Table 11, the mean body dissatisfaction scores and associated standard deviation values are presented for girls with BMI's in the non-overweight, overweight and obese categories.

Table 11: Mean and standard deviation values of body dissatisfaction for participants classified as non-overweight, overweight and obese

Age	N	Body Dissatisfaction					
		non-overweight		overweight		obese	
		(now)		(ow)		(ob)	
		mean	sd	mean	sd	mean	sd
9 years	(now) = 37 (ow) = 6 (ob) = 2	12.28	6.68	16.17	9.15	24.90	6.94
10 years	(now) = 56 (ow) = 15 (ob) = 1	11.64	6.87	14.78	7.75	14.00	-
11 years	(now) = 69 (ow) = 18 (ob) = 2	9.52	4.94	18.12	6.69	25.50	.71
12 years	(now) = 88 (ow) = 20 (ob) = 3	12.50	6.62	17.96	9.12	21.33	5.51

It can be seen from Table 11 that the body dissatisfaction scores of girls not classified as overweight or obese span a broad range, as indicated by the standard deviation values, and that the mean scores do not differ greatly from the mean score for the whole sample (13.06). It is also apparent that the mean score increases from the non-overweight to obese groups.

Dieting, Age and BMI

The prevalence of current and past dieting behaviour for the sample population and within each age group is presented in Table 12.

Table 12: Prevalence of current and past dieting behaviour

Participants	%	
	currently dieting	previously dieting
9 years	20.0	34.0
10 years	19.0	31.6
11 years	12.4	24.7
12 years	14.0	34.1
Sample	15.4	31.0

It can be seen from Table 12 that for each age group the proportion of participants who had dieted to lose weight in the past is greater than the proportion who were dieting at the time of the study. Current dieting will also be investigated in relation to BMI and age, as it is a behavioural outcome of the proposed theoretical pathway.

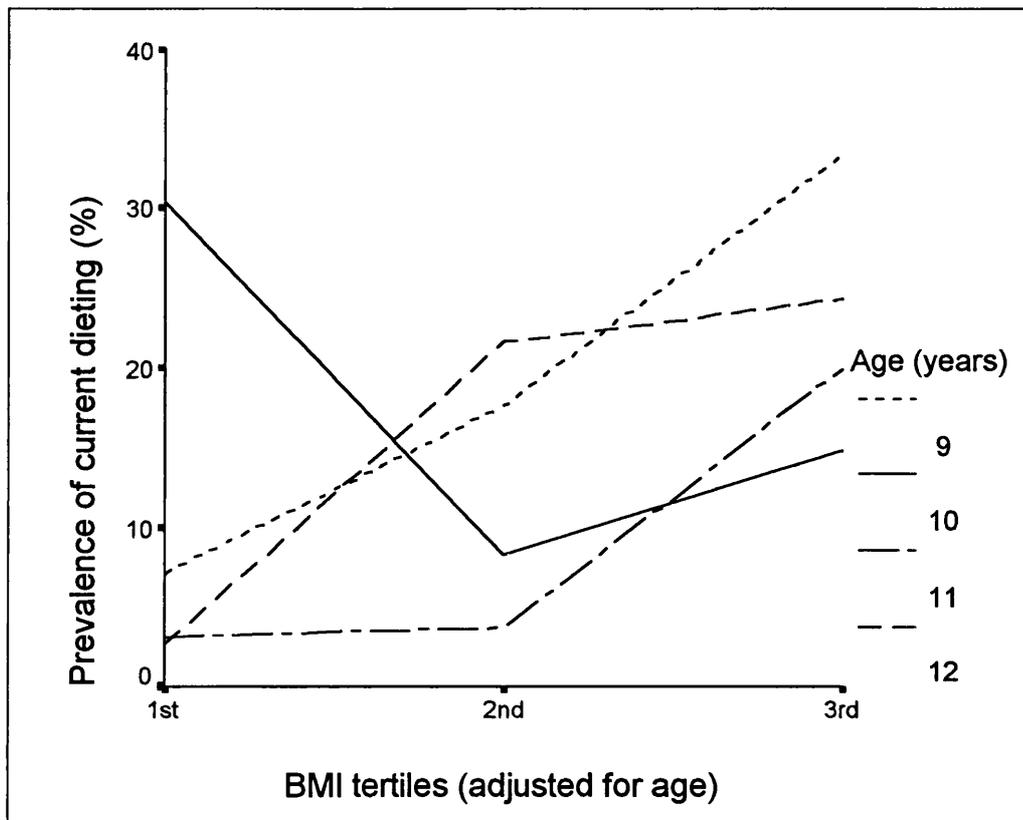
To explore possible main effects of age and age-adjusted BMI tertile on current dieting, and a possible interaction between these factors, a logistic regression analysis was conducted, as dieting is a categorical variable. The results are presented in Table 13.

Table 13: Relationship between age, age-adjusted BMI tertile and current dieting

	Step 1		Step 2
	age	BMI tertile	interaction (age x BMI tertile)
B	-.10	.51	.26
Wald	.46	6.55	1.88
p	.50	.01	.17

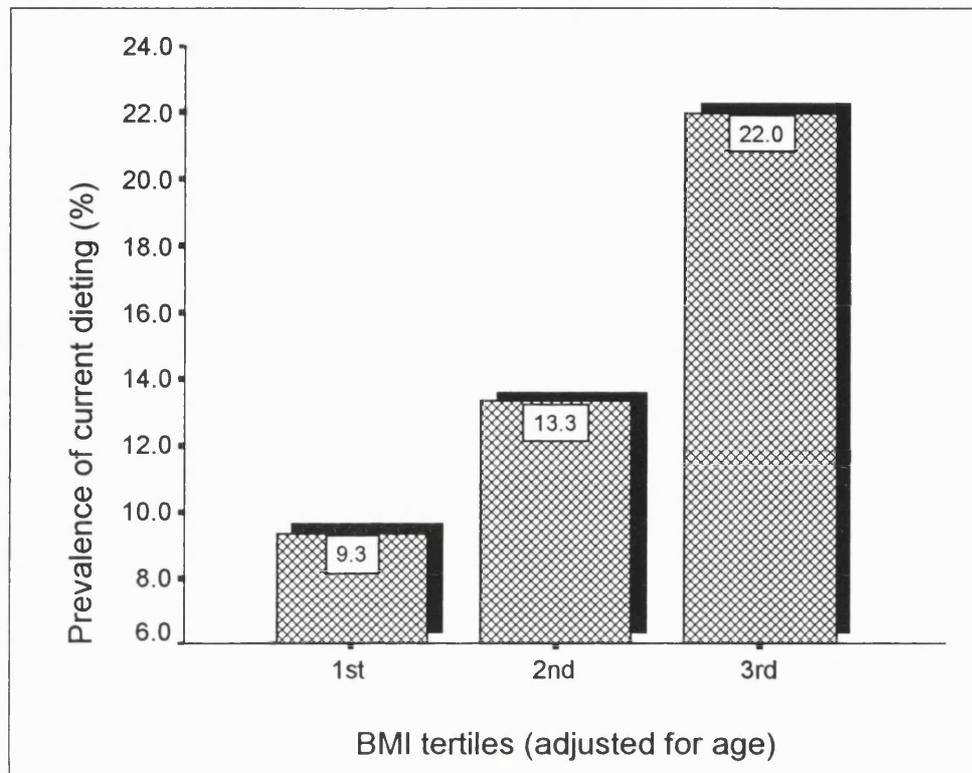
It can be seen from Table 13 that there is no main effect of age on dieting, but that there is a significant main effect of age-adjusted BMI tertile on dieting ($p = .01$). Thus, the prevalence of current dieting behaviour does not differ between the age groups after BMI is controlled for, although there is a significant difference in the prevalence of current dieting behaviour according to BMI tertile. It can also be seen that there is no interaction between the two factors, such that the main effect of BMI tertile is similar across all age groups. This is represented graphically in Figure 4.

Figure 4: Profile of age and age-adjusted BMI tertile on current dieting



Approximate profile homogeneity is apparent from Figure 4, illustrating the absence of an interaction effect between age and age-adjusted BMI tertiles on the prevalence of current dieting behaviour. Surprisingly, however, the 10 year old girls with BMI's in the first tertile show a high prevalence of current dieting behaviour relative to the other age groups at this BMI tertile. The main effect for age-adjusted BMI tertile is further illustrated in Figure 5.

Figure 5: Prevalence of current dieting behaviour for each age-adjusted BMI tertile



It can be seen from Figure 5 that the prevalence of current dieting behaviour within the sample population increases with increasing BMI [$\chi^2 = 7.14$; $df = 2$; $p = .03$; $\phi = .15$].

The prevalence of dieting behaviour was also investigated for girls with BMI's in the non-overweight, overweight and obese categories and the data are presented in Table 14.

Table 14: Prevalence of current dieting behaviour of participants classified as non-overweight, overweight and obese

Age	N	Prevalence of current dieting (%)		
		non-overweight (now)	overweight (ow)	obese (ob)
9 years	(now) = 38			
	(ow) = 6	13.2	66.7	0.0
	(ob) = 2			
10 years	(now) = 58			
	(ow) = 15	19.0	13.3	0.0
	(ob) = 1			
11 years	(now) = 69			
	(ow) = 18	2.9	33.3	0.0
	(ob) = 2			
12 years	(now) = 89			
	(ow) = 20	13.5	20.0	66.7
	(ob) = 3			

It can be seen from Table 14 that between 2.9% and 19.0% of participants not classified as overweight or obese reported that they were dieting to lose weight at the time of the study. The prevalence of dieting behaviour increases from the non-overweight to overweight group for the 9, 11 and 12 year old girls although a reduced prevalence rate is apparent for the 10 year old girls. None of the obese girls aged 9-11 years reported that they were currently dieting, although the low frequencies of girls with BMI's in the obese ranges is evident.

3.5 INTER-RELATIONSHIPS BETWEEN VARIABLES

In Table 15, the correlations between each research variable and BMI and age are presented.

Table 15: Correlations between research variables, BMI and age

Variable	BMI	Age
Awareness of sociocultural standard of appearance	.14 *	.13*
Internalisation of thin ideal	.19**	.05
Body dissatisfaction	.42**	.03
Media exposure	.12*	.22**
Dieting (current)	.20**	-.07
Self-esteem	-.07	.15**
Maternal attitudes and behaviour	.17**	.02
Peer attitudes and behaviour	.08	.10
Teasing frequency	.19**	-.15**

* $p < .05$ ** $p < .01$

It can be seen from Table 15 that all variables except for self-esteem and peer attitudes and behaviour are significantly correlated with BMI. However, only awareness, media exposure, self-esteem and teasing frequency are correlated with age.

Tables 16–19 show the correlations between all variables, facilitating comparison of the inter-relationships when controlling for age, BMI, or age and BMI together.

Table 16: Correlation matrix for all variables

Variable	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE	9 TSf
1. Awareness of sociocultural standard of appearance (A)	1.00	.54**	.40**	.26**	.14**	.23**	.11*	-.34**	.38**
2. Internalisation of thin ideal (I)	-	1.00	.62**	.38**	.23**	.30**	.27**	-.29**	.43**
3. Body dissatisfaction (BD)	-	-	1.00	.42**	.23**	.27**	.18**	-.54**	.56**
4. Dieting-current (D)	-	-	-	1.00	.22**	.21**	.10	-.22**	.40**
5. Maternal attitudes and behaviour (MAB)	-	-	-	-	1.00	.12*	.06	-.10	.10
6. Peer attitudes and behaviour (PAB)	-	-	-	-	-	1.00	.22**	-.14**	.21**
7. Media exposure (ME)	-	-	-	-	-	-	1.00	-.06	.14*
8. Self-esteem (SE)	-	-	-	-	-	-	-	1.00	-.55**
9. Teasing frequency-school & family (TSf)	-	-	-	-	-	-	-	-	1.00

** $p < .01$ * $p < .05$

Table 16, continued

	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE
Teasing frequency-school (TSfs)	.36**	.42**	.60**	.38**	.06	.19**	.17**	-.55**
Teasing frequency-family (TSff)	.30**	.33**	.42**	.31**	.13**	.16**	.06	-.38**

** $p < .01$ * $p < .05$

From Table 16, it can be seen that awareness of the sociocultural standard of appearance, internalisation of the thin ideal and body dissatisfaction are significantly related to all other variables. Thus, as the level on these dimensions increases within this population, the level on all other variables also increases, except for self-esteem, which decreases. The strongest relationship exists between internalisation of the thin

ideal and body dissatisfaction ($r = .62$). Maternal and peer attitudes and behaviour are significantly related with many other variables but not strongly. Interestingly, media exposure, self-esteem and teasing frequency are significantly related to peer attitudes and behaviour but not to maternal attitudes and behaviour. There is a moderately strong and positive correlation between teasing frequency (school and family based together) with body dissatisfaction and a moderately strong negative correlation with self-esteem. School based teasing frequency is significantly correlated with all variables except for maternal attitudes and behaviour and family based teasing frequency is significantly correlated with all variables except for media exposure.

