



Brief report

Childhood social arena and cognitive sets in eating disorders

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Objective. While there is much evidence to suggest that women with eating disorders experience difficulties in the social domain, little has been done to establish whether such difficulties play a causal role or the extent to which these involve cognitive factors. The purpose of this report is to determine whether difficulties in certain aspects of the childhood social arena are reported as existing prior to developing an eating disorder.

Method. A sample of 43 women with a history of eating disorders and 20 women with no such history were interviewed retrospectively about their feelings and experiences of loneliness, shyness and inferiority in childhood and adolescence.

Results. Women with a history of anorexia nervosa of the binge/purge subtype reported higher levels of loneliness, shyness and feelings of inferiority in adolescence than did women with no history of an eating disorder, and women with a history of bulimia nervosa reported higher levels of shyness. However, this was not true for earlier childhood where such feelings did not differ significantly between groups. This difference could not be accounted for by current depressive disorder, recovery from the eating disorder or level of victimization in adolescence.

Conclusion. There are a number of differences in the aetiology of subtypes of eating disorder. The present results suggest that cognitive styles pertaining to the social arena in adolescence, and prior to the onset of any eating disorders, may play a causal role in the development of anorexia nervosa of the binge/purge subtype, but not anorexia nervosa of the restricting subtype.

Anorexia nervosa and bulimia nervosa are recognized as being multi-determined with a number of factors involved in their aetiology. These factors include genetic, biological, familial, psychological and social influences. However, some of these factors have received more empirical attention than others, at least with regard to risk. While many

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studies have found that sufferers with eating disorders experience psychosocial problems currently, here we report recollections of cognitive social experiences including loneliness, shyness and feelings of inferiority in childhood and adolescence in women with and without a history of eating disorders.

In a series of studies, Fairburn and colleagues (Fairburn, Cooper, Doll, & Welch, 1999; Fairburn *et al.*, 1998; Fairburn, Welch, Doll, Davies, & O'Connor, 1997) have reported that women developing anorexia nervosa, bulimia nervosa and binge eating disorder are more likely than healthy controls to report having an impoverished social environment (e.g. as having no close friends in childhood), and that women with bulimia nervosa more often report being victims of bullying (Fairburn *et al.*, 1997). In psychological terms, the latter also report higher levels of shyness (Fairburn *et al.*, 1997). However, these groups did not differ from a general psychiatric control group. In a study of sister pairs, Karwautz *et al.* (2000) found that sisters with a history of anorexia nervosa were more likely to report having had no close friends in childhood but were no more likely to report psychological impairment in terms of shyness than were their unaffected sisters. The nature of the social environment and cognitive sets such as loneliness and shyness are, of course, likely to be highly related.

Given that peer victimization is related to loneliness (Ladd, Kochenderfer, & Coleman, 1997), it is important to take account of objective social difficulties in addition to cognitive styles. Such difficulties can differ by gender. Thus, while boys are more likely to use overt aggression than girls, girls are more likely to use relational aggression (e.g. social exclusion, the spreading of rumour, social manipulation) than are boys (Crick & Grotpeter, 1995). Since all of those who participated in the present study are women, it is essential also to take account of not just overt or physical victimization but also verbal/relational bullying.

The present study further explored the issue of whether experiencing problems in the social arena represents a vulnerability to developing an eating disorder. In particular, we extended the range of social risk variables typically studied to include the subjective experiences of loneliness, shyness and feelings of inferiority. We also differentiated the timing of these cognitive styles in childhood and adolescence. Given that the use of retrospective measurement runs the risk of reporting or recall bias as a result of current psychiatric status, the present study also attempted to control for depression comorbid with current eating disorder status as a source of such bias.

