

UNDERLYING ASSUMPTIONS AND CORE BELIEFS RELATED TO EATING DISORDERS IN THE MOTHERS OF OVERWEIGHT GIRLS

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Abstract. Little is known about the weight, shape and eating concerns of mothers with young, overweight daughters. Even less is known about how these relate to their daughters' concerns. In a small pilot study (18 mother-daughter pairs in each group), general concerns and specific beliefs related to eating disorders were assessed, both in the mothers of overweight girls and in the mothers of average weight girls. These were then compared with their daughters' concerns. The findings indicated that mothers with overweight daughters (aged 11 and 12 years) scored more highly than the mothers of average weight girls on both general concerns and specific beliefs (i.e., underlying assumptions about weight, shape and eating and negative self-beliefs) related to eating disorders. While assumptions in mothers were highly correlated with daughters' concerns in the average weight group, no such relationship was found in the overweight group. The findings are briefly discussed and suggestions are made for further research.

Keywords: Cognition, obesity, intergenerational links, eating disorders.

Introduction

Childhood obesity is a risk factor for later eating disorders, including bulimia nervosa (Striegel-Moore, Silberstein, & Rodin, 1986), binge-eating disorder (Fairburn, 1995) and, to a lesser extent, anorexia nervosa (Garfinkel & Garner, 1982). All three of these disorders are characterized by concerns about weight, shape and eating (American Psychiatric Association, 1994).

Recent research suggests that young, overweight girls already have more concerns about their weight, shape and eating than average weight girls of the same age (Burrows & Cooper, in preparation). This finding is important because the presence of such concerns may, within a cognitive framework, help explain their vulnerability to later eating disorders (Fairburn, Cooper, & Cooper, 1986; Garner & Bemis, 1982). To date, the origins of these concerns in young girls have not been widely investigated. In particular, the relationship between the concerns of mothers and those of their overweight daughters is poorly understood.

Several researchers have suggested that concerns about weight, shape and eating are, at least in part, conveyed to children by parents, particularly to girls by mothers (e.g., Hill, Weaver, & Blundell, 1990), perhaps through social modelling. There is some support for

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this suggestion in unselected samples (e.g., Hill et al., 1990; Ruther & Richman, 1993). For example, one recent study found that mothers' weight and shape concerns affected daughters' concerns and eating behaviours (Smolak, Levine, & Schermer, 1999). Modelling (and comments) by mothers seemed to be important in this process. Such findings raise the possibility that mothers of overweight girls may have, and convey, heightened concerns to their daughters. If true, this may in part, help to explain why obese girls are vulnerable to developing eating disorders. However, no study appears to have investigated either the presence of heightened concerns in mothers or the relationship between these and concerns in their overweight daughters.

In recent years, it has been suggested that the core psychopathology of eating disorders lies in underlying assumptions about weight and shape (Cooper, Cohen-Tovee, Todd, Wells, & Tovee, 1997; Cooper, Todd, & Wells, 1998). Assumptions about eating (Fairburn et al., 1986) and negative self-beliefs (Cooper et al., 1997, 1998) are also thought to be important. A self-report measure, the Eating Disorder Belief Questionnaire (EDBQ; Cooper et al., 1997) now exists to assess these beliefs. The measure has promising psychometric properties (Cooper et al., 1997) but, to date, it has not been used to assess specific beliefs related to eating disorders in the mothers of overweight girls. Neither has the relationship between any such beliefs in mothers and the concerns of their overweight daughters been investigated directly.

The current study reports some preliminary data. It sought to test three hypotheses: (a) that mothers of overweight girls would score more highly on a measure of general concern about their weight, shape and eating than mothers of average weight girls; (b) that these mothers would also score more highly on the four sub-scales of the EDBQ; and (c) that, in both groups, mothers' beliefs would correlate with their daughters' concerns.