Table 17: Correlation matrix for all variables controlling for age

Variable	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE	9 TSf
1. Awareness of sociocultural standard of appearance (A)	1.00	.54**	.40**	.27**	.12**	.23**	.08	-.37**	.40**
2. Internalisation of thin ideal (I)	-	1.00	.61**	.39**	.21**	.31**	.25**	-.30**	.44**
3. Body dissatisfaction (BD)	-	-	1.00	.43**	.21**	.28**	.18**	-.53**	.58**
4. Dieting-current (D)	-	-	-	1.00	.21**	.21**	.11	-.24**	.39**
5. Maternal attitudes and behaviour (MAB)	-	-	-	-	1.00	.12*	.03	-.08	.08
6. Peer attitudes and behaviour (PAB)	-	-	-	-	-	1.00	.20**	-.19**	.22**
7. Media exposure (ME)	-	-	-	-	-	-	1.00	-.11*	.17**
8. Self-esteem (SE)	-	-	-	-	-	-	-	1.00	-.54**
9. Teasing frequency-school & family (TSf)	-	-	-	-	-	-	-	-	1.00

** $p < .01$ * $p < .05$

Table 17, continued

	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE
Teasing frequency- school (TSfs)	.38**	.43**	.55**	.37**	.05	.21**	.21**	-.54**
Teasing frequency- family (TSff)	.32**	.33**	.42**	.31**	.12*	.17**	.09	-.37**

** $p < .01$ * $p < .05$

Comparison of Tables 16 and 17 shows that the age of the individual has a negligible effect on the inter-relationships between variables. The only differences are that the relationship between awareness of the sociocultural standard of appearance and media exposure decreases slightly and becomes non-significant and the relationship between media exposure with self-esteem increases slightly and becomes significant at the 5% level ($r = -.11$). However, the changes in the correlation coefficients are small and these relationships remain weak.

Table 18: Correlation matrix for all variables controlling for BMI

Variable	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE	9 TSf
1. Awareness of sociocultural standard of appearance (A)	1.00	.54**	.40**	.25**	.12**	.23**	.08	-.34**	.37**
2. Internalisation of thin ideal (I)	-	1.00	.56**	.38*	.21**	.29**	.21**	-.28**	.40**
3. Body dissatisfaction (BD)	-	-	1.00	.41**	.17**	.26**	.11**	-.57**	.55**
4. Dieting-current (D)	-	-	-	1.00	.21**	.22**	.10	-.26**	.38**
5. Maternal attitudes and behaviour (MAB)	-	-	-	-	1.00	.09	.01	-.08	.06
6. Peer attitudes and behaviour (PAB)	-	-	-	-	-	1.00	.18**	-.16**	.21**
7. Media exposure (ME)	-	-	-	-	-	-	1.00	-.04	.12*
8. Self-esteem (SE)	-	-	-	-	-	-	-	1.00	-.57**
9. Teasing-frequency (TSf)	-	-	-	-	-	-	-	-	1.00

** $p < .01$ * $p < .05$

Table 18, continued

	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE
Teasing frequency-school (TSfs)	.34**	.39**	.53**	.36**	.04	.18**	.14*	-.58**
Teasing frequency-family (TSff)	.31**	.31**	.42**	.31**	.10	.18**	.07	-.41**

** $p < .01$ * $p < .05$

Comparison of Tables 16 and 18 shows that the BMI of the individual has a negligible effect on the inter-relationships between variables. The relationships between media exposure with awareness of the sociocultural standard of appearance, maternal attitudes and behaviour with peer attitudes and behaviour and family based teasing become non-significant when controlling for BMI. As with the effect of age,

however, the changes in the correlation values are small and the relationships remain weak.

Table 19: Correlation matrix for all variables controlling for age and BMI

Variable	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE	9 TSf
1. Awareness of sociocultural standard of appearance (A)	1.00	.55**	.42**	.26**	.13**	.24**	.07	-.37**	.40**
2. Internalisation of thin ideal (I)	-	1.00	.58**	.38**	.21**	.29**	.22**	-.29**	.41**
3. Body dissatisfaction (BD)	-	-	1.00	.40**	.18**	.27**	.14**	-.56**	.54**
4. Dieting-current (D)	-	-	-	1.00	.21**	.24**	.12*	-.24**	.36**
5. Maternal attitudes and behaviour (MAB)	-	-	-	-	1.00	.09	.03	-.07	.05
6. Peer attitudes and behaviour (PAB)	-	-	-	-	-	1.00	.16**	-.18**	.23**
7. Media exposure (ME)	-	-	-	-	-	-	1.00	-.08	.16**
8. Self-esteem (SE)	-	-	-	-	-	-	-	1.00	-.55**
9. Teasing-frequency (TSf)	-	-	-	-	-	-	-	-	1.00

** $p < .01$ * $p < .05$

Table 19, continued

	1 A	2 I	3 BD	4 D	5 MAB	6 PAB	7 ME	8 SE
Teasing frequency-school (TSfs)	.38**	.40**	.52**	.35**	.03	.21**	.19*	-.56**
Teasing frequency-family (TSff)	.32**	.31**	.41**	.30**	.09	.19**	.10	-.39**

** $p < .01$ * $p < .05$

Comparison of Tables 16 and 19 shows that there is a negligible effect on the inter-relationships between variables when controlling for both age and BMI.

Although the significance of the relationship between some variable pairs changes when accounting for age and BMI, the changes in the associated correlation values are small and the relationships remain weak. Thus, it may be concluded that the age and / or BMI of participants minimally affect the inter-relationships between variables.

3.6 TESTING THE HYPOTHESES: REGRESSION ANALYSES

Cook's distance was calculated for all regression equations to assess the influence of single observations (Cook & Weisberg, 1982). To test for the possible violation of the assumptions of normality, linearity and homogeneity of variance a plot of the standardised residuals against the standardised predicted values of the dependent variable was generated for each regression equation. A cumulative normal probability plot of residuals was also generated to provide a second test of normality. It can be seen from Tables 16 – 19 that age and / or BMI have a negligible effect on the inter-relationship between variables. However, regression analyses may be potentially confounded if both the dependent variable and independent variable are significantly correlated with age and / or BMI. When theoretically indicated, many of the following regression analyses have controlled for BMI, in accordance with the correlation values reported in Table 15. However, it was not necessary to include age as a control variable.

Hypothesis 1

'Internalisation of the thin ideal will mediate the relationship between awareness of the sociocultural standard of appearance and body dissatisfaction.'

Table 20: Predicting body dissatisfaction from awareness of the sociocultural standard of appearance and internalisation of the thin ideal

	<u>Model 1</u> IV = awareness DV = internalisation	<u>Model 2</u> IV = awareness DV = body dissatisfaction	<u>Model 3</u> IV's = awareness & internalisation DV = body dissatisfaction	
			awareness	internalisation
Beta	.54	.37	.11	.48
t	11.59	7.77	2.26	9.45
p	.00	.00	.03	.00
R	.57	.55		.68
Adjusted R ²	.32	.30		.46

To establish mediation, the following three conditions must be met (Baron & Kenny, 1986):

The independent variable must affect the mediator in Model 1.

The independent variable must be shown to affect the dependent variable in Model 2.

The mediator must affect the dependent variable in Model 3.

From Table 20, it can be seen that awareness significantly predicts approximately 32% of the variance in scores for internalisation in Model 1. The predictive effect of awareness on body dissatisfaction is also significant in Model 2, accounting for 30% of the variance in scores. Together, awareness and internalisation account for 46% of the variance in scores for body dissatisfaction and the predictive effect of internalisation is significant in Model 3 when awareness is controlled for. Thus, the three necessary conditions hold. Although significant at the 5% level, the predictive effect of awareness on body dissatisfaction is reduced in

Model 3 compared with Model 2, indicated by a lower beta value. This provides support for the hypothesis that internalisation of the thin ideal mediates the relationship between awareness of the sociocultural standard of appearance and body dissatisfaction.

Hypothesis 2

'Body dissatisfaction will mediate the relationship between internalisation of the thin ideal and current dieting behaviour.'

Table 21: Predicting current dieting behaviour from internalisation of the thin ideal and body dissatisfaction

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	
	IV = internalisation DV = body dissatisfaction	IV = internalisation DV = dieting (current)	IV's = internalisation & body dissatisfaction DV = dieting (current)	
			internalisation	body dissatisfaction
B	.60 (.54 ^a)	.17	.11	.10
t	12.62	-	-	-
Wald	-	34.42	9.45	10.01
p	.00	.00	.00	.00
R	.67	-	-	-
Adjusted R ²	.45	.27 ^b		.32 ^b

^a Beta, standardised regression coefficient

^b Nagelkerke R²

From Table 21 it can be seen that internalisation of the thin ideal significantly predicts 45% of the variance in body dissatisfaction scores in Model 1. Current dieting is a categorical variable and thus logistic regression techniques were

employed in Models 2 and 3. The predictive effect of internalisation on current dieting is significant, accounting for 27% of the variance in Model 2. Together, internalisation and body dissatisfaction account for 32% of the variance in current dieting and the predictive effect of body dissatisfaction is significant in Model 3 when internalisation is controlled for. Thus, the conditions necessary to establish mediation are met. When the effect of body dissatisfaction is accounted for, the predictive effect of internalisation is reduced in Model 3 compared with Model 2 indicated by a lower B value, although remaining significant at the 1% level. This indicates that there is some mediation of the relationship between internalisation of the thin ideal and current dieting by body dissatisfaction, thereby supporting the hypothesis.

Hypotheses 3 - 5

3. *'Exposure to popular teenage magazines will be associated with awareness of the sociocultural standard of appearance.'*

4. *'Maternal weight / eating related attitudes and behaviour will be associated with awareness of the sociocultural standard of appearance.'*

5. *'Peer weight / eating related attitudes and behaviour will be associated with awareness of the sociocultural standard of appearance.'*

Body Mass Index was not included as a control variable in the following analyses, as theoretically this is not expected to influence the proposed relationships but may instead minimise any existing effect.

Table 22: Predicting awareness of the sociocultural standard of appearance

	<u>Independent Variable (s)</u>					
	Independent predictors			Joint predictors		
	media exposure	maternal attitudes & behaviour	peer attitudes & behaviour	media exposure	maternal attitudes & behaviour	peer attitudes & behaviour
Beta	.11	.14	.23	.06	.11	.20
t	2.12	2.74	4.43	1.13	2.18	3.83
p	.03	.01	.00	.26	.03	.00
R	.11	.14	.23		.26	
Adjusted R ²	.01	.02	.05		.06	

From Table 22, it can be seen that media exposure and maternal and peer eating / weight-related attitudes and behaviour significantly predict awareness of the sociocultural standard of appearance independently of each other, accounting for between 1% and 5% of the variance in awareness scores respectively. Peer attitudes and behaviour predicts awareness at the 1% level of significance ($p < .001$) and media exposure ($p = .03$) and maternal attitudes and behaviour ($p = .01$) predict awareness at the 5% level of significance. However, the magnitude of the beta values indicates that the relationships between awareness and each of these independent variables are not strong. The combined predictive effect of these three independent variables on awareness is also presented and it can be seen that together they account for 6% of the variance in awareness scores. When the effect of the other independent variables is accounted for, the predictive effect of maternal attitudes remains significant at the 5% level ($p = .031$) and peer attitudes and behaviour remains a predictor of awareness significant at the 1% level ($p < .001$). However, media exposure does not predict awareness when the effect of maternal and peer eating / weight-related attitudes and behaviour are accounted for.

