The relationship between parental bonding and core beliefs in anorexic and bulimic women

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Objective. The role of core beliefs in the psychopathology of eating disorders has been considered in recent years. Young (1994) hypothesized that unhealthy core beliefs originate from the experience from the first few years of life. The aim of the present study was to consider whether perceived parental bonding might explain the development of such beliefs in eating disordered women.

Method. The participants were 30 anorexics, 27 bulimics and 23 comparison women who completed measures of core beliefs and perceived parental bonding.

Results. There were significant differences in perceived parental bonding behaviours across groups. The association between parental bonding and core beliefs were much stronger in the anorexic group than that in either the bulimic or the control group. In particular, a perceived low level of parental care was predictive of the presence of some unhealthy core beliefs in anorexic women.

Conclusion. Longitudinal research is needed to confirm these findings among anorexic and bulimic women. Clinically, these findings provide insight into the possible origins or core beliefs, and hence might aid their challenge in schema-focused cognitive therapy.

A number of authors (e.g. Cooper, 1997; Leung, Waller, & Thomas, 1999, 2000; Waller, Ohanian, Meyer, & Osman, in press) have recently highlighted the importance of unconditional core beliefs (or cognitive schemas) in the psychopathology and treatment of eating disorders. The role of schema-level representations was

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originally considered by Beck (e.g. Beck, 1967, 1976) in his work with depressed patients. He defined the schema as a constellation of distorted patterns of thinking that, when activated, directly influence the individual’s perception and interpretation of the events in the immediate environment. Young (1994) describes core beliefs (which he terms ‘early maladaptive schemas’) as representing the deepest level of cognition, formed largely in very early childhood. The hypothesized early origin of these unconditional beliefs suggests that experience in the first few years of life will be closely associated with the development of such beliefs. The present study examines the role of perceived parental bonding in the development of core beliefs among eating disordered women.

There is evidence in the research literature to suggest that unhealthy patterns of attachment and bonding play a role in the development and maintenance of eating disorders (e.g. Heesacker & Neimeyer, 1990; Mallinckrodt, McCreary, & Robertson, 1995). For example, in a population-based study of over 2000 female twins, Walters and Kendler (1995) found that high maternal overprotectiveness was significantly associated with anorexia nervosa. Similarly, it has been demonstrated that bulimics experience more parental rejection (Stuart, Laraia, Ballenger, & Lydiard, 1990), less paternal affection and more paternal control towards them than towards their siblings (Wonderlich, Ukestad, & Perzacki, 1994). Several authors have used the Parental Bonding Instrument (PBI; Parker, 1983; Parker, Tupling, & Brown, 1979) to demonstrate unhealthy levels of recalled parental care and overprotection among women with anorexic and bulimic disorders (e.g. Calam, Waller, Slade, & Newton, 1990; Palmer, Oppenheimer, & Marshall, 1988; Steiger, Van der Freen, Goldstein, & Leicher, 1989). However, whilst these studies suggest that perceived parental care and overprotection might be important in the aetiology of eating disorders, the potential psychosocial factors that are involved in this relationship remained to be determined. Given the model outlined above (Young, 1994), it can be hypothesized that the family experience results in the development of unhealthy core beliefs, which in turn lead to eating psychopathology (Cooper, 1997; Leung et al., 1999, 2000; Waller et al., in press).

It is the aim of the present study to determine whether recalled patterns of parental care and overprotection might explain unhealthy levels of core beliefs among women with eating disorders. Two research questions are asked: (1) Is there a clear association between unhealthy bonding experiences and core beliefs?; (2) Is there a difference in patterns of association of core beliefs and perceived bonding between anorexic, bulimic and non-eating disordered women?

