Soc Psychiatry Psychiatr Epidemiol (2001) 36: 462 – 470

ORIGINAL PAPER

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Abnormal eating attitudes and behaviours and perceived parental control: a study of white British and British-Asian school girls

Accepted: 12 December 2000

Abstract *Background:* Previous studies have found significantly higher scores on the Eating Attitudes Test (EAT-26) which measures eating disorders among second-generation British-Asian schoolgirls in comparison to their White counterparts. Further, high EAT-26 scores (an indication of unhealthy eating attitudes and behaviours) are positively associated with parental overprotection scores on the Parental Bonding Instrument (PBI). This study aimed to replicate and extend previous findings, comparing British-Asian schoolgirls to White schoolgirls and consider 'intra-Asian' differences on the same measures, including factor scores. *Methods:* Participants completed three questionnaires: EAT-26, PBI and BSS (Body Satisfaction Scale). There were 168 participants: 46 White, 40 Indian, 44 Pakistani and 38 Bengali. *Results:* Previous findings were supported; the Asian scores were significantly higher than the White scores on the EAT-26 and PBI, but not the BSS. The Bengali sample had significantly higher EAT-26 total and 'oral control' scores than the other groups. There were no intra-Asian differences for the overprotection scores. PBI scores were not associated with EAT-26 scores. The BSS score was the only significant predictor of EAT scores, when entered into a regression along with PBI scores and the body mass index. *Conclusion:* Results demonstrated sociocultural factors in the development of eating disorders. The results suggest that there are important psychological differences between second-generation migrants from different countries on the Indian subcontinent. In line with previous studies, significant differences were found between the four ethnic groups, parenting styles, but these did not relate to actual eating disorders.

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Introduction

Eating disorders such as anorexia nervosa and bulimia nervosa are prevalent in young women in Western society (Mumford et al. 1991 a, b). Szmukler and Patton (1995) estimate that 3–5 % of young Western women suffer with significant symptoms of eating disorders. On average, women with bulimia nervosa present at around 25 years of age, whilst those with anorexia nervosa present at around 16 years of age.

However, such eating disorders are comparatively rare and little reported in non-Western cultures (Dolan 1991), and there is now considerable interest in the role of culture in eating disorders (Lake et al. 2000). In India, reliable data on these disorders are very scarce (Khandelwal et al. 1995). Bhadrinath (1990) and Khandelwal et al. (1995) pointed out that, because traditional Indian culture does not emphasise thinness as a mark of feminine beauty, Indian women would not be under the same cultural pressure to conform to a thin body ideal as their Western counterparts. In several non-Western cultures, near clinical obesity is often a mark of beauty (Furnham and Alibhai 1983; Furnham and Baguma 1994; Nasser 1988).

It had been implied, therefore, that Black and British-Asian women living in the West are not under the same cultural pressure to conform to these body shape ideals (Hsu 1987), because of the values (body ideal specification) of their original culture. Ogden and Elder (1998), indeed, proposed that being British-Asian could be a 'protective factor' against Western cultural pressure to be thin, as there is a lack of identification with predominantly White media role models.

It should be noted that the term 'Asian' in this literature, as in common British usage, is problematic. It has come to mean people from the Indian subcontinent rather than all people from the continent of Asia. In this study, British-Asian refers to only those from the subcontinent.

Eating disorders were, therefore, formerly regarded

as a 'Western malaise' (Hill and Bhatti 1995). However, in recent years there has been increasing awareness of eating disorders among ethnic minorities living in the West (Furnham and Husain 1999; Khandelwal et al. 1995). Button et al. (1998) pointed out that statistics concerning prevalence of eating disorders among different ethnic groups may reflect different perceptions, attitudes and health-seeking behaviours, rather than true cross-cultural behavioural differences. For example, it has been suggested that a greater sense of 'modesty' among South-Asian British women living in Britain makes them more reluctant to consult with a male doctor or admit any psychological disorders (Wright 1983).