Method

Participants

Eighteen overweight girls (Weight for Height, standardized against population norms, 120% or above) and 18 average weight girls (Weight for Height 90–110%),¹ together with their mothers, took part in the study. Mother and daughter pairs in both groups were volunteers.² The girls were aged 11 and 12 and attended one of six local, mainstream schools. They were selected from a larger pool of volunteers according to whether or not they met the criteria for the overweight or average weight group. The heaviest girls in the pool were selected for the overweight group. Girls in the average weight group were then selected, to match as closely as possible, with a girl in the overweight group, for height, birth date and school.

Measures

Eating Attitudes Test (EAT). Mothers completed the Eating Attitudes Test (EAT; Garner & Garfinkel, 1979) a self-report measure of symptoms and concerns about weight, shape and eating.

¹ It is common practice to classify a child as obese when their Weight for Height is 120% or more of ideal weight for height, age and sex (Krasnegor, Grave, & Kretchmer, 1988).

² All participants were part of a larger study (Burrows & Cooper, in preparation).

Eating Disorder Belief Questionnaire. Mothers also completed the EDBQ (Cooper et al., 1997). This self-report questionnaire measures three types of underlying assumption: weight and shape as a means to acceptance by others, weight and shape as a means to self acceptance, control over eating; as well as negative self-beliefs.

Eating Disorders Examination for Children. Girls completed the Eating Disorders Examination for Children (CH-EDE; Bryant-Waugh, Cooper, Taylor, & Lask, 1996). This is a standardized semi-structured interview, based on the Eating Disorders Examination (EDE; Fairburn & Cooper, 1993). It assesses the specific psychopathology of eating disorders, including concerns about weight, shape and eating. In the current study the global score (rather than specific subscale scores) was used as a measure of overall concern.

Procedure

Mothers and daughters were recruited to take part in a study designed to “get a better idea of the eating and dieting habits of mothers and daughters”. Each mother and each daughter was seen individually. For the mothers, demographic information was obtained by self-report. This included information on age, weight and height and social class. Each mother then completed the EAT, followed by the four sub-scales of the EDBQ. For the girls, demographic information was obtained on age, and weight and height were measured. The CH-EDE was then administered by a researcher trained in its use. The mothers and girls completed the self-report questionnaires and interview, respectively, independently of each other.

Results

Because of the small sample size all statistical tests used were non parametric. Between group differences were assessed using Mann Whitney U tests, associations between and within groups were assessed using Spearman correlation coefficients. Mean ages for the two groups of mothers and their daughters can be seen in Table 1, together with mean BMI scores for the mothers, mean EAT and EDBQ scores for the mothers and mean Weight for Height ratios for the girls. Results of the Mann Whitney U tests can also be seen in Table 1.

There were no significant differences between the two groups of mothers or the two groups of girls in age (using two-tailed tests). Inspection of the data also suggested that the social class distribution in the two groups of mothers and daughters was similar. However, the mothers and daughters in the two groups did differ in BMI and Weight for Height ratio respectively. The mothers of overweight girls were significantly heavier than the mothers of average weight girls (using a two-tailed test); while the overweight girls were, as expected, significantly heavier than the average weight girls (using a one-tailed test). Mean scores for mothers on the EAT can also be seen in Table 1. Mothers of overweight girls had more general concerns about their weight, shape and eating (as measured by the EAT) than the mothers of average weight girls (using a one-tailed test).

Mean scores on the four sub-scales of the EDBQ can be seen in Table 2. Using one-tailed, Mann Whitney U tests, there were significant differences between the two groups on all four sub-scales of the EDBQ. On all sub-scales the mothers of overweight girls scored more highly than the mothers of average weight girls. Because mothers of overweight girls had

Table 1. Mean scores, standard deviations and Mann Whitney U results for participant characteristics, EAT and EDBQ scores in the two groups of mothers and daughters