Method

Participants

The clinical participants were consecutive referrals for psychological treatment at a specialist eating disorder clinic. The anorexic group consisted of 30 women, with DSM–IV (American Psychiatric Association, 1994) diagnoses of anorexia nervosa of the restrictive subtype (N = 20) or the bulimic subtype (N = 10). The bulimia nervosa group consisted of 27 women, who met DSM–IV criteria. The mean ages for the restrictive anorexics, bulimic anorexics and bulimia nervosa group were 26.1 years (range = 17–50; SD = 7.80), 22.6 years (range = 18–29; SD = 3.53) and 25.6 years (range = 18–39 years, SD = 5.13) respectively. The mean Body Mass Index (BMI) for these three groups were 16.4
Parental bonding, core beliefs and eating disorders

(range = 12.7–18.1; SD = 1.32), 16.5 (range = 14.8–17.5; SD = 0.96) and 21.0 (range = 17.9–23.5; SD = 1.42). The comparison group were 23 non-eating disordered women, recruited through personal contacts. Each comparison woman was interviewed to exclude those who met criteria for a DSM-IV eating disorder diagnosis or who reported any history of bingeing or self-induced vomiting in the last 3 months. Their mean age was 26.4 years (range = 17–37 years, SD = 4.67) and their mean BMI was 21.6 (range = 18.7–24.8; SD = 1.66). In order to ensure this group is a representative sample, their scores on the Parental Bonding Instrument (Parker et al., 1979) and Young’s Schema Questionnaire (Young, 1994) were compared to those obtained by non-clinical samples included in other studies (Parker, 1983; Waller et al., in press). Overall, the mean scores obtained by the present sample were comparable to those reported in these studies.

Measures and procedure

Each woman completed the Parental Bonding Instrument (PBI; Parker et al., 1979) and Young’s Schema Questionnaire (YSQ; Young, 1994). For the clinical groups, this was carried out during the assessment stage.

Parental Bonding Instrument. The PBI (see Parker et al., 1979) is a 25-item questionnaire, which measures perceptions of parental behaviours in the first 16 years of life. The behaviours are divided into two scales:

1. Care (measuring a range of behaviours from affection and warmth to coldness and rejection); and
2. Overprotection (measuring a range of behaviours from encouragement of autonomy/independence to strict control with regulation and intrusion).

Each item is answered on a 4-point Likert scale, ranging from ‘very like my parent’ to ‘very unlike my parent’. The set of 25 questions is completed twice, once in relation to each parent. Unhealthy parent–child bonding is indicated by lower care scores and higher overprotection scores (Parker, 1983).

Young’s Schema Questionnaire. The YSQ (see Young, 1994) is a 205-item questionnaire, developed to measure 16 core beliefs. The items are answered on a 6-point Likert scale, ranging from ‘completely untrue of me’ to ‘describes me perfectly’. The 16 schemas in the YSQ are:

1. Abandonment (the belief that close relationships will end imminently);
2. Functional dependence/incompetence (the belief that one is not competent and cannot be independent);
3. Defectiveness/shame (the belief that one is internally flawed);
4. Emotional deprivation (the belief that one’s emotional needs will never be met);
5. Emotional inhibition (the belief that emotions must be inhibited to avoid adverse consequences);
6. Enmeshment (the lack of individual identity, due to emotional overinvolvement with others);
7. Entitlement (the belief that one can act without consideration for others);
8. Failure to achieve (the belief that one is incapable of performing well);
9. Insufficient self-control/self-discipline (the belief that one cannot control one’s impulses or feelings);
10. Mistrust/abuse (the belief that one will be taken advantage of by others);
11. Subjugation (the belief that one must submit to the control of others to avoid negative consequences);
12. Social isolation (the belief that one is different and isolated from the world);
13. Self-sacrifice (the belief that one must sacrifice one’s own needs to help to satisfy others’ needs);
14. Social undesirability (the belief that one is unattractive to and disliked by others);
15. Unrelenting standards (the belief that one should strive for unrealistic standards); and
16. Vulnerability to harm and illness (the belief that one has no control over the threat of disasters).