Timini and Adams (1999), in a theoretical paper, examined eating disorders in young British-Asians in terms of 'colonizer/colonized dynamics'. They argue that British-Asian adolescent females may become the symbolic carriers of cultural values for their family, but that racism may lead to self (and family) hatred. This, they argue, may in turn lead to chaotic states of mind, which are associated with bulimia, or rigid, split and paranoid states of mind, which are associated with anorexia.

This study will focus on factors specific to eating disorders in second-generation British-Asian girls (from three countries on the Indian subcontinent) living in England: namely, acculturation, culture clash and perceived parental control.

Nearly all studies in this area have used the Eating Attitude Test (EAT), which is used to identify eating disturbances in non-clinical samples. It has been shown to be cross-culturally sensitive and robust, and has for 10 years been used in studies of British-Asian adolescents (Mumford et al. 1991 a, b).

As well as a total cut-off score, the questionnaire has been factor analysed, and three factors have emerged which have been used in various studies (Ahmad et al. 1994; Furnham and Husain 1999). However, it should be acknowledged that the factor structure has not been confirmed on the population used in this study, and it is therefore possible that the factor scores do not have the same meaning in the three different groups.

McCourt and Waller (1996) emphasize two specific problems facing second-generation ethnic minorities living in the West, in terms of two related processes. The first is acculturation, which occurs when the individual absorbs the norms of Western society, including its emphasis on the value of thinness. That is, the more acculturated and integrated the young British-Asian is in British values and life-style, the more vulnerable she is to eating disorders. The second process is culture clash, as when 'the eating psychopathology is the product of the intrapsychic and intrafamilial factors that result from *control issues* as the individual tries to engage in two cultures that are not consistent' (McCourt and Waller 1996). That is, because of overprotective parents, one of the few ways in which young girls can exercise some control over their parents is in a refusal to eat, particularly at social and religious occasions. Indeed, Evans and Le Grange (1995), in a study of parents of children with eating disorders, found that in half of the children with eating disorders, mothers reported having emotional difficulties, implying that parental values and pathology do impact on children's eating attitudes and behaviour. Various studies in Japan have demonstrated a clear connection between eating attitudes and attitudes toward the family (Berger et al. 1995; Mochizuki 1996).

Mumford et al. (1991 a) studied adolescent female students in Lahore, Pakistan, to examine evidence for the acculturation hypothesis. The findings were that girls with higher levels of abnormal eating attitudes were found to be those who were *most* exposed to Western culture. There was also evidence that this relationship was mediated through greater dissatisfaction with their body shape. An earlier study conducted by Mumford et al. (1991) also studied second-generation British-Asian schoolgirls (between 14 and 16 years old). This study attempted to measure how 'Western' and 'traditional' the British-Asian girls in the sample were, by examining attitudes to language, food and dress. They found that the most *traditional* girls had the most abnormal eating attitudes. Hill and Bhatti (1995) also found similar results. British-Asian second-generation teenagers from the most 'traditional' families inevitably experience most 'culture clash.' This conflict between two competing cultures often leads to great difficulties over control issues between parent and child (McCourt and Waller 1996). Bryant-Waugh and Lask (1991) described four cases of anorexia; all of these cases were linked to parental conflicts over cultural issues. They found that these sociocultural conflicts were greater when the family were more traditionally Asian. McCourt and Waller (1996) suggested that traditional families may lead to lower acculturation, and therefore greater potential for culture clash.

Evidence has suggested that issues around control and self-control, in particular, may be critical variables in the aetiology of eating disorders (Jeffrey 1987). Various studies examining second-generation British-Asian girls in Britain have focused on *perceived parental control* as a possible mediator for culture clash. Ahmad et al. (1994) administered the EAT-26 (Garner et al. 1982), the Body Satisfaction Scale (Slade et al. 1990) and the Parental Bonding Instrument (Parker et al. 1979) to White students and second-generation British-Asian 15-year-olds. They found that maternal overprotection in British-Asians was associated with the EAT-26 and its dieting and bulimia subscales. Ahmad et al. (1994) suggested that this 'conflict' between two cultures may lead to British-Asian girls attempting to have some kind of 'internal control', which cannot be influenced by their family, and which is likely to be associated with the onset of eating psychopathology. In this sense, then, sociocultural demands affect eating disorder psychopathology (Hill and Bhatti, 1995).