Hypothesis 6

'The experience of being teased will be associated with body dissatisfaction.'

To test the research hypotheses relating to teasing, only teasing frequency will be investigated. The Perception of Teasing Scale administered in the study also included items assessing teasing effect. However, only participants indicating a teasing history on the frequency items responded to the items relating to effect, thereby creating a smaller sample size on this variable. Furthermore, items on the teasing effect sub-scale may overlap with self-esteem or body esteem, which were assessed by other measures. Thus, teasing frequency may provide a more objective indication of teasing history. It was therefore decided that teasing frequency would alone be used to assess the role of teasing in the proposed psychological processes, as data from all participants could be analysed, including those girls who have not experienced teasing.

The questionnaire administered in the study assessed competency and weight related teasing, within the family and at school. There is a significant correlation between the frequency of school based teasing and the frequency of family based teasing ($r = .52$; $p < .001$) and there is a significant correlation between competency and weight related teasing ($r = .46$; $p < .001$). Cronbach's alpha coefficient is .85, indicating high internal consistency of this scale within this participant population. Thus, the role of overall teasing frequency relating to weight and competency, occurring within the family and at school, will be investigated in the following analyses.

Table 23: Predicting body dissatisfaction from teasing frequency

	IV = teasing frequency	IV's = teasing frequency, awareness & internalisation		
	DV = body dissatisfaction	DV = body dissatisfaction		
		teasing	awareness	internalisation
Beta	.56	.36	.03	.45
t	12.68	8.22	.59	9.40
p	.00	.00	.56	.00
R	.56		.70	
Adjusted R ²	.31		.48	

Table 23 shows that teasing frequency significantly predicts body dissatisfaction accounting for 31% of the variance in body dissatisfaction scores. Awareness of the sociocultural standard of appearance, internalisation of the thin ideal and teasing frequency together account for 48% of the variance in score. Indeed, when awareness and internalisation are controlled for, teasing frequency remains a significant predictor of body dissatisfaction. This suggests that teasing operates as a separate influence on body dissatisfaction from the previously established pathway, which includes internalisation of the thin ideal as the mediating variable between awareness of the sociocultural standard of appearance and body dissatisfaction.

Hypothesis 7

'Body dissatisfaction will mediate the relationship between the experience of being teased and current dieting behaviour.'

Table 24: Predicting current dieting behaviour from body dissatisfaction and the experience of being teased

	<u>Model 1</u>	<u>Model 2</u>	<u>Model 3</u>	
	IV = teasing DV = body dissatisfaction	IV = teasing DV = dieting (current)	IV's = teasing & body dissatisfaction DV = dieting (current)	
			teasing	body dissatisfaction
B	.98 (.56 ^a)	.14	.07	.12
t	12.68	-	-	-
Wald	-	38.08	7.77	22.16
p	.00	.00	.01	.00
R	.56	-	-	-
Adjusted R ²	.31	.21 ^b		.31 ^b

^a Beta, standardised regression coefficient

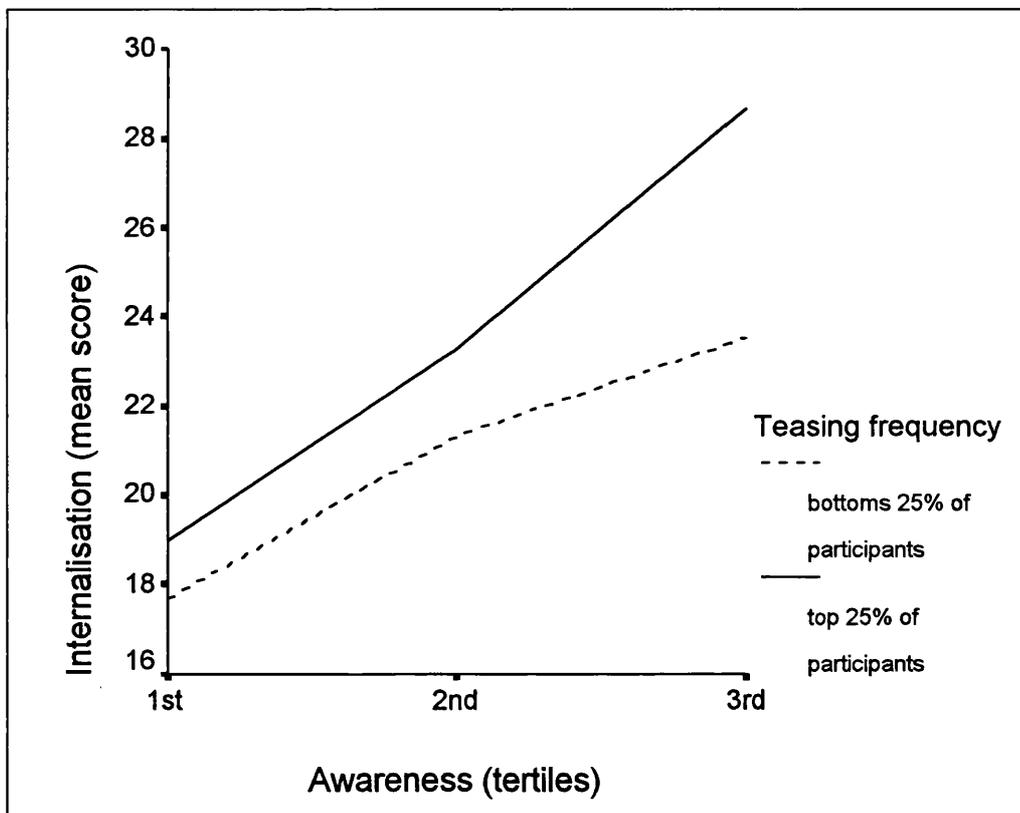
^b Nagelkerke R²

From Table 24, it can be seen that the experience of being teased significantly predicts 31% of the variance in body dissatisfaction scores. Current dieting is a categorical variable and thus logistic regression techniques were employed in Models 2 and 3. The predictive effect of teasing on current dieting is significant, accounting for 21% of the variance Model 2. Together, teasing and body dissatisfaction account for 31% of the variance in scores on current dieting and the predictive effect of body dissatisfaction is significant in Model 3 when teasing is controlled for. Thus, the necessary conditions for mediation hold. When the effect of body dissatisfaction is accounted for the predictive effect of teasing is reduced in Model 3 compared with Model 2, indicated by a lower B value, although remaining significant at the 1% level. Thus, body dissatisfaction partially mediates the relationship between teasing experience and current dieting, supporting the research hypothesis.

Hypothesis 8

'The experience of being teased will moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal.'

Figure 6: Interaction effect of teasing frequency and awareness of the sociocultural standard of appearance on internalisation of the thin ideal



The change in internalisation mean score between the tertile groups for awareness follows a similar pattern for participants in the high and low teased groups, illustrated by profile homogeneity in Figure 6. This suggests that teasing does not moderate the relationship between awareness of the sociocultural standard

of appearance and internalisation of the thin ideal. However, this hypothesis will be further subjected to regression analysis.

Table 25: Influence of teasing on the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal

	<u>Step 1</u>	<u>Step 2</u>		<u>Step 3</u>		
	DV = internalisation IV = awareness	DV = internalisation IV's = awareness & teasing		DV = internalisation IV's = awareness, teasing & interaction		
		awareness	teasing	awareness	teasing	interaction
Beta	.54	.44	.27	.27	.03	.35
t	12.20	9.64	5.77	2.33	.23	1.69
p	.00	.00	.00	.02	.81	.09
R	.54	.60		.60		
Adjusted R ²	.29	.35		.36		
R ² change ^a	.30	.06		.01		

^a calculated against R²

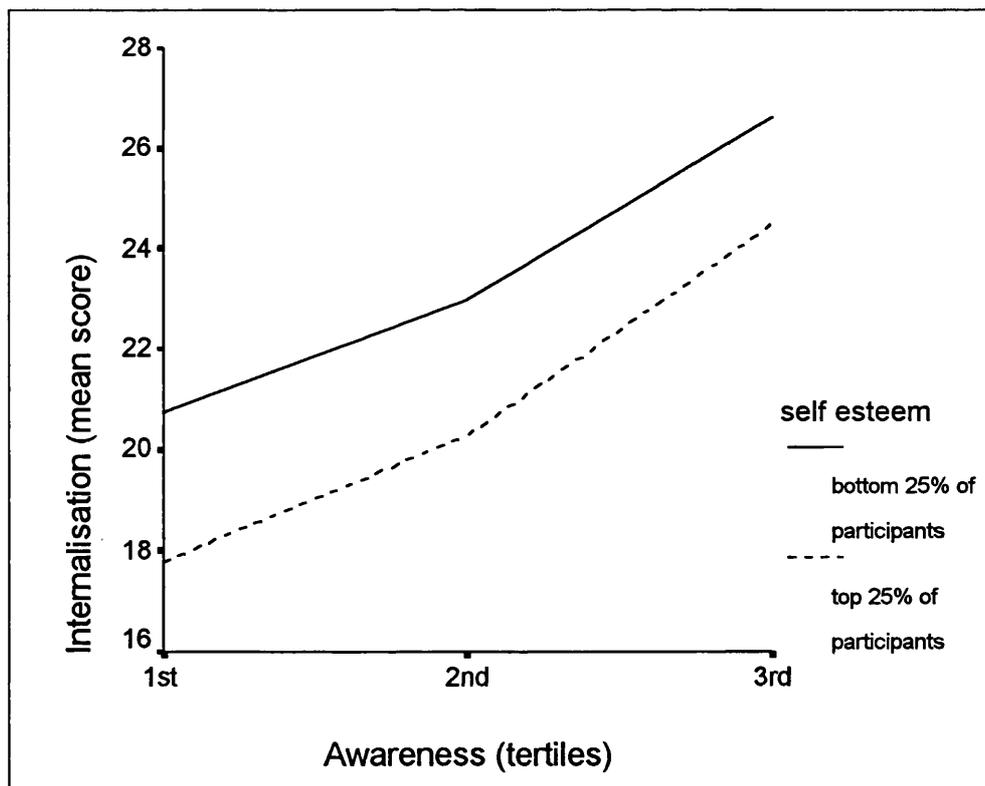
Table 25 shows that awareness significantly predicts internalisation, accounting for 30% of the variance in scores in Step 1. In Step 2, awareness and teasing both significantly predict internalisation and together they account for 35% of the variance in scores for internalisation. This represents a significant increase in the amount of variance, which may be explained by awareness and teasing than by teasing alone [$F(1, 353) = 33.31; p < .001$]. When the interaction between awareness and teasing is considered in Step 3 it can be seen that there is little increase in the amount of variance that may be explained [$F(1, 352) = 2.884; p = .090$]. Awareness remains a significant predictor but teasing and the interaction term do not significantly predict internalisation when the effect of the other independent

variables is accounted for. Thus, the experience of being teased does not moderate the relationship between awareness and internalisation in this sample population, thereby refuting the research hypothesis.

Hypothesis 9

'Self-esteem will moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal.'

Figure 7: Interaction effect of self-esteem and awareness of the sociocultural standard of appearance on internalisation of the thin ideal



The changes in internalisation mean scores between the tertile groups for awareness follow a similar pattern for participants in the high and low self-esteem groups illustrated by profile homogeneity in Figure 7. This suggests that self-esteem does not moderate the relationship between awareness of the sociocultural standard

of appearance and internalisation of the thin ideal. However, this hypothesis will be further subjected to regression analysis.