Method

Participants

Participants were 20 women with no history of an eating disorder and 43 women who had either a current or previous episode of an eating disorder according to ICD-10 (WHO, 1992) criteria. Non-eating disordered (non-ED) women were recruited via advertisements placed in a local newspaper or posters placed around colleges of the University of London, calling for volunteers to participate in a study on stress and health in women. Women with a history of an eating disorder were recruited from women seeking treatment as in-patients or out-patients at the Maudsley & Bethlem Trust and from a volunteer sample ($N = 18$) who had recovered from anorexia nervosa and were participating in a study of biological vulnerability to anorexia (recovery defined as the return to normal weight with $BMI > 19 \text{ kg/m}^2$ and return of menses for at least six

months). A total of 31 women studied had a lifetime diagnosis of anorexia nervosa (15 were of the restricting (R/AN) subtype, and 16 were of the binge/purge (AN/BN) subtype, according to DSM-IV (American Psychiatric Association, 1994) criteria), and 12 currently had normal weight bulimia nervosa (BN). There were no significant differences between groups in terms of age (M_s (SD_s) are non-ED = 29.1 (9.0); R/AN = 26.1 (6.0); AN/BN = 29.9 (8.6); BN = 25.5 (8.1): $F(3,59) = 1.07, p = .37$) and no other demographic variable measured, including marital status, history of divorce, current occupation and whether they had children. However, more eating disordered women were depressed at the time of interview than were non-eating disordered women (non-ED: $N = 0$; R/AN: $N = 3$; AN/BN: $N = 6$; BN: $N = 5$: $\chi^2 = 10.54, p < .05$). Age at onset also did not differ significantly between eating disorder groups (M_s (SD_s) are 18.7 (3.9), 17.6 (5.4) and 17.6 (2.6) for R/AN, AN/BN and BN groups, respectively: $F(2,40) = .32, p = .73$). Of those who no longer had an eating disorder at the time of the interview, the mean duration of recovery was 6.3 years ($SD = 7.4$, range = .5–30 years), while for those who were still ill, the mean duration of illness was 6.4 years ($SD = 6.3$, range = 1–23 years).

Measures

The interview (Childhood Social Arena and Cognitive Sets) used here is an optional section of a larger semi-structured interview, the Childhood Experience of Care and Abuse (CECA; Bifulco, Brown, & Harris, 1994). Variables measured include the retrospective reports of feelings of loneliness, shyness and inferiority for two time periods, namely childhood and adolescence. Ratings are made on a 4-point scale of 1 = little/none, 2 = some, 3 = moderate and 4 = marked (note that this is the reverse of the convention when rating this measure, but is presented this way for ease of understanding differences between mean scores). Although ratings are based on subjective experiences, evidence was required to demonstrate that the respondent actually felt these experiences in childhood/adolescence and was not simply a reflection of current feelings. Ratings are made by the interviewer according to predefined, manualized criteria. Being a victim of verbal/relational and physical bullying was rated objectively based on evidence of social exclusion or assault by peers (friends, schoolmates and strangers). Ratings for all these variables are made separately for childhood (the years of 0–10 years inclusive) and adolescence (11–17 years inclusive). The mean inter-rater reliability (weighted κ) for loneliness, shyness and inferiority was .70 ($SD = .08, p < .005$), which compares favourably with other such measures (e.g. Fairburn *et al.* (1997) report $M = .66, SD = .17$). However, those for childhood were slightly lower (.79, .65 and .57) than those for adolescence (.78, .73 and .66, respectively). Current depression was assessed using the Structured Clinical Interview for DSM-III-R (Spitzer, Williams, Gibbon, & First, 1989), and for the purposes of the present report, depression includes major depressive illness or dysthymia.

Procedure

Participants were interviewed about the period up to age 17 except for those who developed an eating disorder before this age. Since the year prior to onset is expected to contain provoking agents (events or difficulties that lead directly to onset) rather than vulnerability or risk factors (Schmidt, Tiller, Andrews, Blanchard, & Treasure, 1997), where onset occurred before age 17, the period excluding the year before onset was

covered. Thus, for someone whose onset was at 15, the Childhood Social Arena interview was asked for the period up to age 14 in order to avoid confounding possible provoking agents (e.g. the loss of an important relationship) with possible vulnerability factors (e.g. the ongoing absence and/or the inability to form and maintain such a relationship).

Results

A two-way (lifetime eating disorder diagnosis \times current depression) multivariate analysis of variance (MANOVA) showed that there was a significant difference between diagnostic groups in their reports of social cognitive experiences in childhood (Wilks' $\lambda = .53, p < .05$). However, there was no significant main effect of current depression or their interaction (Wilks' $\lambda = .92, p = .68$; Wilks' $\lambda = .75, p = .29$, respectively). Follow-up univariate tests for the effect of diagnostic group showed that all three cognitive sets differed significantly between groups, but only for those sets reported in adolescence, not childhood (see Table 1).