However, a common misconception concerning the literature studying the 'Asian effect' (McCourt and

Waller (1996) is the assumption that the category 'British-Asian' is one homogeneous group. McCourt and Waller (1996) state that, within the British-Asian population living in the West, there is 'an immense diversity of cultures' and it is an 'extreme oversimplification to attempt to attribute one profile of eating attitudes to everyone from this region.' Ineichen (1993) also suggested that British-Asians from the subcontinent should not be considered as a single population. There are differences between south Asian countries; the issue being how these intra-Asian differences relate to issues that might affect disordered eating attitudes. The concept of culture differences is complex, and depending on level of analysis, may have many different facets to it. One unique feature of this study is its examination of differences between British-Asians from three countries on the sub-continent.

One of the core differences between British-Asian groups is that of religion, though it is only one definer of culture among many and, though necessary, is certainly not sufficient. With both Pakistan and Bangladesh being Islamic countries, several authors have pointed to the Islamic religion in relation to the development of eating psychopathology (e. g. Ahmad et al. 1994). For many Muslim parents, the 'secular decadence of Western society' is the antithesis of Islam's core beliefs, and is viewed as both threatening and harmful to the family unit (Ahmad, 1993). Mumford et al. (1991 a, b) suggested that the perceived threat of Western culture may lead Asian (Muslim) parents to be more overprotective of their daughters, to shield them from these negative influences. However, several authors have stated that the problem is not religion per se, but the countries' interpretation of religion, which forms a component of that culture (Al-Hibri 1984; El-Saadawi 1982; Hussain 1984; Kandiyoti 1991). For example, although Pakistan and Bangladesh are both Muslim countries (Ahmad 1993), the 'culture' in Bangladesh is 'Bengali' (Kabeer 1991), with the Western influences of the US being more prominent (McCourt and Waller 1996), whereas Pakistan has Islam as its 'core' (Ahmad, 1993). Therefore, classification by religion may be 'crude,' as it neglects these differences (McCourt and Waller 1996).

Further, in Great Britain ethnicity is confounded by social class, which means some intra-Asian effects may be due to social class rather than cultural-religious factors. South Asian migrants to Britain are predominantly Indians, Pakistanis and Bengalis. The Indians were generally better off financially, coming from professional or mercantile backgrounds. Pakistani migrants were mainly from the impoverished rural areas in the Punjab and Kashmir. Bengalis were predominantly from the impoverished rural Sylhet region. The level of education is also inevitably different among migrants from the there British-Asian groups. Generally, Indians have an above-average education, with many of them being professionals, while Pakistanis and Bengalis are more likely to have fewer educational qualifications (McCourt and Waller 1996). Therefore, Pakistani and Bengali populations living in Great Britain may be more disadvantaged in terms of their level of education and occupation. Thus, it cannot be certain, when finding differences between these groups, as to whether they are primarily due to educational, religious or socio-economic circumstances, which are all confounded.

There are however 'common strands' linking British-Asians in England, which include religious devotion (Hitch 1983) and an emphasis on the importance of the family unit and community interests (McCourt and Waller 1996). Button et al. (1998) warn that researchers should exercise caution in generalising results across the British-Asian population; previous studies that found high rates of eating problems may reflect a *specific* British-Asian population, rather than British-Asians in general.