Table 26: Influence of self-esteem on the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal

	<u>Step 1</u>	<u>Step 2</u>		<u>Step 3</u>		
	DV = internalisation IV = awareness	DV = internalisation IV's = awareness & self-esteem		DV = internalisation IV's = awareness, self-esteem & interaction		
		awareness	self-esteem	awareness	self-esteem	interaction
Beta	.54	.51	-.10	.61	-.01	-.12
t	11.59	10.25	-2.06	3.26	-.05	-.59
p	.00	.00	.04	.00	.96	.56
R	.59	.58		.58		
Adjusted R ²	.31	.33		.32		
R ² change ^a	.32	.01		.00		

^a calculated against R²

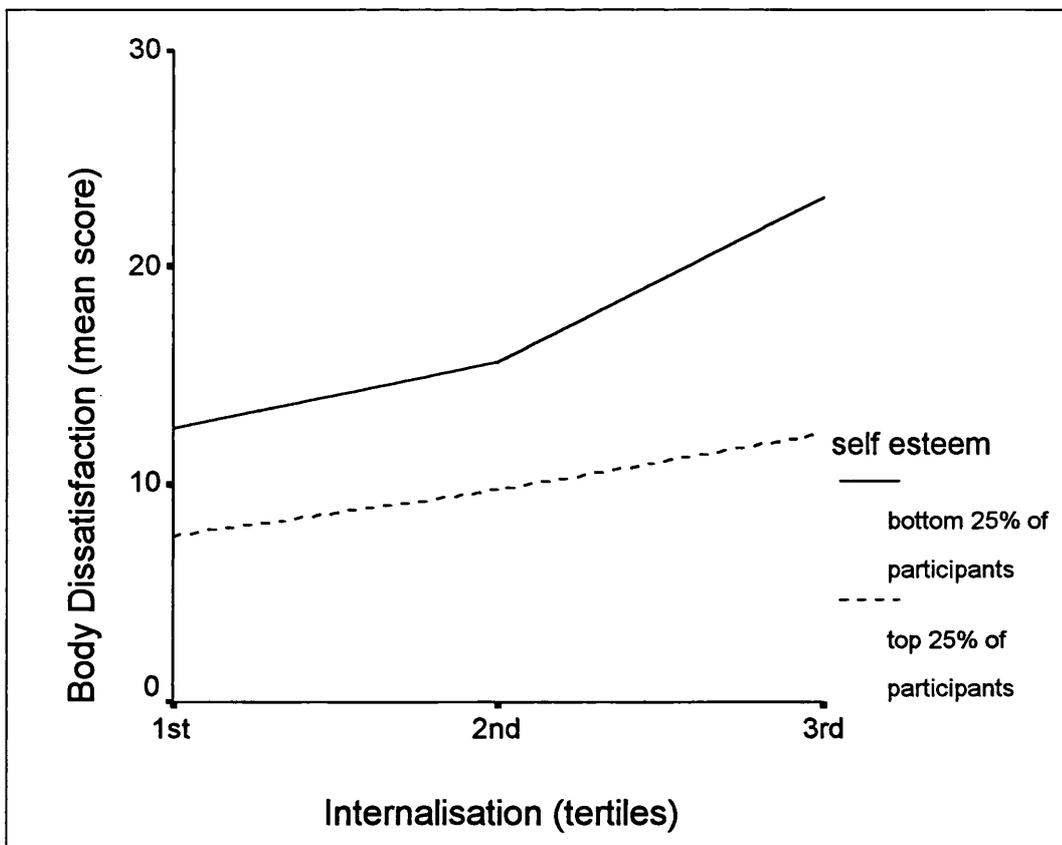
Table 26 shows that awareness of the sociocultural standard of appearance and self-esteem together account for 33% of the variance in scores for internalisation in Step 2. The 1% increase in variance explained by both of these independent variables compared to awareness alone is significant at the 5% level [$F(1, 353) = 6.46; p = .01$]. Awareness remains a significant predictor of internalisation and self-esteem has a significant predictive effect at the 5% level. When the interaction between awareness and self-esteem is considered in Step 3 there is a negligible increase in the variance in body dissatisfaction scores that may be explained by these variables [$F(1, 352) = .57; p = .45$]. Awareness remains a

significant predictor but self-esteem and the interaction term do not predict internalisation when the effect of all the independent variables is accounted for. Thus, self-esteem does not moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal, thereby refuting the research hypothesis.

Hypothesis 10

'Self-esteem will moderate the relationship between internalisation of the thin ideal and body dissatisfaction.'

Figure 8: Interaction effect of self-esteem and internalisation of the thin ideal on body dissatisfaction



The change in body dissatisfaction mean score between the tertile groups for internalisation follows a similar pattern for participants in the high and low self-esteem groups illustrated by profile homogeneity in Figure 8. This suggests that self-esteem does not moderate the relationship between internalisation of the thin ideal and body dissatisfaction. However, this hypothesis will be further subjected to regression analysis.

Table 27: Influence of self-esteem on the relationship between internalisation of the thin ideal and body dissatisfaction

	<u>Step 1</u>	<u>Step 2</u>		<u>Step 3</u>		
	DV = body dissatisfaction IV = internalisation	DV = body dissatisfaction IV's = internalisation & self-esteem		DV = body dissatisfaction IV's = internalisation, self-esteem & interaction		
		internalisation	self-esteem	internalisation	self-esteem	interaction
Beta	.62	.50	-.39	.52	-.37	-.02
t	14.71	12.95	-9.90	3.67	-2.86	-.13
p	.00	.00	.00	.00	.00	.90
R	.62	.72		.72		
Adjusted R ²	.38	.52		.51		
R ² change ^a	.38	.14		.00		

^a calculated against R²

Table 27 shows that internalisation of the thin ideal significantly predicts body dissatisfaction in Step 1, accounting for 38% of the variance in scores. Internalisation and self-esteem significantly predict body dissatisfaction, together accounting for 52% of the variance in Step 2. This represents a significant increase of 13.5% in variance explained by both of these independent variables compared to internalisation alone [$F(1, 349) = 98.03; p < .001$]. When the interaction between

internalisation and self-esteem is considered in Step 3 there no change in the variance in body dissatisfaction scores that may be explained by these variables [$F(1, 348) = .017; p = .895$]. Internalisation and self-esteem remain significant predictors but the interaction term does not predict body dissatisfaction when the effect of all the independent variables is accounted for. Thus, self-esteem does not moderate the relationship between internalisation of the thin ideal and body dissatisfaction, thereby refuting the hypothesis.

4 DISCUSSION

4.1 OVERVIEW

The present study investigated the development of body dissatisfaction, considered the normative experience of many females in Western culture. Many theories highlight body dissatisfaction as a key motivational factor of dieting, and DSM-IV emphasises the overvaluation of shape and weight as a fundamental characteristic of clinical eating disorders. Occurrences of dieting and pathological eating have been reported in 11 year old girls, suggesting that for some girls body dissatisfaction may be established by early adolescence. To further our understanding of the development of this phenomenon, this research was conducted with girls in their pre-adolescent and early adolescent years.

The theoretical model proposed a role for internalisation of the thin ideal and hypothesised that the thin body shape is internalised at a young age, once this is recognised as the societal standard for appearance. Teasing, self-esteem, media exposure and maternal / peer weight-related attitudes and behaviour were also hypothesised to operate specifically in the psychological processes under investigation.

The research hypotheses were tested in a cross sectional questionnaire study conducted in schools with 9-12 year old girls. Participants were weighed and measured to assess the influence of BMI on the inter-relationships between variables.

As this research was conducted with children, many younger than secondary school age, it was important that the concepts addressed could be understood. Items had to be unambiguous and worded appropriately for this age group. This imposed constraints on the measures suitable for inclusion, as the development of child oriented questionnaires in this field remains in infancy. Thus, adult measures were adapted or new scales devised, as required.

This chapter will initially outline the main findings from this research. The characteristics of the sample will be described, focusing predominantly on body dissatisfaction and dieting in this group and the evidence to support or refute the research hypotheses will then be outlined. In the following section, the findings will be interpreted in light of the existing literature and the contribution of this research towards enhancing our understanding of the development of body dissatisfaction will be discussed. A critique of this study will be provided and methodological improvements suggested. The implications of the findings will be considered and ideas for future research in this field highlighted. Concluding remarks will be presented to end.

4.2 MAIN FINDINGS

Sample Characteristics

Body dissatisfaction was assessed using three self-report measures and the inter-relationships between the total scores obtained suggested that they were tapping into the same underlying construct. Descriptive analyses conducted on the composite variable indicated that body dissatisfaction was present among the

participant population and discontent with body shape / weight and overall physical appearance is experienced by some girls to a high level. Indeed, individual analysis of the Body Shape Perceptions and Preferences Scale revealed that only 45% of the sample were satisfied with their current body shape / size and a similar proportion expressed a preference to be thinner. Responses on this measure and the Perception of Weight Scale, consisting of simple statements about weight satisfaction, showed that only 7% and 5% of the sample respectively felt that they were too thin and would prefer to be fatter. Thus, although many girls in this population feel comfortable with their weight and shape there is also a substantial proportion who do not, and this is predominantly characterised by a desire to be thinner.

Body Mass Index increased with age in this sample, as would be expected with maturation. A general factorial ANOVA showed that body dissatisfaction increased significantly with increasing BMI although it was not found to differ significantly between age groups. The absence of an interaction effect indicates a similar pattern of increasing body dissatisfaction with greater BMI across all age groups. Thus, the degree of body dissatisfaction experienced does not change from 9 years to 12 years in this population although it is related to the BMI of the individual, such that heavier girls are likely to experience greater body dissatisfaction. However, moderate to high levels of body dissatisfaction was further demonstrated in some girls not classified as overweight or obese.

Dieting, identified in the literature as a behavioural manifestation of body dissatisfaction, yielded two categorical variables in this study for current and past dieting behaviour assessed according to a simple 'yes / no' response scale. Fifteen

percent of the participant population reported that they were currently dieting to lose weight and 31% reported that they had dieted in the past. Logistic regression analysis indicated that the prevalence of current dieting behaviour did not differ significantly between age groups. However, BMI did significantly predict current dieting, such that engaging in dieting behaviour to lose weight was associated with greater BMI. The absence of an interaction effect indicated that the increasing prevalence of dieting behaviour with increasing BMI followed a similar pattern for each age group. Thus, 9-12 year old girls in this population are equally likely to diet to lose weight but those girls with greater BMI are more likely to engage in this behaviour than less heavy girls. However, some girls not classified as overweight or obese reported that they were currently dieting.

Development of Body Dissatisfaction

Regression analyses were employed to test the research hypotheses relating to the proposed psychological processes involved in the development of body dissatisfaction. The effect of BMI was controlled for in many analyses, except when this was not theoretically indicated. Awareness of the sociocultural standard of appearance predicted both internalisation of the thin ideal and body dissatisfaction. The predictive effect of awareness on body dissatisfaction decreased when accounting for internalisation of the thin ideal, indicating that internalisation partially mediates the relationship between these variables. Thus, girls who have an awareness of the sociocultural standard of appearance may develop body dissatisfaction only if they have internalised the thin ideal and accepted this as a valued, personal goal. Media exposure and the weight-related attitudes and behaviour of the girls' mother and close friend independently predicted awareness.

Maternal and peer attitudes and behaviour also have a significant predictive effect when controlling for the other variables, although the predictive effect of media exposure is removed when accounting for maternal and peer attitudes and behaviour.

It was hypothesised that teasing and self-esteem would moderate the relationship between awareness of the sociocultural standard of appearance and internalisation of the thin ideal, and that self-esteem would further moderate the relationship between internalisation and body dissatisfaction. However, evidence was not found to support these hypotheses. Thus, girls who have low self-esteem and who have been teased are no more likely to internalise the thin ideal once they have developed some awareness of the sociocultural standard of appearance. In addition, self-esteem does not influence the development of body dissatisfaction in girls who have internalised the thin ideal.

Teasing frequency was found to significantly predict body dissatisfaction when awareness and internalisation were controlled for, suggesting that these operate as independent processes involved in the development of body dissatisfaction. Body dissatisfaction was found to operate as a mediator for the relationships between internalisation and dieting, and teasing and dieting. Thus, girls who have internalised the thin ideal or have experienced teasing may only engage in dieting behaviour if they experience body dissatisfaction.