	Index group (N=18)		Control group (N=18)		U	p
	M	SD	M	SD		
Mothers						
Age (years)	38.1	4.3	41.4	6.2	98.0	NS
BMI	29.5	5.2	23.9	3.2	44.5	<.001
EAT	18.1	11.2	9.6	10.8	62.0	<.001
EDBQ-AO	20.6	26.1	11.4	22.8	102.0	<.05
EDBQ-SA	52.9	26.1	36.5	29.7	102.0	<.05
EDBQ-CE	17.3	18.2	7.6	17.4	90.0	<.01
EDBQ-NSB	23.9	23.5	11.7	19.3	91.5	<.05
Daughters						
Age (years)	11.7	0.4	12.0	0.4		
W4H	136.1	16.3	95.0	6.9	0	<.001

Index group = overweight girls and their mothers. Control group = average weight girls and their mothers. BMI = Body Mass Index; weight in kg/(height in m)². EAT = Eating Attitudes Test. EDBQ-AO = Eating Disorder Belief Questionnaire; Weight and shape as a means to acceptance by others. EDBQ-SA = Eating Disorder Belief Questionnaire; Weight and shape as a means to self acceptance. EDBQ-CE = Eating Disorder Belief Questionnaire; Control over eating. EDBQ-NSB = Eating Disorder Belief Questionnaire; Negative self-beliefs. W4H = Weight for Height ratio.

significantly higher BMI scores their increased scores may have been related to their weight. However, Spearman correlations indicated that while there was a significant relationship between BMI and EDBQ scores in the mothers of average weight girls, this was not the case in the mothers of overweight girls. Thus this explanation seems unlikely.

The relationship between mothers' scores on the EDBQ and the global score of their daughters on the CH-EDE, with the two groups presented separately, can be seen in Table 2. As can be seen from the Table, while mothers' scores on the three assumption subscales of the EDBQ (but not on the negative self-beliefs subscale) were significantly related to daughters' CH-EDE global score in the average weight group; none of these correlations were significant in the overweight group. There was, however, a moderate (non significant) correlation between mothers' negative self-beliefs and daughters' concerns in this group. This was in the opposite direction to that predicted. Inspection of the data suggested that the results in the overweight group were unlikely to be due to a restricted range of scores (compared to the average weight group). Tests of the difference between the correlations in the two groups indicated that the three assumptions and CH-EDE score correlations were statistically different ($p < .025$) but that the negative self-belief and CH-EDE correlations were not.

Three additional analyses were conducted. In the first, mothers' EAT scores were also correlated with daughters' global CH-EAT scores. There was no significant relationship in either the overweight group ($r = -.14$) or in the average weight group ($r = .35$). In the second, although the EDBQ and CH-EDE subscales are not directly comparable, individual subscales were correlated. There were no significant relationships in the overweight group.

Table 2. Correlations between the four subscales of the EDBQ and girls' global concerns on the CH-EDE for the two groups of mothers and daughters

	Index group (N=18)	Control group (N=18)
EDBQ-AO	-.22	.69***
EDBQ-SA	-.12	.61**
EDBQ-CE	-.15	.78***
EDBQ-NSB	-.43	.13

** $p < .01$; *** $p < .001$

Index group = overweight girls and their mothers. Control group = average weight girls and their mothers. EDBQ-AO = Eating Disorder Belief Questionnaire; Weight and shape as a means to acceptance by others. EDBQ-SA = Eating Disorder Belief Questionnaire; Weight and shape as a means to self acceptance. EDBQ-CE = Eating Disorder Belief Questionnaire; Control over eating. EDBQ-NSB <EQ> Eating Disorder Belief Questionnaire; Negative self-beliefs.

Five correlations were significant ($p < .05$) in the average weight group; the remainder (excluding those with the negative self-beliefs subscale) approached significance. Finally, mothers' EAT scores were correlated with individual CH-EDE subscale scores. One correlation was significant (with the CH-EDE Restraint subscale, $r = -.62$, $p < .005$), a negative correlation. No correlations were significant in the average weight group.