The aim of this study was to examine attitudes to eating and body satisfaction in second-generation Indian, Pakistani, Bengali and White teenage girls in Britain and to investigate the relationships between these attitudes and parental control. Two measures of eating psychopathology were used: the EAT-26 (Garner et al. 1982), which indicates unhealthy eating attitudes and behaviours, and the BSS (Slade et al. 1979), which indicates the rate of bodily dissatisfaction. The hypotheses were:

1. The (total) Asian sample would have higher EAT-26 scores and higher BSS scores in comparison to the White sample
2. The Bengali and Pakistani sample would have significantly higher EAT-26 and BSS scores than the Indian sample

The present study also investigated the role of perceived parental control as a 'carrier mechanism' (Ahmad et al. 1994) in the development of disordered eating attitudes in second-generation British-Asian schoolgirls. This was measured by the Parental Bonding Instrument (Parker et al. 1979). In line with previous studies (e. g. Ahmad et al. 1994), the third, fourth and fifth hypotheses were:

3. The British-Asian sample will have significantly higher overprotection scores than the White sample
4. The Pakistani and Bengali sample would yield higher PBI overprotection scores than the Indian sample
5. Higher levels of perceived parental control (as measured by the PBI) should explain greater levels of eating psychopathology (as measured by the EAT-26 and BSS) across all groups

Subjects and methods

Participants

There were 168 participants in total. All the participants were schoolgirls from two secondary schools and a youth group in London. They were selected because they had a very mixed population and were from catchment areas that represented the three groups of interest in this study. For the purpose of this study, 'British-Asian' was construed as those from the Indian subcontinent, i. e. Indian, Pakistani and Bengali. There were 122 British-Asians in total. The British-Asian par-

ticipants were all second-generation and of British nationality. For a participant to be classified as a particular ethnic origin (i. e. Indian/Pakistani/Bengali), both parents had to come from the same country. Further details are given in Tables 1 and 2.

In line with previous studies (Mumford et al. 1991; Ahmad et al. 1994; McCourt and Waller 1995), all participants were between 15 and 17 years of age in order to enable comparisons across studies. There was no significant difference between the ages of the four samples.

Table 2 shows the majority of the British-Asian sample were Muslim. All the Pakistani and Bengali sample were Muslim; the Indian sample, however, was composed of Muslims, Hindus and Sikhs. Seventy percent of the White sample were Christian.

Measures

Body Mass Index (BMI)

Weight and height were asked in order to calculate the body mass index (BMI, kg/m^2 for each participant. This is a self-report or estimated variance, since height and weight were not measured.

Eating Attitudes Test

The EAT-26 questionnaire (Garner et al. 1982) is a 26-item self-report measure that has been found to identify eating disturbances in non-clinical samples (Garner and Garfinkel 1980; Button and Whitehouse 1981; Thompson and Schwarz 1982). It has been used in many countries to measure eating disorders, including in Italy (Rather and Mesner 1993), Poland (Wlodarczyk-Bisaga and Dolan 1996) and Japan (Furukawa 1994), and there are even Arabic versions of the questionnaire (Al-Subane et al. 1996). A factor analysis of EAT-26 responses by Garner et al. (1982) indicated that the EAT-26 was applicable and valid in measuring disordered eating attitudes in Mumford and co-workers' (1991 a, b) sample of British-Asian schoolgirls. The EAT-26 contains sub-scales that reflect:

1. *Dieting:* this relates to the avoidance of fattening foods and a preoccupation with thinness (13 items)
2. *Bulimia and food preoccupation:* this relates to food thoughts and bulimia (6 items)
3. *Oral control:* this relates to displaying self-control around food and the perceived pressures from others to eat more and gain weight (7 items)

As previous studies (i. e. Ahmad et al. 1994; Furnham and Husain 1999) have examined both total and factor score results, the same was done here for comparative processes. Questions are presented in a six-point Likert scale, ranging from 'very strongly agree' to 'very strongly disagree.' Possible scores an the EAT-26 range from 0 to 78. Higher Scores indicate more unhealthy eating attitudes. The clinical cut-off point is 20.