4.3 INTERPRETATION

Body Dissatisfaction in Girls

The experience of body dissatisfaction among girls aged 9-12 years, specifically a preference for a thinner body shape and size, has been demonstrated in this research. This supports findings from other questionnaire studies reporting that from 9 years old girls experience body dissatisfaction if they perceive that their body shape and size does not match their preferred thinner figure (Hill et al., 1992; Tiggemann & Pennington, 1990). Thus, some girls in their pre-adolescent and early adolescent years share the concerns of adult women about weight and shape. However, body dissatisfaction is not the experience of all girls in their pre-adolescent and early adolescent years, as low scores on this variable were also recorded and 45% of the sample indicated on the Body Shape Perception and Preferences Scale that their current and ideal sizes were similar.

In the present study, body dissatisfaction was not significantly associated with age, indicating a similar experience of girls from 9 to 12 years of age. However, Gardner et al (1997) found that body dissatisfaction increased from 9 to 12 years. This study assessed body dissatisfaction using adjustable life-size video images and therefore the results may not be comparable with the present study due to the different techniques employed. Flanneryschroeder (1996) administered the Body Esteem Scale and found a significant increase in body dissatisfaction from 6-7 year olds to 10-11 year olds. Interpreting the present findings in view of Flanneryschroeder's research is also compromised, as this study included male participants and separate analyses for girls are not provided. The difference in

developmental stage between the youngest and oldest age groups may further explain the discrepant findings between these studies. The non-significant effect of age on body dissatisfaction in the present study suggests that by the age of 9 years the psychological processes operating towards the development of body dissatisfaction may be established. Once this has taken place the level of dissatisfaction experienced does not change significantly up to 12 years of age. It is possible that once established in pre and early adolescence, body dissatisfaction only increases in response to pubertal development and the onset of menarche. Although the literature in this field is equivocal, there is some evidence for a relationship between pubertal status and body dissatisfaction (Attie & Brooks-Gunn, 1989). Further research is therefore needed to investigate the influence of puberty on the course of body dissatisfaction once it has developed. It may also be the case that some girls younger than 9 years of age are unhappy with their bodies. The need for research with even younger children is therefore indicated to discover whether the degree of body dissatisfaction experienced is influenced by age from middle childhood onwards or whether it remains at a similar level once established into early adolescence.

The increase in body dissatisfaction with increasing BMI supports previous research (Cullari et al., 1998; Gardner et al., 1997). Girls with a larger body size perceive a greater discrepancy between their perceived body size and how they would ideally prefer to look, resulting in increased body dissatisfaction. This relationship exists for all age groups in the 9-12 year age range. Interestingly, some girls not classed as overweight or obese also experience quite high body dissatisfaction, in the direction of thinness. It is therefore not a phenomenon associated exclusively with objectively overweight girls but rather some girls with

BMI's in the normal, and possibly underweight bands, perceive that they fail to meet the standard of the thin ideal and experience discontent. Thus, although objective weight influences the degree of body dissatisfaction experienced, perception of weight is also important in determining its development.

Role of Awareness of the Sociocultural Standard of Appearance and Internalisation of the Thin Ideal

The scores obtained on the sub-scales of the SATAQ indicate that the girls in this population have different levels of knowledge concerning the existence of a thin standard for appearance that is highly valued by society and that carries various social implications, thereby supporting previous research that has identified the awareness of body-build stereotypes by children (Stager & Burke, 1982). It is also apparent that the participants have internalised this ideal body size to differing degrees, with some subscribing to it strongly, as an important personal goal. In his research investigating the role of thin ideal internalisation in adult and adolescent women, Stice found that exposure to images of thin models had an inconsistent effect on internalisation and that internalisation did not influence their pattern of dieting (Stice et al., 1998b; Stice et al., 1994; Stice & Shaw, 1994). To explain these findings he suggested that the thin ideal is internalised earlier than late adolescence. Some evidence to support this proposition is therefore provided by the present study, as internalisation of the thin ideal was identified in girls aged 9-12 years.

The degree to which girls feel they must individually conform to the sociocultural pressures for thinness was predicted by their level of awareness of these pressures, indicating that girls with a greater awareness of the sociocultural standard

for appearance are more likely to internalise this. The present study has further shown that awareness predicts body dissatisfaction and that some girls who have an awareness of the thin ideal experience body dissatisfaction once they have internalised this standard. Thus, the central role of internalisation in understanding body dissatisfaction is emphasised, supporting Stice's research with older participants. The mediating effect of internalisation further suggests that this has a crucial role in the mechanism underlying the development of body dissatisfaction, operating in some girls in their pre-adolescent and early adolescent years.

This study has highlighted the importance of awareness and internalisation of the thin ideal in the development of body dissatisfaction, which may be considered equivalent to the socially represented ideal body and internalised ideal body identified in the Self-Schema Theory as reference points used by an individual to construct their body image (Markus, 1977; Myers & Biocca, 1992). The socially represented ideal body is not a static information source, but rather the degree of an individual child's awareness about its presence and implications in this society influences the extent of her internalisation of this standard. This study has further shown that these reference points may be causally linked, such that some girls tend to experience body dissatisfaction only after they have internalised the thin ideal, and that this is dependent of them having an awareness of the sociocultural standard for appearance. This study therefore suggests that the reference points of the Self-Schema Theory do not operate purely as independent information sources but that they form part of the wider, psychological process of body dissatisfaction development in some girls. The third reference point included in the Self-Schema Theory is objective body size. The finding that greater BMI was associated with a

higher level of body dissatisfaction suggests that objective size does indeed contribute to the development of this phenomenon. The presence of body dissatisfaction in some girls not considered overweight suggests that perception of size is also an important source of information. Objective size, however, does not seem to influence the relationship between awareness and internalisation, as BMI had a negligible effect on the correlation between these variables and the mediational effect was present when BMI was controlled for.

Developing an Awareness of the Sociocultural Standard of Appearance

Three of the research hypotheses were concerned with identifying factors that are associated with awareness of the sociocultural standard of appearance. The weight / eating-related attitudes and behaviour of the girls' mother and best girl friend were both found to significantly predict awareness, independently and when accounting for the other and for media exposure. Interpersonal factors therefore play some part in providing girls with information about the existence of a thin ideal and the extent of the mothers' / friends' attitudinal and behavioural conformity with this standard influences the level of the girls' awareness.

Research outlined in the literature review has found a relationship between the body dissatisfaction of girls and their mothers (Evans & le Grange, 1995; Rieves & Cash, 1996). This study has suggested that maternal attitudes and behaviour influence the development of girls' knowledge about the thin ideal, thereby operating at the initial stage of a process of body dissatisfaction development that has been identified in this study. Hence the attitudes and behaviour of mothers, possible indicators of their body dissatisfaction as measured in other studies, are a risk factor

for the development of daughters' body dissatisfaction that operate early on in this process.

The present study has further indicated that the weight-related attitudes and behaviour of peers is more strongly associated with awareness than maternal attitudes and behaviour. Thus, friends are an important source of information about acceptable appearance in this society. Indeed, this finding is supported by previous research showing that 41.5% of middle school-age girls discuss weight, shape and dieting with their friends (Levine et al., 1994b).

These findings do not explain the specific mechanism by which mothers and friends transmit information about societal norms for appearance. This may occur through observational learning, identified in Social Learning Theory, such that girls develop an idea that society values thin women from their mothers' and friends' weight / appearance-related behaviour, interactions with others and responses to their own behaviour, often transmitted in subtle ways. For example, girls may observe their mother congratulating other women on successful weight loss attempts and commenting favourably on their thinner size. Mothers may also influence their daughter's awareness of the existence of a thin ideal by direct communication of their own attitudes possibly by encouraging them to diet or change their appearance, as has been suggested in previous research (Striegel-Moore & Kearney-Cooke, 1994).

Media exposure was also associated with awareness of the sociocultural standard of appearance in this study. Although research investigating the direct

effect of exposure to images of the thin ideal on body dissatisfaction is inconsistent (Grogan et al., 1996; Stice & Shaw, 1994), it is widely assumed that the media is responsible for the unrealistic standards for appearance introduced to children. Indeed, previous studies have shown that fashion / teenage magazines are an important source of information about appearance and the frequency of reading this material predicted investment in thinness and weight reduction behaviour (Field et al., 1999; Levine et al., 1994a). Furthermore, the Self-Schema Theory states that the thin, socially represented ideal body is a standard largely created by the media. This study has yielded further confirmatory evidence that the media is involved in transmitting information concerning this societal standard to children. However, the predictive effect of reading teenage / fashion magazines is dependent upon the weight-related attitudes and behaviour of the girls' mother and best friend, as media exposure was not associated with awareness of the sociocultural standard of appearance when these factors were accounted for. A possible explanation for this finding is that maternal and peer eating / weight-related attitudes and behaviour influence the availability and accessibility of relevant reading material for girls.

Methodological techniques may further explain the non-predictive effect of media exposure when accounting for maternal and peer attitudes and behaviour, and the low proportion of the variance in awareness scores that can be independently explained by this variable. In this study, data about whether or not the participants read magazines containing fashion / appearance-related material was recorded. However, there are many potential sources of media influence including television, radio, advertisements and newspaper articles, all of which may communicate information about body shape and size via fashion / appearance advice, images of

models and popular female icons, exercise regimes and diet products. Indeed, information from various sources may have a cumulative influence on an individual's awareness of the sociocultural standard of appearance. The frequency of engaging with different media sources may therefore have provided a more precise assessment of the influence of media exposure on awareness. It is also apparent that maternal and peer weight-related attitudes and behaviour did not predict a large proportion of the variance in scores for awareness, although these relationships were found to be statistically significant. This suggests that other factors not investigated in this study are also associated with awareness, and may therefore operate as risk factors for the subsequent development of body dissatisfaction.

Role of Self-Esteem

Although research has shown that low self-esteem is a significant predictor of body dissatisfaction (Tiggemann, 1992) and that body dissatisfaction may impact on self-esteem in some girls (Fabian & Thompson, 1989; Silberstein et al., 1988), this study investigated the specific psychological processes by which self-esteem influences the development of body dissatisfaction. It was hypothesised that self-esteem would operate as a moderating factor, influencing which girls would be more likely to move to the next stage in the proposed developmental pathway towards body dissatisfaction. In the first part of the process, low self-esteem was associated with a higher level of internalisation of the thin ideal, when level of awareness of the sociocultural standard for appearance was controlled for. Indeed, self-esteem and awareness explained significantly more of the variance in internalisation scores than awareness alone. However, the lack of evidence that self-esteem moderates the relationship between these variables indicates that girls with low self-esteem are no

more likely to internalise the thin ideal once they have an awareness of its existence in society than girls with higher self-esteem. The findings suggest that low self-esteem may be a risk factor for internalisation that operates independently from the relationship between awareness and internalisation.

This study has also shown that self-esteem significantly predicts body dissatisfaction when accounting for internalisation and that internalisation and self-esteem than may explain a greater proportion of the variance in body dissatisfaction scores than internalisation alone. However, girls with low self-esteem are no more likely to experience body dissatisfaction once they have internalised the thin ideal than girls with higher self-esteem. Together these findings support research that has identified self-esteem as a significant predictor of body dissatisfaction (Tiggemann, 1992). Thus, girls' experience of their somatic self is influenced by their self-esteem, as physical appearance is a fundamental part of global self-concept. However, the results further suggest that self-esteem may be a risk factor for body dissatisfaction that operates independently from the relationship between internalisation and body dissatisfaction and / or that low self-esteem may be a consequence of body dissatisfaction.

It is apparent from the analysis of scores obtained on each variable that this participant population had moderate to high levels of self-esteem, as indicated by the high mean score and associated low standard deviation value. It is possible that there was insufficient diversity of self-esteem within this population to detect a moderation effect. A broader distribution of scores may have been obtained in a population including participants from various geographical regions, different social classes and

familial backgrounds, thereby facilitating analysis of the influence of high and low levels of self-esteem on the relationships between awareness and internalisation, and internalisation and body dissatisfaction.