Discussion

The results confirm the first two hypotheses, and partially support the third. Mothers of overweight girls score more highly than mothers of average weight girls on a measure of general concern about their weight, shape and eating. In addition, they also score more highly on a measure that assesses the specific cognitive content of eating disorders; including the core psychopathology, i.e., underlying assumptions about weight and shape; as well as the assumptions about eating and the negative self-beliefs that also characterize these disorders. However, while mothers' assumptions about weight, shape and eating were strongly related to their daughters' concerns about these issues in the average weight group, no such relationship was found in the overweight group. In addition, in both groups, there was no relationship between mothers' negative self-beliefs and daughters' concerns. However, this relationship in the overweight group, though not statistically significant, was of moderate strength and in the opposite direction to that predicted.

Although preliminary, and collected in a relatively small sample, the findings extend previous research into overweight girls. Mothers of overweight girls not only have more general concerns about their weight, shape and eating than the mothers of average weight girls, but they also have more of the specific beliefs that, within the context of cognitive theory, seem to be particularly characteristic of eating disorders. All four types of belief (the three types of underlying assumption and negative self-beliefs) play an important role in recent developments in cognitive theories of bulimia nervosa and anorexia nervosa (Cooper et al., 1997, 1998).

However, assumptions in mothers and concerns in daughters, while related in the average weight group, were not related in the overweight group. Moreover, mothers' negative self-

beliefs and daughters' concerns were not related in either group. It has been suggested that mothers who are concerned about their own weight, shape and eating may encourage the development of these concerns in their daughters through social learning (Hill et al., 1990), especially modelling (Bandura, 1977). It is possible that this may be true in girls of average weight; mothers may model these concerns to their daughters. However, the same does not appear to be true for overweight girls. Neither does there seem to be a straightforward link between mothers' negative self-beliefs and daughters' weight, shape and eating concerns.

While modelling may still play a partial role, the results obtained here suggest that the relationship between assumptions and beliefs in mothers and the concerns of their overweight daughters is complex and that other factors (not investigated here) may be much more important. For assumptions related to weight, shape and eating these could include direct criticism or encouragement to diet by mothers, the influence of peers and of the media.

The moderate, negative correlation between mothers' negative self-beliefs and daughters' concerns in the overweight group deserves comment. One possibility is that mothers of overweight girls may be very conscious of their own low self-esteem and actively work to encourage their daughters to develop a positive view of themselves. The lower their own self-esteem, perhaps, the harder they try. Failure to find a relationship between these two variables in the average weight group is consistent with the finding that negative self-beliefs, although extremely important in eating disorders (Cooper et al., 1998), were a predictor of generic, rather than weight, shape and eating related, distress in an unselected sample (Cooper et al., 1997).

The negative correlation between mothers' EAT score and the CH-EDE Restraint subscale also deserves comment. It may suggest that mothers with high levels of concern about their weight, shape and eating, and with eating disorder related behaviours, also work hard to ensure that their daughters do not share their concerns. Again, the higher their own concerns, perhaps the harder they try.

It should be noted that the design is correlational and can say nothing about direction of causality (one, though unlikely, possibility is that daughters' concerns influence mothers' beliefs and assumptions). Moreover, it should be noted that the mothers of the overweight girls were heavier than the mothers of the average weight group – this may limit the conclusions that can be drawn about average weight mothers with overweight daughters.

Much more work is needed to provide a more detailed explanation than we have at present of why and how childhood obesity is a risk factor for later eating disorders, and to understand the relationship between mother and daughter concerns, particularly in overweight girls. Future research may wish to examine whether our preliminary findings can be replicated in a larger sample, the presence of specific beliefs related to eating disorders in young, overweight girls,³ the relationship between these and the specific beliefs that we have identified in their mothers and, importantly, the ability of maternal beliefs and assumptions to predict daughters' concerns and behaviour.

³ It is important to note that a measure comparable to the EDBQ is not yet available for assessing specific beliefs related to eating disorders in a young age group.

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