Table 1 Total number (*N*) and mean (SD) age of each ethnic group

	N	Age
Indian	40	15.60 (0.71)
Pakistani	44	15.48 (0.51)
Bengali	38	15.47 (0.51)
White	46	15.63 (0.57)
Total	168	15.55 (0.58)

Table 2 Religious composition (%) of each ethnic group

	Muslim	Hindu	Sikh	Christian	Jewish
Indian	40	30	30		
Pakistani	100				
Bengali	100				
White[a]				70	20

[a] 10 % of the White sample did not indicate a religion

Body Satisfaction Scale (BSS)

The BSS (Slade et al. 1990) measures satisfaction/dissatisfaction with 16 body parts. The BSS is simple to both understand and complete (Ahmad et al. 1994). The rating system is a seven-point scale ranging from 'very satisfied' to 'very unsatisfied.' Higher scores indicate a higher level of bodily dissatisfaction.

Parental Bonding Instrument (PBI)

The PBI (Parker et al. 1979) contains 25 items assessing maternal and paternal care and overprotection. The care scale contains 12 items and overprotection scale contains 13 items. There are both positive and negative dimensions of both the care and the overprotection scale. For the care scale, the negative dimension contains questions concerning indifference, rejection and emotional coldness. The positive dimension contains questions concerning empathy, closeness and emotional warmth. The negative dimension of the overprotection scale consists of questions of control and overprotection. The positive dimension of the overprotection scale consists of autonomy and independence. The rating system is on a four-point scale, ranging from 'very like' to 'very unlike.' Higher scores on the scale indicate greater levels of overprotection/control and care.

Procedure

Once appropriate permissions had been ascertained, the questionnaires were administered by the second author in 1998 to female students who agreed to participate. The questionnaire was introduced as 'a study of eating attitudes and how you feel about yourself and others.' Most were completed in class time, though some were returned by post. Participants were assured that all information would be confidential and were encouraged to ask if there was anything they were unsure of. There was a 95 % response rate on completion of the questions. Participants were debriefed.

Results

Anthropometric variables

Table 3 shows the mean (SD) on the BMI for the White and British-Asian sample and the results of a one-way (independent groups) ANOVA, testing the difference between the means.

The White sample had a significantly higher BMI than their British-Asian counterparts [F (1,166) = 9.04, $P < 0.01$].

One-way ANOVAs were carried out on the BMI for the four samples, with Scheffe post-hoc comparisons. Table 4 shows that the Bengali sample had a significantly lower BMI than the other three samples [F (3,164) = 9.50, $P < 0.001$]. Indeed their scores are almost at the cut-off point for the technical difficulties of anorexia nervosa. Because of this difference, BMI was systematically co-varied out on all further analyses. A Chi-square test on the social class differences between the four groups yielded no significant differences: $\chi^2 = 11.30$, $df = 9$, $P = 0.26$.

Eating psychopathology: EAT-26 and BSS

One-way ANOVAs were also carried out on the total EAT, the three separate factors and the BSS. Tables 5 and 6 show the results for the measures of eating psychopathology: EAT-26 and BSS for the White and British-Asian sample.

The hypothesis that British-Asians would have significantly higher levels of disordered eating attitudes than the White group was borne out for the total EAT score [F (1,166) = 7.53, $P < 0.01$]; the British-Asian sample had a significantly higher *total* EAT score than the White sample. However, of the three factors, only factor 3, oral control, revealed a significant result [F (1,166) = 11.02, $P < 0.01$], with British-Asians scoring significantly higher than the White group. Contrary to the second part of the first hypothesis, there was no significant difference between the British-Asian and White sample on the BSS.

From Table 6, it can be seen that the total EAT scores of the present study are in line with two previous studies which have also obtained higher scores for their British-Asian sample than their White sample. For the present study, scores for both the White sample and British-Asians are slightly higher than previous studies, although the standard deviation is smaller.

The greater level of bulimic attitudes (factor 2) found in British-Asians by Ahmad et al. (1994) was not supported by the present study. This study found significantly higher oral control (factor 3) attitudes among the British-Asian sample. Scores for both British-Asians and Whites on all three factors, however, were higher in the present study. However, as noted before, because the factor analysis has not been done on this group, it cannot be certain whether the factor has the same meaning for all four groups.