The specificity of the participant population is one possible explanation for the non-significant findings relating to the hypothesised moderating effect of self-esteem. It has also been suggested that self-esteem does have a role in the psychological processes involved in body dissatisfaction development but that these processes operate independently from the pathway that has identified internalisation as a mediating variable between awareness and body dissatisfaction. Thus, further research is required to identify factors that do influence which girls will internalise the thin ideal once they have an awareness of it and which girls will, in turn, experience body dissatisfaction. Girls who are aware of the unrealistic nature of the sociocultural standard for appearance may reject this message and hence this style of cognitive processing may make it less likely that they will subscribe to the thin ideal as a personal goal. Gender role endorsement (Stice et al., 1994) and specifically the importance of appearance to the female gender role (Timko et al., 1987) have been shown in previous research to be associated with internalisation and body dissatisfaction. These factors may be potential moderators of the relationship between awareness and internalisation of the thin ideal. Other potential moderators of the relationship between internalisation and body dissatisfaction include personality traits such as perfectionism.

Role of Teasing

There was no evidence to support the hypothesis that teasing frequency moderates the relationship between awareness and internalisation of the thin ideal. Interestingly, the mean score obtained for teasing frequency suggests that the girls in this participant population are infrequently teased. As with self-esteem, it is possible that a moderation effect was not found due to the presence of few girls who had experienced high levels of teasing. However, the frequency of receiving negative verbal commentary relating to appearance and general competency was found to significantly predict internalisation of the thin ideal when awareness and BMI were controlled for. Furthermore, the amount of variance in internalisation scores that could be explained by awareness and teasing frequency was significantly greater than could be explained by awareness alone. Thus, negative interpersonal experiences in the form of teasing is a risk factor for regarding the thin ideal as a valued, personal standard for appearance and as such may represent an important etiological factor in a developmental model of body dissatisfaction. It is noteworthy that teasing frequency is not a risk factor for internalisation only because teased girls tended to be heavier, as these significant effects were found when controlling for BMI.

Teasing was found to significantly predict body dissatisfaction when BMI was controlled for, supporting existing research (Fabian & Thompson, 1989; Gardner et al., 1997; Rieves & Cash, 1996; Thompson & Heinberg, 1993). Thus, girls who have experienced teasing, regardless of their body size, are at increased risk of developing body dissatisfaction. The results further showed that teasing frequency remained a significant predictor of body dissatisfaction when controlling for awareness and internalisation of the thin ideal. The present study has therefore

identified two processes involved in the development of body dissatisfaction. One process states that some girls who have an awareness of the sociocultural standard of appearance, internalise the thin ideal and then develop body dissatisfaction. The other process states that girls may develop body dissatisfaction if they have experienced teasing, regardless of their level of awareness of the thin ideal or whether they have internalised this. This process highlights the powerful impact of negative verbal commentary, as it may be sufficient in some girls to cause them to be unhappy with their appearance and feel that they would prefer to be thinner.

Body Dissatisfaction and Dieting

Existing literature has consistently reported an association between body dissatisfaction and dieting (Hill et al., 1992). However, this study has enhanced our understanding of this relationship, as it has demonstrated a mediational effect of body dissatisfaction on the relationship between internalisation and dieting. Thus, some girls who have internalised the thin ideal will engage in dieting behaviour to lose weight, but only if they feel dissatisfied with their body shape and size. This suggests that internalisation is a risk factor for dieting and that those who have subscribed to the thin ideal as a personal goal may understand that dieting is a means of reducing the discrepancy between their perceived current and internalised body size. This process occurs regardless of actual body size, as the effect was found when controlling for BMI. Previous longitudinal research has found a correlation between internalisation and dieting behaviour in adolescents (Stice et al., 1998b) and this study has highlighted that internalisation is involved in the development of diet motivation and dieting behaviour. There is evidence to suggest, however, that

internalisation does not influence the pattern of dieting behaviour once established (Stice et al., 1998b).

In the present study, participants were asked to indicate whether they were currently dieting to lose weight. Although research indicates that from 8 years of age girls are knowledgeable about the behavioural changes that may result in weight loss (Grogan & Wainwright, 1996; Schur et al., 2000), the girls in this study may be engaging in a variety of dieting techniques to differing degrees. Thus, it may only be concluded from the present results that body dissatisfaction mediates the relationship between internalisation of the thin ideal and any behaviour that the individual engages in as a means to lose weight. While the exact nature and extent of participants' dieting behaviour was not investigated and therefore the precise relationship with internalisation and body dissatisfaction cannot be established, the results clearly highlight that girls are aware that weight reduction is possible and employ strategies to achieve their internalised body size and reduce their experience of body dissatisfaction.

This study has shown that the frequency of being teased may lead to body dissatisfaction in some girls, which may in turn result in dieting behaviour. Thompson et al (1999) found a similar mediational effect of body dissatisfaction on the relationship between teasing history and eating disturbance in young adults. Thus, in the present study body dissatisfaction has been shown to control the impact of teasing on dieting behaviour in the normative range, occurring in girls in their pre-adolescent and early adolescent years. Some caution is warranted, however, as the exact nature of the dieting behaviour was not assessed and it is possible that

individual participants may exhibit more problematic eating patterns, which was recorded as dieting behaviour.

4.4 LIMITATIONS

Sample

The sample was selected, as there is some evidence that girls from higher social class backgrounds (Wardle & Marsland, 1990), and particularly those attending high-achieving independent schools that create a stressful and competitive environment, are more concerned with weight and dieting (Striegel-Moore et al., 1986). In light of these findings, it was anticipated that a proportion of girls from this population would be likely to experience body dissatisfaction, the key variable under investigation in the present study. Indeed, body dissatisfaction and dieting behaviour were found to be salient issues for a substantial minority of participants. However, the specificity of this sample may have restricted the possible variance on other variables. The results have indicated a generally high level of self-esteem among the participants and an overall teasing experience of low frequency, which may thus represent sample characteristics possibly contributing to limited variance on these variables. Indeed, this has been suggested as one explanation for the non-significant findings related to the proposed moderator effects of self-esteem and teasing. A sample of girls representing different geographical areas, socio-economic groups and schools (e.g. state-funded, non-selective or co-educational) may have yielded increased variation on some indices. However, a larger sample size may then be required to ensure sufficient variance on body dissatisfaction.

A sample bias may also have been operating with further implications for the results. Active consent was required by each girl and a parent to participate in the study. It is possible that the girls who did not take part were those for whom body dissatisfaction, weight and / or eating were sensitive issues. Indeed, the teachers indicated on number of occasions that some of the girls not participating were fatter than many of their peers and / or were concerned about physical appearance and eating. It is also possible that some parents with personal issues related to weight and / or eating did not give consent for their daughter to participate. Thus, the participant population may have been biased towards lower weight girls, girls without strong attitudes related to body shape / size or girls of parents without strong attitudes related to body shape / size. The implication of this bias would be to minimise the effect of the findings.

Generalisability

The external validity of this research is weak due to the specificity of the sample under investigation. As discussed above, possible sampling bias implies that the results have limited generalisability to the wider target population of girls aged 9-12 years attending single sex, independent schools. Furthermore, the results cannot be generalised to lower socio-economic groups, as the study was only conducted in fee-paying schools where the pupils are selected according to academic ability. It also cannot be assumed that the results apply to boys, or to girls from all ethnic minorities, as the sample was female and predominantly white, and hence the effect of ethnicity could not be controlled for in the analyses. Alternative processes may be operating in the development of body dissatisfaction in young boys or in children

from different ethnic groups and thus additional, replicated studies are needed to investigate this.

Measures

Each sub-scale comprising the SATAQ, awareness of sociocultural attitudes towards appearance and internalisation of the thin ideal, represents a separate variable in the present study. This instrument was developed for adults and some words and phrases were modified or items deleted for utilisation with children in this research. However, the adaptation of this adult measure implies that awareness and internalisation in adulthood are equivalent to these constructs in childhood. If these constructs do not remain the same over time, the scale administered in this study may have tapped into different constructs than intended. In relation to this issue, psychometric data are not available for this measure with children and thus its reliability and validity for this population may be different than with adults. A scale assessing these constructs that has been validated against children is ideally required, although such a measure is not available currently.

Dieting behaviour was assessed by asking participants to report whether they were currently, or had in the past, dieted to lose weight. Although this provided an indication of whether they had used food related weight control methods per se it did not reveal the type of dieting behaviour employed. While the literature suggests that children understand how changing eating habits can influence their weight, there may have been individual differences between participants in their understanding of dieting. Thus, body dissatisfaction may be associated with a particular form of dieting behaviour, although this could not be investigated using the assessment

technique employed. Furthermore, the two assessment questions do not provide an indication of the extent of the dieting behaviour. The Dutch Eating Behaviour Questionnaire (Van Strien et al., 1986) could have been administered to meet these requirements, as it assesses restrained, emotional and external eating and has been used with nine year old children. However, the potential contribution of this additional information towards the research aims must be evaluated against the considerable increase in time required to administer the battery of measures to the children.

Assessment of media exposure was also limited, as participants only reported the magazines they read. Thus, any conclusions about the relationships between media exposure and other variables must be interpreted with caution, as the frequency of reading named magazines was not measured and similarly exposure to other sources of media influence were not assessed.

Maternal and peer eating / weight related attitudes and behaviour were assessed according to the participant's beliefs about the other individual. This technique carries the potential for inaccuracies if the participant guesses unknown items or reports false information to present her mother or friend in a particularly way. To limit this occurrence mothers of participants could be invited to complete, for example, the SATAQ or Ideal Body Stereotype Scale-Revised (Stice et al., 1996) and the Dutch Eating Behaviour Questionnaire (Van Strien et al., 1986). However, utilisation of this technique to assess peer attitudes and behaviour may be problematic if they were themselves participants in the study.

Finally, the absence of data regarding pubertal status prohibits the identification of the possible influence of this on the psychological processes under investigation. Although the literature does not report a consistent difference in body dissatisfaction between pre-menarche and post-menarche girls, this may have operated as a confounding variable within this specific participant population. Thus, it may have been useful to include a question concerning the onset of menstruation.

Conceptualisation and Design

Fundamental to this study is the conceptualisation and measurement of psychological processes delineated in the proposed theoretical model, and in existing literature, as distinct constructs. The similarities between these are evident and questionnaire measures rely on very subtle items to differentially tap into these constructs. Indeed, the three measures of body dissatisfaction employed in the present study were combined to form a unitary index, as the high inter-correlation coefficients indicated that they might be assessing the same construct. The weak correlations between theoretically unrelated variables in the present study (e.g. maternal attitudes / behaviour and school-based teasing, media exposure and family-based teasing) are contrary to the assertion that there is a single, all-encompassing construct for the variables included in this research. However, the difficulty in relying on questionnaires to accurately measure these psychological processes remains. Thus, alternative research techniques of experimental or qualitative design may need to be considered. In this study, a qualitative component may have produced valuable information concerning the nature of girls' experience of sociocultural pressures towards thinness, their internalisation of the thin ideal and

their experience of body dissatisfaction. This data may further have provided some insight into the factors that influence the development of body dissatisfaction.

4.5 IMPLICATIONS

From 9 years old, some girls believe that there are positive consequences associated with thinness and subscribe to the thin ideal as a standard with perceived personal value, thereby conforming with the gender role stereotype prescribed by the Western society of today. Girls' knowledge of this stereotype for appearance and their personal endorsement of this may not be considered problematic in itself. However, awareness and internalisation have been identified in the present study as central components of a process operating towards the development of body dissatisfaction in some girls. The potentially harmful consequences of body dissatisfaction and dieting cannot be dismissed by the assumption that these phenomena are the normative experiences of many adolescent girls, as they have recently come to be regarded in adult women, particularly given the young age at which girls may experience body dissatisfaction.