Table 1. Univariate tests for subjective reports of cognitive sets in childhood

	Non-ED	AN/R	AN/BN	BN	Statistics (d.f. = 3,58)
Childhood cognitive sets					
Felt loneliness (age ≤ 10)	1.75 (.97)	1.62 (1.19)	2.29 (1.14)	2.27 (1.27)	$F = .53, p = .66$
Felt loneliness (age ≥ 11)	1.95 (1.10) _a	1.77 (1.17) _a	3.29 (.99) _b	2.27 (1.42) _{ab}	$F = 3.55, p < .05$
Felt shyness (age ≤ 10)	1.80 (.83)	1.46 (.66)	2.42 (1.01)	2.18 (.98)	$F = 2.67, p = .06$
Felt shyness (age ≥ 11)	1.80 (.89) _a	1.77 (1.01) _{ab}	2.71 (.99) _b	2.55 (.82) _{ab}	$F = 3.86, p < .05$
Felt inferiority (age ≤ 10)	2.00 (0.97)	1.85 (1.28)	2.29 (1.07)	1.91 (1.14)	$F = 1.09, p = .36$
Felt inferiority (age ≥ 11)	2.35 (.88) _a	2.15 (1.07) _a	3.29 (.83) _b	2.09 (.94) _a	$F = 5.98, p < .001$
Childhood bullying					
Verbal/relational (age ≤ 10)	1.80 (1.15)	1.27 (.70)	2.27 (1.16)	1.33 (.65)	
Verbal/relational (age ≥ 11)	2.15 (1.27)	1.53 (.92)	2.80 (1.08)	1.92 (1.00)	
Physical bullying (age ≤ 10)	1.55 (.89)	1.00 (.00)*	1.80 (1.01)	1.17 (.58)	
Physical bullying (age ≥ 11)	1.30 (.66)	1.00 (.00)*	1.80 (1.01)	1.25 (.62)	

* All R/AN patients reported 1 = little/no physical bullying; therefore there is no variance in responses. Notes. Scores of 1 = little/none; 2 = some; 3 = moderate; and 4 = marked. Where means do not share a common subscript, means differ significantly ($p < .05$).

A *post hoc* analysis using Tukey's test showed that R/AN women did not differ significantly from non-ED women on any of the variables measured. BN women also did

not differ significantly from non-ED women, although the difference on felt shyness fell only just short of conventional levels of significance ($p = .06$), as did the difference on shyness between BN and R/AN women ($p < .10$). AN/BN women, however, differed significantly from non-ED women on all three variables. In addition, they reported having been significantly more lonely than R/AN women as well as feeling significantly more inferior than both R/AN and BN women. Although AN/BN women reported the highest levels of shyness, they did not differ significantly from BN women, but the difference with R/AN women approached significance ($p = .08$).

A second MANOVA showed that there was no significant main effect of diagnostic group, current depression or their interaction on levels of victimization through verbal/relational and physical bullying in childhood and adolescence (Wilks' $\lambda = .74, .88$ and $.87$, respectively, all $ps > .13$). Furthermore, when the two-way (diagnostic group \times current depression) MANOVA for shyness, loneliness and inferiority is repeated, covarying out the effects of bullying in adolescence, the results remain essentially unchanged.

Since our sample included both currently ill and recovered anorexic women, we also explored whether current psychiatric status might have biased the reporting of premorbid subjective states. A two-way (AN subtype \times recovered/non-recovered) MANOVA confirmed the significant main effect of AN subtype on social arena variables (Wilks' $\lambda = .53, p < .05$) but showed that the main effect of recovery status and the interaction were both non-significant (Wilks' $\lambda = .73, p = .40$; Wilks' $\lambda = .81, p = .64$, respectively). In other words, those who are still ill do not report their childhood and adolescent social arena to have been any worse than do those who have recovered.