Schmidt, Joiner, Young, & Telch (1995) have demonstrated that the YSQ has good levels of psychometric and clinical utility, while Waller et al. (in press) and Leung et al. (1999, 2000) have demonstrated its clinical utility with eating disordered patients. Higher item mean scores indicate more unhealthy core beliefs.
**Data analysis**

Due to the small number of participants in each group, the restrictive and bulimic anorexics were combined into a single group in the data analysis. Homogeneity of variance tests suggested that it was appropriate to use parametric tests throughout. First, ANOVAs were used to compare the differences in PBI and YSQ scores across the three groups (i.e. anorexics, bulimics and comparison women). Secondly, correlation coefficients (Pearson’s $r$) were calculated to test for associations between parental bonding and core beliefs. To reduce the risk of Type 1 errors with the large number of correlations, an $\alpha$ of .01 was adopted. Finally, multiple regression analyses were used to partial out the intercorrelation of the PBI scales, in order to determine the most parsimonious models of the associations between parental bonding and core beliefs for each group.

**Results**

**Parental bonding in different groups**

Table 1 shows the mean scores of the three groups on the PBI, and the results of ANOVAs used to compare the groups. On the Care scale, the fathers and mothers of both the anorexics and the bulimics were perceived as less caring than those of the comparison women. On the Overprotection scale, the mothers of anorexic and bulimic women were perceived as more overprotective than those of the comparison group. In contrast, the fathers of bulimics were seen as more overprotective than those of either the anorexic or the comparison women.

<table>
<thead>
<tr>
<th>PBI scale</th>
<th>Anorexia nervosa ($N = 30$)</th>
<th>Bulimia nervosa ($N = 27$)</th>
<th>Comparison women ($N = 23$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal care</td>
<td>21.5 (9.85)</td>
<td>17.6 (8.76)</td>
<td>28.2 (6.96)</td>
</tr>
<tr>
<td>Maternal protection</td>
<td>15.3 (7.91)</td>
<td>16.9 (7.03)</td>
<td>9.65 (7.20)</td>
</tr>
<tr>
<td>Paternal care</td>
<td>17.3 (8.21)</td>
<td>17.9 (8.22)</td>
<td>27.0 (6.96)</td>
</tr>
<tr>
<td>Paternal protection</td>
<td>13.9 (8.21)</td>
<td>20.7 (7.17)</td>
<td>10.2 (6.91)</td>
</tr>
</tbody>
</table>

* $p < .001$.

**Core beliefs across groups**

The YSQ scores of these groups have been reported in a separate paper (Leung et al., 1999), and hence will not be repeated in detail here. In brief, there were significant overall differences ($p < .001$) on all the 16 YSQ scales, with the
comparison women having a less pathological score than the eating disordered groups on each scale.

Association between parental bonding and core beliefs

The large number of individual correlation coefficients will not be reported here, since the subsequent section will report a more parsimonious profile. However, it is interesting to note the general pattern of individual links across groups. Overall, the associations between parental bonding and core beliefs were stronger among anorexic women than among bulimic or comparison women. Maternal care was negatively correlated with 12 out of 16 YSQ scales in anorexic women ($r = -.46, p < .01$ in all cases), but was only associated with one YSQ scale (emotional deprivation) in the bulimic group ($r = -.65, p < .01$) and with two YSQ scales (emotional deprivation; abandonment) in the comparison women ($r = -.71, p < .01$ in both cases). Similarly, maternal overprotection was positively associated with 11 YSQ scales in anorexic women ($r = .47, p < .01$ in all cases), but with only one YSQ scale (social undesirability) in bulimic women ($r = .56, p < .01$) and with none in the comparison group. Paternal care was negatively associated with nine YSQ scales in anorexic women ($r = -.49, p < .01$ in all cases), but with only three YSQ scales (social isolation; defectiveness/shame; vulnerability to harm) in the comparison women ($r = -.57, p < .01$ in all cases). In the bulimic group, a rather unexpected finding was observed—paternal care was positively correlated with vulnerability to harm beliefs ($r = .69, p < .01$). Finally, paternal overprotection was positively associated with nine YSQ scales in anorexic women ($r = .52, p < .01$ in all cases), but with only one YSQ scale (social isolation) in the comparison group ($r = .59, p < .01$). Again, there was a somewhat unexpected pattern in the bulimic group, where paternal overprotection was positively associated with emotional deprivation beliefs ($r = .60, p < .01$) but was negatively associated with entitlement beliefs ($r = -.63, p < .01$).