To investigate the intra-Asian group differences for the measures of eating psychopathology, the British-Asian sample was divided into three groups: Indian, Pakistani and Bengali. One-way ANOVAs with Scheffe post-hoc comparisons were run on the total EAT scores, the three separate factors and also the BSS.

The results shown in Table 7 partially support the second hypothesis, that the Pakistani and Bengali sample will have higher EAT-26 scores than the Indian sample. The Bengali sample emerged as having significantly higher total EAT scores [F (3,164) = 16.65, $P < 0.01$]. The Scheffe post-hoc comparison revealed that the Bengali

Table 3 Mean (SD) body mass index (BMI; kg/m^2) for the White and British-Asian sample

	White	British-Asian	*F*-Value
BMI	20.06 (3.50)	19.08 (2.66)	9.04**

* $P < 0.05$; ** $P < 0.01$

Table 4 Mean (SD) BMI for the Indian, Pakistani, Bengali and White sample

	Indian	Pakistani	Bengali	White	*F*-value
BMI	20.32 (2.83) a	19.51 (2.50) a	17.60 (1.90) b	20.60 (3.50) a	9.50***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$
Scheffe post-hoc comparison revealed that group (*b*) was significantly different ($P < 0.05$) from the other groups (*a*).

Table 5 Total scores on the Eating Attitudes Test (EAT-26) obtained in this and previous studies: mean (SD) values

	White	British-Asian	*F*-value
Mumford et al. (1991)	7.7 (8.0)	10.6 (9.0)	?***
Ahmad et al. (1994)	8.91 (7.76)	10.5 (8.1)	1.76
McCourt and Waller (1995)	7.07 (7.99)	10.8 (9.04)	16.6***
Furnham and Husain (1999)	9.32 (9.49)	9.30 (8.07)	0.00
Present study	10.48 (4.02)	12.71 (4.94)	7.53**

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Table 6 Mean (SD) EAT factor scores and Body Satisfaction Scale (BSS) scores obtained in this and previous studies

	White	British-Asian	*F*-value
Ahmad et al. (1994)			
Factor 1: Dieting	5.48 (5.73)	6.26 (5.88)	0.78
Factor 2: Bulimia	0.57 (1.14)	1.16 (1.73)	5.35*
Factor 3: Oral control	2.87 (3.04)	3.01 (3.09)	0.10
BSS	38.6 (11.5)	35.8 (13.0)	2.29
Furnham and Husain (1999)			
Factor 1: Dieting	6.12 (6.21)	6.00 (6.14)	0.01
Factor 2: Bulimia	1.71 (3.00)	1.13 (1.60)	1.62
Factor 3: Oral control	1.49 (1.97)	2.04 (2.43)	2.09
Present study			
Factor 1: Dieting	6.83 (2.88)	7.91 (3.78)	3.08
Factor 2: Bulimia	2.00 (1.35)	1.70 (1.00)	1.24
Factor 3: Oral control	2.95 (2.20)	4.68 (2.93)	11.02**
BSS	47.65 (13.12)	52.27 (15.66)	3.16*

* $P < 0.05$; ** $P < 0.01$

Table 7 Mean (SD) EAT and BSS scores for the four ethnic groups

	Indian	Pakistani	Bengali	White	*F*-value
EAT					
Total	10.85 (3.56) *a*	11.27 (4.80) *a*	16.34 (4.45) *b*	10.48 (4.02) *a*	16.65**
Factor 1: Diet	6.68 (2.88) *a*	6.93 (3.06) *a*	10.29* (4.27) *b*	6.85 (2.88) *a*	10.93**
Factor 2: Bulimia	1.74 (1.20)	1.80 (0.89)	2.00 (1.35)	2.00 (1.35)	0.71
Factor 3: Oral control	3.75 (2.23) *a*	3.13 (3.01) *a*	4.33 (3.48) *b*	2.95 (2.20) *a*	7.74**
BSS	51.18 (13.47) *a*	57.09 (17.77) *b*	47.65 (13.12) *a*	47.65 (13.12) *a*	3.88*