Discussion

This study describes the subjective experiences of loneliness, shyness and inferiority in childhood and adolescence reported by women with and without a history of eating disorders. Women with a history of anorexia nervosa of the restricting subtype did not differ from women with no history of an eating disorder on any of the variables measured. Women with bulimia nervosa also differed little from non-eating disordered women, although they did report higher levels of shyness, replicating Fairburn *et al.* (1997). It is women with anorexia nervosa of the binge/purge subtype, however, who show the clearest differences, reporting higher levels of loneliness, shyness and feelings of inferiority than non-eating disordered women. Consistent with a developmental perspective, these differences did not appear to be present in childhood but emerged in adolescence. The study adds to previous findings by considering subtypes of anorexia nervosa, changes in social arena between childhood and adolescence and the presence of a range of experiences of verbal, relational and physical victimization.

Although retrospective reports can be accurate, reliable and valid (Bifulco *et al.*, 1994), this may be limited to those events and experiences that can be rated based on behavioural and contextual information (Brewin, Andrews, & Gotlib, 1993), and the retrospective nature of this study is clearly a potential limitation to the interpretation of results. This may be especially true for the reporting of feelings of loneliness, shyness and inferiority in childhood as it may be more difficult to recall these experiences during this period than in adolescence. On this point, it may be interesting to note that the inter-rater reliability for childhood ratings was slightly lower than for adolescence, which may be due to a relative lack of information for this period. However, there are a

number of features of this study that attempt to overcome potential biases. First, controls are made for potential reporting biases owing to a current (vs. past) eating disorder and comorbid depression. Secondly, care was taken to ensure that the respondent could provide examples or statements that were unequivocally rooted in childhood/adolescence (prior to onset of any eating disorder) rather than current experiences. Since there can be discrepancies between behaviour and subjective experience, we feel that the use of subjective reports, though potentially fraught with methodological problems, was warranted in this case (especially in light of the fact that women who had recovered from anorexia nervosa reported the same social cognitive experiences as did those who were still ill). For example, some women in this study reported having felt that they were shy and, therefore, compensated by being very sociable, whereas others reported giving in to their feelings of shyness and avoiding social contact. Clearly, we could have missed some important information if we had based our ratings entirely on objective, behavioural indicators. However, a longitudinal rather than a retrospective study would be preferable.

It is worth noting in passing the lack of a significant main effect of current depression on these variables. We suspect that this may be because those who were currently depressed essentially formed a subgroup of those with a history of eating disorders and that current depression was not associated with increased levels of shyness, loneliness or inferiority over and above that already accounted for by a history of an eating disorder in this subgroup. In addition, in the present study, depression was defined broadly, which may also have weakened the effect.

While a number of studies have shown that women with current eating disorders experience interpersonal and social difficulties (Schmidt, Tiller, & Morgan, 1995), it is interesting to note that such difficulties may be antecedent to the development of some types of eating disorder, but not others. Problems within the social arena that emerge during adolescence may be a risk for the later development of anorexia nervosa of the binge/purge subtype. However, while those who develop bulimia nervosa also appear to experience some difficulties (namely shyness), the present results suggest that, for those with the restricting subtype of anorexia nervosa, the premorbid social self is largely untroubled.

Why there should be such a difference between subtypes of anorexia nervosa is an interesting question. Schmidt et al. (1997; Schmidt, Troop, & Treasure, 1998) have previously found that severe life events and difficulties of an interpersonal nature generally provoke onset of anorexia nervosa of the restricting type and normal weight bulimia nervosa, but not anorexia nervosa of the binge/purge type. It is tempting to speculate that anorexia nervosa of the binge/purge subtype develops in the context of chronic experiences of shyness, loneliness and inferiority, whereas problems in the social arena experienced by other eating disorder groups develop more acutely in response to a severe life event or marked difficulty that also provokes onset of the eating disorder. Alternatively, premorbid problems in the social arena of patients with anorexia nervosa of the binge/purge subtype may exist alongside other problems such as childhood sexual abuse (CSA). CSA is more common in the binge/purge than the restricting subtypes (Waller, 1991) and is also associated with borderline personality disorder in the former, but not the latter, subgroup (Waller, 1993). However, the precise significance of the differences in childhood social arena in the aetiology of eating disorders, as well as the possible reasons for these differences, require further research.

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