Developing a parsimonious model of predictors of core beliefs

Multiple regression analyses were used to determine the most parsimonious set of perceived parental bonding behaviours that might predict the development of unhealthy core beliefs in each of the three groups. The results of such analyses are shown in Table 2. In anorexic women, low parental care was highly predictive of unhealthy core beliefs. Four such beliefs (defectiveness/shame; emotional deprivation; emotional inhibition; unrelenting standards) were reliably predicted by low maternal care alone, whereas another three different beliefs (abandonment; enmeshment; insufficient self-control) were predicted by low paternal care alone. The mistrust/abuse belief was significantly predicted by both low maternal care and low paternal care. Perceived paternal overprotection was also predictive of some core beliefs. The self-sacrifice belief was predicted by a combined effect of low paternal care and high paternal overprotection, while the entitlement belief was predicted by low paternal care and low paternal overprotection. In contrast, maternal overprotection did not play a role among the anorexic women. Several other core
<table>
<thead>
<tr>
<th>YSQ scale</th>
<th>Overall effect</th>
<th></th>
<th>Significant PBI scales*</th>
<th>Overall effect</th>
<th></th>
<th>Significant PBI scales*</th>
<th>Overall effect</th>
<th></th>
<th>Significant PBI scales*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$F$</td>
<td>% variance</td>
<td></td>
<td>$F$</td>
<td>% variance</td>
<td></td>
<td>$F$</td>
<td>% variance</td>
<td></td>
</tr>
<tr>
<td>Abandonment</td>
<td>5.30**</td>
<td>37.2</td>
<td>Low PC*</td>
<td>1.38 n.s.</td>
<td>—</td>
<td>—</td>
<td>4.45**</td>
<td>38.5</td>
<td>Low MC**</td>
</tr>
<tr>
<td>Dependence/incompetence</td>
<td>3.44*</td>
<td>25.1</td>
<td>—</td>
<td>2.67 n.s.</td>
<td>—</td>
<td>—</td>
<td>2.59 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Defectiveness/shame</td>
<td>11.3**</td>
<td>58.7</td>
<td>Low MC*</td>
<td>3.09*</td>
<td>24.3</td>
<td>—</td>
<td>4.38**</td>
<td>38.1</td>
<td>—</td>
</tr>
<tr>
<td>Emotional deprivation</td>
<td>35.6**</td>
<td>82.7</td>
<td>Low MC*</td>
<td>6.69**</td>
<td>46.7</td>
<td>Low MC**</td>
<td>11.5**</td>
<td>65.6</td>
<td>Low MC**</td>
</tr>
<tr>
<td>Emotional inhibition</td>
<td>8.00**</td>
<td>49.1</td>
<td>Low MC*</td>
<td>2.48 n.s.</td>
<td>—</td>
<td>—</td>
<td>1.70 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Enmeshment</td>
<td>4.94**</td>
<td>35.2</td>
<td>Low PC*</td>
<td>2.18 n.s.</td>
<td>—</td>
<td>—</td>
<td>3.53*</td>
<td>31.5</td>
<td>Low MC*</td>
</tr>
<tr>
<td>Entitlement</td>
<td>2.80*</td>
<td>19.9</td>
<td>Low PC*; Low PO*</td>
<td>4.85*</td>
<td>37.2</td>
<td>Low PO*</td>
<td>0.65 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Failure to achieve</td>
<td>3.69*</td>
<td>27.1</td>
<td>—</td>
<td>1.94 n.s.</td>
<td>—</td>
<td>—</td>
<td>1.46 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Insufficient self-control</td>
<td>3.60*</td>
<td>26.4</td>
<td>Low PC*</td>
<td>0.86 n.s.</td>
<td>—</td>
<td>—</td>
<td>1.85 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Mistrust/abuse</td>
<td>17.9**</td>
<td>70.0</td>
<td>Low MC**; Low PC*</td>
<td>1.06 n.s.</td>
<td>—</td>
<td>—</td>
<td>2.00 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Subjugation</td>
<td>3.84*</td>
<td>28.1</td>
<td>—</td>
<td>2.43 n.s.</td>
<td>—</td>
<td>—</td>
<td>0.52 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Social isolation</td>
<td>12.8**</td>
<td>62.0</td>
<td>—</td>
<td>1.57 n.s.</td>
<td>—</td>
<td>—</td>
<td>2.73 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Self sacrifice</td>
<td>17.9**</td>
<td>70.0</td>
<td>Low PC*; High PO**</td>
<td>0.62 n.s.</td>
<td>—</td>
<td>—</td>
<td>0.74 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Social undesirability</td>
<td>1.24 n.s.</td>
<td>—</td>
<td>—</td>
<td>5.86*</td>
<td>42.8</td>
<td>High MO**; High PC*</td>
<td>1.59 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Unrelenting standards</td>
<td>5.03*</td>
<td>29.5</td>
<td>Low MC**</td>
<td>2.73 n.s.</td>
<td>—</td>
<td>—</td>
<td>1.13 n.s.</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Vulnerability to harm</td>
<td>4.79**</td>
<td>34.4</td>
<td>—</td>
<td>6.93**</td>
<td>47.7</td>
<td>High PC**</td>
<td>8.04**</td>
<td>56.1</td>
<td>Low PC**</td>
</tr>
</tbody>
</table>