* $P < 0.05$; ** $P < 0.01$
Scheffe post-hoc comparison revealed that group (*b*) was significantly different ($P < 0.05$) from the other groups (*a*).

sample had significantly higher scores than the other two British-Asian groups, Indians and Pakistanis, and also than the White sample. This was also true of factor 1 (dieting): the Bengali sample had significantly higher scores [F (3,165) = 10.93, $P < 0.01$]. The Scheffe post-hoc comparison showed that, at $P < 0.05$, the Bengali sample scored significantly higher than the other three groups. For factor 2 (bulimia), differences in scores were non significant. Factor 3 (oral control) showed a similar pattern to the first two results, the Bengali sample again scoring significantly higher [F (3,142) = 7.74, $P < 0.01$]; the Scheffe post-hoc comparison showed that Bengalis had a significantly higher score than Indians and Whites (but not Pakistanis).

The BSS Scores showed that there were significant differences between the four groups [F (3,164) = 3.88, $P < 0.05$]. The Scheffe post-hoc comparison revealed that Pakistanis scored significantly higher than the Bengali and White sample.

Perceived Parental Control: PBI

One-way ANOVAs were run on the four PBI sub-scales for the White and British-Asian Samples.

Table 8 shows that the third hypothesis was clearly supported; British-Asians rated their mothers as significantly more overprotective than their White counterparts [F (1,166) = 30.06, $P < 0.001$]. British-Asians also rated their father as more overprotective [F (1,166) = 25.99, $P < 0.001$]. The data also show that, on the care scales, the White Sample rated their mothers as significantly more caring than British-Asians [F (1,166) = 4.68, $P < 0.05$] and they also rated their fathers as significantly more caring [F (1,166) = 13.00, $P < 0.0001$].

The results of the present study are consistent with previous findings. All three previous studies shown in Table 9 found significantly higher maternal and paternal overprotection scores for their British-Asian sample. British-Asian paternal overprotection scores for the present study were higher than for previous studies and, unlike the other two studies, the paternal overprotection scores were higher than the maternal overprotection scores.

To investigate whether a *specific* British-Asian sample would yield a significantly higher level of perceived parental control, the British-Asian sample was again divided into three groups: Indian, Pakistani and Bengali. One-way ANOVAs with Scheffe post-hoc comparisons were run on the four PBI subscales for the four groups.

Table 8 Mean (SD) Parental Bonding Instrument (PBI) scores for the White and British-Asian sample

	White	British-Asian	*F*-value
Maternal care	25.74 (5.50)	23.70 (5.41)	4.68*
Paternal care	26.63 (4.73)	23.74 (5.19)	13.00***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

Table 9 Mean (SD) PBI overprotection scores obtained in this and previous studies

	White	British-Asian	*F*-value
Ahmad et al. (1994)			
Maternal overprotection	10.8 (5.98)	15.2 (7.17)	20.3***
Paternal overprotection	11.3 (7.49)	14.0 (6.11)	5.96*
McCourt and Waller (1995)			
Maternal overprotection	12.2 (7.08)	16.6 (7.17)	31.1***
Paternal overprotection	11.9 (7.43)	14.6 (6.74)	11.0***
Furnham and Husain (1999)			
Maternal overprotection	10.73 (6.58)	16.18 (7.78)	19.28***
Paternal overprotection	9.20 (6.69)	4.75 (8.12)	19.05
Present study			
Maternal overprotection	11.59 (3.59)	16.67 (5.88)	30.06****
Paternal overprotection	12.57 (3.81)	17.43 (6.03)	25.99****

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$; **** $P < 0.0001$

Table 10 PBI scores for the four ethnic groups

	Indian	Pakistani	Bengali	White	*F*-value
Maternal care	25.98 (6.28) *a*	22.09 (4.23) *b*	23.18 (4.94) *b*	23.74 (5.50) *b*	5.62**
Paternal care	23.50 (5.76) *a*	23.70 (5.35) *a*	23.71 (4.87) *a*	26.63 (4.73) *b*	3.73*
Maternal overprotection	17.75 (6.74) *a*	15.91 (5.38) *a*	16.42 (5.45) *a*	11.59 (3.59) *b*	10.92***
Paternal overprotection	17.02 (6.75) *a*	17.68 (6.00) *a*	17.58 (5.37) *a*	12.57 (3.81) *b*	8.69***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$
Scheffe post-hoc comparison revealed that group (*b*) was significantly different ($P < 0.05$) from the other groups (*a*).