The relationship between body dissatisfaction and clinical eating disorders is well documented (Stice & Agras, 1998; Stice et al., 1994; Stice & Shaw, 1994) and dieting has been identified as a pre-cursor to eating disorder symptomatology (Atkins & Silber, 1993; Mitchell et al., 1985), placing dieting adolescent girls at eight times greater risk of developing a diagnosable disorder than non-dieters (Patton et al., 1990). The continuity perspective states that eating disorders develop from experience and behaviour in the normative range (Pike & Rodin, 1991; Striegel-

Moore et al., 1986). This study has shown that awareness and internalisation of the thin ideal are involved in a mediational relationship with body dissatisfaction and in turn, body dissatisfaction mediates the relationship between internalisation and dieting. Thus, awareness and internalisation may be considered to feature earlier on the continuum than the recognised normative states of body dissatisfaction and dieting. Indeed, together with body dissatisfaction and dieting, internalisation has been identified as comprising the weight relevant component of a single discriminant function, which also includes a psychopathological component, able to differentiate between clinical and non-clinical groups (Stice et al., 1998a). Thus, internalisation of the thin ideal may be conceptualised as an initial stage in the developmental pathway towards an eating disorder. The critical question is therefore whether the findings of the present study suggest intervention targets or strategies to prevent the development of body dissatisfaction and dieting, with their own potentially detrimental consequences for psychological and physical well-being, and the possible development of pathological eating.

Challenging the existence of the thin ideal at a societal level to re-create an image of femininity that welcomes diversity in appearance is an enormous task and one that will not be resolved quickly. However, a forthcoming government summit of young people, media, fashion and advertising representatives is expected to discuss ways of changing the prevailing cultural attitudes concerning female body shape and size. While this may be the necessary long-term aim, the present study suggests that addressing girls awareness of the thin ideal and their beliefs about the positive implications of thinness may be more feasible. The eating / weight-related attitudes and behaviour of the girls' mothers was found to predict their awareness of

the sociocultural standard, suggesting that mothers need to be mindful of the messages concerning appearance that they transmit to their daughters. Although the exact mechanism of transmission is not clearly understood, mothers may need to consider that, for example, their own use of diet products, seemingly innocuous discussions about weight with friends and critical or positively reinforcing comments about their daughters' weight / shape, may contribute to their awareness of the value of thinness. While the importance of increasing mothers awareness of the effect of their own weight / eating related concerns has been previously highlighted (Shisslak et al., 1996), this study has identified the point in the process of body dissatisfaction development that such strategies would target.

This study further suggests that strategies effective in preventing girls internalising the thin ideal may reduce the incidence of body dissatisfaction and dieting behaviour. Cognitive techniques aimed at teaching adolescents to re-frame their thoughts about body size have previously been suggested (Paxton, 1996). However, the present study highlights the position of the intervention target in the processes of body dissatisfaction development and suggests that questionnaires assessing internalisation may be utilised to evaluate the effectiveness of an intervention programme. Specifically, cognitive techniques may be used to help girls assess the realism of social information regarding body size for women and re-frame their thoughts to become more rational and self-enhancing. This preventative strategy therefore addresses the reduction of a risk factor for body dissatisfaction at an individual level rather than at the wider societal level. As has been shown, however, some girls have internalised the thin ideal by 9 years of age and cognitive techniques must therefore be appropriate for use with young children.

This study further found that the peer group operates as an important source of information about body size and shape. This suggests that girls may be lead in a discussion of weight and appearance issues with peers and that this may be a useful forum for appropriately trained teachers / school counsellors to employ cognitive techniques. Indeed, the importance of the peer environment in prevention has been identified in previous research (Paxton, 1993). A further area where the peer group may be valuable is in helping girls find the best way of responding to teasing to prevent them feeling unhappy about their bodies as a consequence. This issue is raised by the present study, which found that teasing operates as another risk factor for body dissatisfaction. Ultimately, longitudinal research is needed to assess the effectiveness of any intervention strategy in reducing the incidence of body dissatisfaction and dieting in girls. However, a cautionary note is warranted. The existing outcome research on primary prevention programmes is limited and has produced inconsistent results. While some studies have reported improved knowledge of weight / eating-related issues (Moreno & Thelen, 1993), others have found no change in attitudes and behaviour (Killen et al., 1993) and an increase in body dissatisfaction following intervention has even been reported (Paxton, 1993). Although this discussion has suggested a variety of intervention targets and techniques as a result of the present study, considerable research is required to understand how children can be helped to feel better about themselves in general and how their attitudes and behaviour may be modified. Then, intervention programmes targeting internalisation of the thin ideal, as described above, may be developed to produce beneficial rather than detrimental effects.

4.6 FUTURE RESEARCH

The present study was concerned with investigating processes operating in the development of body dissatisfaction primarily, but also in the development of dieting behaviour. A diagrammatic representation of these processes, as shown in Figure 1, provides a theoretical model that specifies causal relationships in the development of body dissatisfaction and dieting. Evidence was gained in this study to support many of the research hypotheses relating to specific psychological processes and our understanding of these phenomena may be further enhanced by research testing the proposed causal pathways as part of an integrated model of development. This may be achieved with Structural Equation Modelling (SEM), an informative analytical procedure in research concerned with developmental psychopathology and causal relationships between variables. Following on from the present study, SEM may be used to test the hypothesised sequential pathway from the factors contributing to an awareness of the sociocultural standard of appearance to dieting behaviour, as evidence was found to support hypotheses relating to each stage. This form of analysis would also test the various pathways towards body dissatisfaction and dieting as part of a global model of development. Indeed, this study found that teasing predicts body dissatisfaction independently of internalisation and that body dissatisfaction operates as an intermediary in the effect of both internalisation and teasing on dieting.

The need for longitudinal research in this field is also highlighted by the present study. Specifically, this will allow the investigation of age-related change in levels of awareness and internalisation of the thin ideal and body dissatisfaction.

Longitudinal research may facilitate stronger causal inferences to be made and facilitate the identification of the temporal relation between variables, thereby providing a more comprehensive description of the developmental processes investigated in the present study. However, the need for studies involving girls younger than 9 years of age is further indicated. Body dissatisfaction was the experience of some of the 9 year old participants in this study, suggesting that the processes involved in the development of this phenomenon in these girls had already taken place.

Further research is needed to identify moderating factors that influence which girls will progress to the next stage in the developmental pathway towards body dissatisfaction. Although the lack of evidence to support the hypothesised moderating effects of self-esteem and teasing may be explained by the specificity of the participant population, this study did not explore all possible influences. Indeed, style of cognitive processing, gender role endorsement (Stice et al., 1994) and the importance of appearance to the gender role (Timko et al., 1987), previously identified as related to thin ideal internalisation, may warrant investigation as potential moderating factors. A greater understanding of these influences may facilitate identification of targets for primary intervention programmes.

Replication of the present study with other populations may also be informative. Body dissatisfaction and dieting are not phenomena associated exclusively with girls and research is needed to establish whether the psychological processes identified in this study operate in boys. Similar studies are also indicated with participants representing various ethnic groups, socio-economic, familial and

educational backgrounds. Although this study was conducted with a specific population thought to be at greater risk of developing body dissatisfaction, it is not an experience associated solely with this group.

Finally, qualitative research may further enhance our understanding in this field. Using semi-structured interviews internalisation may be explored more widely, as participants may be questioned about their perception of the values of thinness and how they feel their lives would change if they were to achieve their ideal size. The flexibility of this methodological approach may compliment quantitative research by offering an additional perspective on the nature of internalisation of the thin ideal and how this influences the development of body dissatisfaction and motivation for dieting. It may also uncover further factors that contribute to children's developing awareness of the sociocultural standard for appearance and identify individual differences in their acceptance or rejection of this as a personal goal.

4.7 CONCLUDING REMARKS

Body dissatisfaction, specifically a preference for a thinner shape is becoming the normative experience of young girls in Western culture as it is with adult women. In light of the considerable research conducted to identify factors associated with body dissatisfaction in women, this study has enhanced our understanding of the psychological processes involved in the development of this phenomenon. Thin ideal internalisation, which has received some interest in recent adult studies, has been shown to play a central role in the developmental pathway towards body

dissatisfaction and various interpersonal factors are further featured. Thus, today's Western society faces a situation where, at best, some pre-adolescent girls feel unhappy with their bodies and may engage in dieting behaviour to achieve the thinner size that is highly valued at an individual and societal level. At worst, body dissatisfaction and dieting may operate as pre-cursors to the development of clinical eating disorders in some girls.

Primary interventions are therefore indicated from a young age. Changing the dominant, sociocultural 'gold standard' of female, physical appearance is a long-term goal. However, this study raises the possibility of preventative strategies targeting awareness and internalisation of the thin ideal. To devise effective interventions, further longitudinal research with younger children and the implementation of modelling techniques is needed to better understand the psychological processes involved in body dissatisfaction development. To achieve this, standardised measures developed for use with young children are required. However, one message is clear. Girls in their pre-adolescent and early adolescent years are recipients of sociocultural information concerning the importance of thinness and consequently some may become discontent with their bodies and use weight reduction techniques to achieve the thin ideal.

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APPENDIX 2



Sub-Department of Clinical Health Psychology

UNIVERSITY COLLEGE LONDON

GOWER STREET LONDON WC1E 6BT

General Enquiries: 0171-380 7897
Clinical Tutor Team: 0171-391 1258
UCL: 0171-387 7050
Code from overseas: +44 171
Fax: 0171-916 1989

Address of school

Date

Dear <head-teacher>

I am writing to request the participation of your school in a research project currently being undertaken by Emma Laderman, Clinical Psychologist in Training at University College London, under my supervision.

As you know, the media is full of information about weight and dieting and the ideal body shape presented for women is slim. Children and young adolescents are increasingly aware of the importance our society places on appearance and seem to be becoming more dissatisfied with their body shape and weight. Our research aims to improve our understanding of how girls become dissatisfied with their bodies. This will help us develop techniques to enhance positive body image in young girls.

The project will involve giving girls aged 9-12 years a questionnaire to fill out, which asks questions related to body image, attitudes towards appearance and self esteem. This will take no longer than 45 minutes.

If your school does decide to participate, consent will be sought from each girl individually and those not willing to take part would not have to.

I would be grateful if you would consider this invitation to participate in this research project. Emma Laderman will contact you in the next few weeks to discuss the possibility of arranging a meeting with you. The aims of the study and details of the procedure may then be discussed in greater depth and you will have the opportunity to ask any questions.

Thank you very much for your help.

Yours sincerely,

Professor Jane Wardle
Director, Health Behaviour Unit

APPENDIX 3



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

INFORMATION SHEET FOR SCHOOLS

Girls aged between 9 and 12 years are invited to participate in a study entitled, 'The Emergence of Body Image Dissatisfaction.'

In this society, the media is full of information about weight and dieting and the ideal body shape for women represented on television and in magazines is slim. It is widely accepted that dieting is linked to dissatisfaction with body shape and weight. It is also known that increasing numbers of children and young adolescents are becoming dissatisfied with their bodies. This study aims to improve our understanding of how girls approaching adolescence become dissatisfied with their body shape and weight. A clearer understanding of how body image dissatisfaction emerges may inform the development of techniques to enhance positive body image in young females and prevent excessive dieting.

Participants will be invited to complete a 8-page questionnaire in their class groups, which has been designed for children. The investigator will give clear instructions and will lead the group through each section of the questionnaire in turn. This will take no longer than 45 minutes. Participants will also be weighed and their height measured. This will be done individually and feedback will not be given to prevent the girls asking each other's weight.

It will be clearly explained to the girls that they do not have to participate in the study if they do not want to. They will be invited to sign a consent form if they would like to participate. However, they may drop out of the study at any time without having to give a reason.

All proposals for research using human subjects are reviewed by an ethics committee before they can proceed. This proposal was reviewed by the Joint UCL/UCLH Committees on the Ethics of Human Research.

Thank you for your co-operation.

Yours sincerely,

Miss Emma Laderman Clinical Psychologist in Training, University College London
Professor Jane Wardle Director, Health Behaviour Unit, University College London

Contact telephone number for Emma Laderman (*provided*)

APPENDIX 4



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

CONSENT FORM FOR SCHOOLS

"The Emergence of Body Image Dissatisfaction"

Name of School:.....

Name of Representative:.....

Position Held:.....

- | | |
|--|----------|
| Have you read the information sheet about this study? | YES / NO |
| Have you had an opportunity to ask questions and discuss this study? | YES / NO |
| Have you received satisfactory answers to all your questions? | YES / NO |
| Have you received enough information about this study? | YES / NO |
| Which investigator have you spoken to about this study? | |
| Do you agree to your school participating in this study? | YES / NO |

Signature of representative:.....