*a MC = Maternal care; MO = Maternal overprotection; PC = Paternal care; PO = Paternal overprotection.
*p < .05; **p < .01.
beliefs were predicted overall by the PBI scales (e.g. subjugation; functional dependence/incompetence), but no individual PBI scale was a significant predictor. The associations were less widespread among the other two groups. In bulimic women, the predictive power of perceived parental behaviours was not as strong or consistent as that in the anorexic group. The emotional deprivation belief was predicted by low maternal care; the vulnerability to harm belief was predicted by high paternal care; and the entitlement belief was predicted by low paternal overprotection. Social undesirability belief was predicted by a combined effect of high maternal overprotection and high paternal care. In the comparison group, both abandonment and emotional deprivation beliefs were reliably predicted by low maternal care, while the enmeshment belief was predicted by high maternal care. In contrast, vulnerability to harm was predicted by low paternal care. The defectiveness/shame core belief was significantly related overall to PBI scores in both the bulimic and the comparison women, but no individual PBI scale was reliably correlated with this YSQ scale.

**Discussion**

The aim of the present study was to determine whether it is possible to support a model where perceived patterns of parental care and overprotection in childhood could explain later levels of unhealthy core beliefs among women with eating disorders. Overall, both anorexic and bulimic women recalled higher levels of unhealthy parental bonding behaviours than the comparison group—a finding that is broadly in line with existing findings in the literature (e.g. Calam et al., 1990; Palmer et al., 1988; Steiger et al., 1989). More importantly, these findings demonstrate a strong link between some unhealthy parental bonding behaviours and dysfunctional core beliefs, especially in the anorexic group. For example, both low maternal and paternal care were highly predictive of unhealthy core beliefs in anorexic women, but only weak links were found in the bulimic and comparison groups. The predictive power of parental overprotection on core beliefs was weak in all three groups, and mostly had a role through a combined effect with low parental care.