Name (please print):.....

Date:.....

Miss Emma Laderman Clinical Psychologist in Training, University College London
Professor Jane Wardle Director, Health Behaviour Unit, University College London
(contact telephone number for Emma Laderman is provided :)

APPENDIX 5



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

INFORMATION SHEET FOR PUPILS

You are invited to take part in a study called "Children's Ideas about Appearance".

In the society we live in, there are many magazine articles and television programmes about appearance. The reason for this study is to find out about the ideas that girls of your age have about appearance. This information will help us to understand how ideas about appearance and body weight develop.

To take part in the study, you will be asked to fill in an 8-page questionnaire designed for children of your age. You will be able to stay in your classroom to fill in the questionnaire and Emma will lead the class through each section in turn, explaining any confusing words. This will take no longer than 30 minutes. You will also be weighed and your height measured in private. Your height and weight will not be told to anyone else.

You do not have to take part in this study if you do not want to. If you do decide to take part, you may drop out at any time without having to give a reason.

Please fill out the consent form provided and return it to school by *(date)*.

Thank you for your help.

Yours sincerely,

Miss Emma Laderman, BSc. Clinical Psychologist in Training,
University College London.
Professor Jane Wardle. Director, Health Behaviour Unit,
University College London

(contact number for Emma Laderman: *provided*.)

APPENDIX 6



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

CONSENT FORM FOR PUPILS

"Children's Ideas about Appearance"

I have read the information sheet and agree / do not agree to take part in the study
(delete as appropriate).

I understand that I can drop out of the study at any time, without having to give a reason.

Name:.....

Date:.....

School:.....

Miss Emma Laderman Clinical Psychologist in Training, University College London
Professor Jane Wardle Director, Health Behaviour Unit, University College London
(contact number for Emma Laderman: *C. provided*...)

APPENDIX 7



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

INFORMATION SHEET FOR PARENTS

Dear Parent / Guardian,

(NAME OF SCHOOL) has agreed to take part in a study entitled, "Children's Ideas about Appearance".

The aim of this study is to explore ideas about appearance in pre-adolescent girls.

Girls aged between 9 and 12 years will be invited to complete a questionnaire in their class groups. The questionnaire, which has been designed for children, includes statements relating to ideas about appearance, followed by simple rating scales. The investigator will give clear instructions and will lead the group through each section of the questionnaire in turn. This will take no longer than 30 minutes. Participants will also be weighed individually in private and their height measured. Confidentiality will be maintained and the school will not be informed of any child's responses on the questionnaire.

It will be clearly explained to the girls that they do not have to participate in the study if they do not want to. If they do choose to take part, they may also withdraw at any time without having to give a reason.

All proposals for research using human subjects are reviewed by an ethics committee before they can proceed. This proposal was reviewed by the Joint UCL/UCLH Committees on the Ethics of Human Research.

Please complete the consent form provided and return it to school with your child by (date).

Thank you for your help.

Yours sincerely,

Miss Emma Laderman, BSc. Clinical Psychologist in Training, University College London
Professor Jane Wardle Director, Health Behaviour Unit, University College London
(contact number for Emma Laderman: *provided*)

APPENDIX 8



Sub-Department of Clinical Health Psychology
UNIVERSITY COLLEGE LONDON
GOWER STREET LONDON WC1E 6BT

CONFIDENTIAL

CONSENT FORM FOR PARENTS

"Children's Ideas about Appearance"

Name of child:.....

School:.....

Class:.....

I have read the information sheet about the study and **do / do not** wish my child to participate (please delete as appropriate).

Name (please print):.....

Signature:.....

Date:.....

Miss Emma Laderman Clinical Psychologist in Training, University College London
Professor Jane Wardle Director, Health Behaviour Unit, University College London
(contact number for Emma Laderman: *provided*)

APPENDIX 9

NUMBER:

SCHOOL:

CLASS:

AGE (years):

Please read each of the following questions and give the answer that best suits you. This is not a test and no-one else will be told any of the answers you have given. Please try to answer all of the questions.

Thank-you.

Emma Laderman

Psychologist

CONFIDENTIAL

SECTION 1

Please read each statement and circle YES or NO to show your answer.

- | | | | |
|-----|---|-----|----|
| 1) | I am good at my school work. | YES | NO |
| 2) | I am intelligent. | YES | NO |
| 3) | I am popular with girls. | YES | NO |
| 4) | I am popular with boys. | YES | NO |
| 5) | My classmates in school think I have good ideas. | YES | NO |
| 6) | My friends like my ideas. | YES | NO |
| 7) | I am lucky. | YES | NO |
| 8) | I am an important member of my class. | YES | NO |
| 9) | I am cheerful. | YES | NO |
| 10) | I am a good person. | YES | NO |
| 11) | When I grow up, I will be an important person. | YES | NO |
| 12) | My classmates make fun of me. | YES | NO |
| 13) | I am always dropping or breaking things. | YES | NO |
| 14) | I cry easily. | YES | NO |
| 15) | When I try to make something, everything seems to go wrong. | YES | NO |
| 16) | I am stupid about most things. | YES | NO |
| 17) | My family is disappointed in me. | YES | NO |
| 18) | It is usually my fault when something goes wrong. | YES | NO |
| 19) | I am unpopular. | YES | NO |

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SECTION 2

Please read the following statements and circle the number that best shows how much you agree with each one.

- 1) Women who are in television programmes and films have the type of appearance that I want to achieve.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 2) I think that clothes look better on thin models.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 3) Music videos that show thin women make me wish I were thin.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 4) I do not want to look like the models in magazines.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 5) I compare my body to females in magazines and on television.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 6) People in our society think that fat people are not very attractive.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 7) Photographs of thin women make me wish that I were thin.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 8) It is important to be attractive if you want to do well in our society.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 9) Most people think that the thinner you are, the better you look.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree
- 10) People think that the thinner you are, the better you look in clothes.

1	2	3	4	5
completely disagree	disagree	neither agree nor disagree	agree	completely agree

CONFIDENTIAL

Section 2 (continued)

- 11) In our society, it is important to always look attractive.
- | | | | | |
|---------------------|----------|----------------------------|-------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| completely disagree | disagree | neither agree nor disagree | agree | completely agree |
- 12) I wish I looked like models in swimming costumes.
- | | | | | |
|---------------------|----------|----------------------------|-------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| completely disagree | disagree | neither agree nor disagree | agree | completely agree |
- 13) When I read magazines, I compare my appearance to the models.
- | | | | | |
|---------------------|----------|----------------------------|-------|------------------|
| 1 | 2 | 3 | 4 | 5 |
| completely disagree | disagree | neither agree nor disagree | agree | completely agree |

Please write down the names of the magazines you read, if any:

.....

.....

.....

SECTION 3

Please read each statement and circle YES or NO to show your answer.

- | | | |
|---|-----|----|
| 1) I think my mother goes on diets. | YES | NO |
| 2) I think that my mother believes women should be thin. | YES | NO |
| 3) I think my mother tries to lose weight. | YES | NO |
| 4) I think my mother wants to be thinner. | YES | NO |
| 5) I think my mother avoids eating food that could make her fat. | YES | NO |
| 6) I think my mother worries about putting on weight. | YES | NO |
| 7) I think my best girl-friend goes on diets. | YES | NO |
| 8) I think my best girl-friend believes women should be thin. | YES | NO |
| 9) I think my best girl-friend tries to lose weight. | YES | NO |
| 10) I think my best girl-friend wants to be thinner. | YES | NO |
| 11) I think my best girl-friend avoids eating food that could make her fat. | YES | NO |
| 12) I think my best girl-friend worries about putting on weight. | YES | NO |

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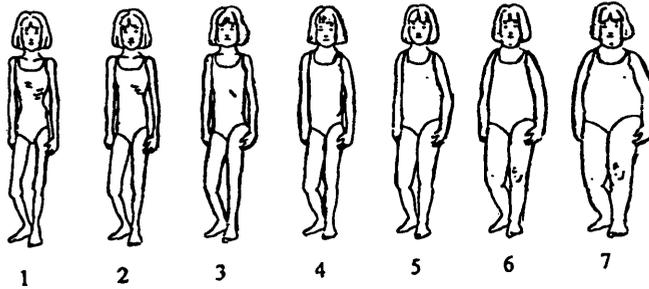
SECTION 4

Please read each statement and circle YES or NO to show your answer.

- | | | |
|---|-----|----|
| 1. I like what I look like in photographs. | YES | NO |
| 2. Children 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'd change about my looks if I could. | YES | NO |
| 9. I'm 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 the way 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. I wish I were fatter. | YES | NO |
| 17. I often wish I looked like someone else. | YES | NO |
| 18. My classmates would like to look like me. | YES | NO |
| 19. I have a high opinion about the way I look. | YES | NO |
| 20. My looks upset me. | YES | NO |
| 21. I'm as nice looking as most people. | YES | NO |
| 22. My parents like my looks. | YES | NO |
| 23. I worry about the way I look. | YES | NO |

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SECTION 5



Please circle the appropriate number.

1. Looking at the pictures above, which picture shows your current body size and shape?
 1 2 3 4 5 6 7
2. Looking at the pictures above, which picture shows the body size and shape you would like to have?
 1 2 3 4 5 6 7

SECTION 6

Please read the statements below and circle the number to show how often you are currently, or have in the past, been teased in the way described. Unless you answered never to a question, rate how upset you were by the teasing.

These questions ask whether you have been teased by people at school.

1. People at school have made fun of you for being heavy.

Never	Occasionally	Sometimes	Often	Very often
1	2	3	4	5
- How upset were you?

Not upset	A little upset	Somewhat upset	Quite upset	Very upset
1	2	3	4	5

CONFIDENTIAL

Section 6 (continued)

2. People at school have called you names like "fatso."
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
3. People at school have pointed at you because you were overweight.
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
4. People at school have made fun of you by repeating something that you said because they thought it was stupid.
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
5. People at school have made fun of you because you were afraid to do something.
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
6. People at school have laughed at you because you didn't understand something.
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5

These questions ask whether you have been teased by people in your family

7. People in your family have made fun of you for being heavy.
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
8. People in your family have called you names like "fatso."
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- How upset were you?
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5

CONFIDENTIAL

Section 6 (continued)

9. **People in your family have pointed at you because you were overweight.**
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- **How upset were you?**
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
10. **People in your family have made fun of you by repeating something that you said because they thought it was stupid.**
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- **How upset were you?**
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
11. **People in your family have made fun of you because you were afraid to do something.**
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- **How upset were you?**
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5
12. **People in your family have laughed at you because you didn't understand something.**
 Never Occasionally Sometimes Often Very often
 1 2 3 4 5
- **How upset were you?**
 Not upset A little upset Somewhat upset Quite upset Very upset
 1 2 3 4 5

SECTION 7

Please read the following statements and tick the one that best describes what you think about your body.

- I think I am much too fat
- I think I am too fat
- I think I am just about right
- I think I am too thin
- I think I am much too thin

CONFIDENTIAL

SECTION 8

This is about what most people think. Look at the pictures and circle the appropriate number for each question.



1



2



3



4

- | | | | | |
|--|---|---|---|---|
| 1) Which girl would most people think is the prettiest? | 1 | 2 | 3 | 4 |
| 2) Which girl would most people think does best at school? | 1 | 2 | 3 | 4 |
| 3) Which girl would most people think has the most friends? | 1 | 2 | 3 | 4 |
| 4) Which girl would most people think is the most popular? | 1 | 2 | 3 | 4 |
| 5) Which girl would most people think is the healthiest? | 1 | 2 | 3 | 4 |
| 6) Which girl would most people think is the most confident? | 1 | 2 | 3 | 4 |

SECTION 9

Please read the following questions about dieting and circle YES or NO to show your answer.

- Are you currently dieting to lose weight YES NO
 Have you ever dieted to lose weight? YES NO

Would you identify yourself as: White
 (please circle) Black
 Asian / Oriental
 Other (please write).....

THE END
THANK YOU FOR FILLING OUT THIS QUESTIONNAIRE