Based on the present findings, it can be argued that low parental care influences the development of specific core beliefs in eating disordered women, especially anorexics. Within such a model, when the perceived level of maternal care is low, the anorexic women develop a belief that they are inherently defective and set unrealistic high standards for themselves. They also develop the beliefs that their emotional needs will never be met, and that they should never show their feelings. In contrast, when the perceived level of paternal care is low, these anorexic women develop a lack of self-identity and a belief that close relationships will inevitably end. They also develop the beliefs that they cannot control their own feelings and should sacrifice their own needs. A different pattern was observed in the bulimic group—high levels of perceived paternal care appear to have an adverse effect on the individuals, making them feel more socially undesirable and more vulnerable to harm. However, perceived levels of parental overprotection seem to have a lesser impact in the development of core beliefs in both anorexic and bulimic women. It is particularly worth noting that maternal overprotection was not predictive of any unhealthy core
belief in the multivariate analyses, despite repeatedly being cited in the literature as a major precipitating factor in the development of anorexia nervosa (e.g. Harding & Lachenmeyer, 1986; Minuchin, Rosman, & Baker, 1978; Selvini-Palazzoli, 1974). This outcome may be due to the fact that these associations with maternal protection are largely a product of covariance with other PBI scales.

There are several limitations to the present study. First, the sample sizes were relatively small. Although great care has already been taken in the data analysis (such as adopting a very low $\alpha$ level), the results should still be interpreted and used with caution. In addition, due to the small numbers, the potential differences between restrictive anorexics and bulimic anorexics could not be considered as these two groups were combined in the data analysis. The overall association between core beliefs and perceived parental bonding observed in the anorexic group may not hold true in these diagnostic subgroups. Secondly, the motivation of the clinical groups was not controlled. This factor may have a direct effect on an eating-disordered individual's perception of herself and her parents. The observed differences in the parental bonding–core beliefs link between the anorexic and bulimic groups may be explained by the sheer fact that anorexics are usually pressurized by their parents into getting treatment whereas bulimics usually seek help of their own volition. Thirdly, other factors that might influence the scores on the PBI and the YSQ (such as severity/chronicity of symptoms and socio-demographic features) were not considered.

Despite its limitations, the present study supports a model where early family experience results in the development of unhealthy core beliefs, which in turn lead to eating psychopathology (Cooper, 1997; Leung et al., 1999, 2000; Waller et al., in press). However, a causal model explaining the development of eating disorders is likely to be multidimensional rather than a simple one. Future research, particularly using longitudinal designs, is needed to test this model further. Given the different patterns observed in anorexic and bulimic women in the present study, it would be valuable to explore what other potential factors (e.g. self-esteem, dissociation, etc.) might play a mediating role between perceived parental bonding behaviours and eating psychopathology. In addition, since perceived levels of parental bonding could explain the development of only a subset of core beliefs, especially in bulimic women, it would be useful to investigate other potential precipitating factors of such beliefs, given the existing evidence to suggest the presence of a wide range of unhealthy core beliefs in eating disordered individuals (e.g. Leung et al., 1999; Waller et al., in press). Finally, in order to test the specificity of the observed parental bonding–core beliefs link, it would be useful for future studies to include a non-eating disordered but otherwise psychologically disturbed comparison group.

Clinically, the current study provides insight into how perceived parental bonding might have different impacts on the cognitive content of anorexic and bulimic women. In other words, this research contributes to a better understanding of the potential origins of unhealthy core beliefs. If these findings can be replicated and extended by future research, such understanding should aid the challenging of such cognitions in schema-focused cognitive therapy (Layden, Newman, Freeman, & Morse, 1993; Padesky, 1994; Young, 1994). However, the utility of this treatment in eating disordered patients remains to be established through further clinical research.
References


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