The results shown in Table 10 do not support the fourth hypothesis, that the Pakistani and Bengali sample would yield higher PBI overprotection scores than the Indian sample. The White sample had significantly lower ratings for parental overprotection than the three British-Asian samples; however, there were no significant differences between the groups of British-Asians. For the maternal care scale, Scheffe post-hoc comparisons show that the Pakistani sample emerged as having significantly lower ratings on the maternal care scale than the Indian and White samples [F (3,164) = 5.62, $P < 0.01$].

Associations between EAT-26 and PBI overprotection scores

A multiple regression analysis was also conducted on the data (Table 11), with EAT as the dependent variable and the following as the predictors: the PBI scales, BMI and BSS. BSS was found to be the only significant predictor [$R^2 = 0.15$: F (6,61) = 4.74, $P < 0.001$].

To assess the association between the PBI, EAT-26 and BSS scores, without the effects of ethnicity and BMI, partial correlations between the EAT-26, BSS and PBI

Table 11 Regression table

	β	*T*-value
Maternal care	0.28	0.31
Paternal care	0.13	1.44
Maternal overprotection	0.11	1.01
Paternal overprotection	0.10	0.87
BMI	–0.13	–1.78
BSS	0.30	3.92***

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$

scores were conducted, partialling out ethnicity and BMI. There were two significant correlations: BSS was significantly negatively correlated with maternal care ($r = -0.35$, $P < 0.01$) and BSS was also significantly correlated with paternal care ($r = -0.25$, $P < 0.05$). Therefore, the final hypothesis that the PBI overprotection scores would be associated with EAT-26 scores and BSS across all groups was not supported.

Discussion

The present study both replicated and extended the recent studies conducted in this field. The first hypothesis, that the British-Asian Sample would have higher EAT-26 scores than their White counterparts, was supported by the present findings. In line with the studies by Mumford et al. (1991a, b) and McCourt and Waller (1995), but not that of Furnham and Husain (1999), the total EAT-26 score was found to be significantly higher for the total British-Asian sample. Previous findings of significantly greater levels of bulimic attitude (factor 2) among British-Asians found by Mumford et al. (1991) and Ahmad et al. (1994) were not, however, supported by the present study. Only oral control attitudes (factor 3) were significant, with the British-Asian scores being higher than the White scores. However, as noted before, these data must be treated with caution until a replication of the factor structure has been done on a sample comparable to the one used here. It is possible the totalled items on these factors have a different meaning for the different sub-samples used in this study.

Although for the BSS, the British-Asians' level of bodily dissatisfaction was higher than the White sample, this was not significant. Ahmad et al. (1994) also found no significant difference between British-Asians and Whites, although British-Asians had lower scores on the BSS than the White sample.

Focusing on the intra-Asian differences, the second hypothesis was that the Pakistani and Bengali sample would have significantly higher EAT-26 and BSS scores than the Indian sample. This hypothesis was partially supported, as only the Bengali sample emerged as having significantly higher total EAT and factor 1 (dieting) scores than the other three groups. The Bengali sample also yielded significantly higher scores for factor 3 (oral control) than the Indian and White samples (but not the Pakistani). For the BSS, the Pakistani sample scored significantly higher than the Bengali and White sample.

The third hypothesis, that the British-Asian sample will have significantly higher overprotection scores than their White counterparts, was confirmed. The British-Asian sample, similar to previous findings (Ahmad et al. 1994; McCourt and Waller 1995), were significantly higher in their ratings of overprotectiveness for both mother and father. An unexpected finding was that on the maternal and paternal care scales British-Asian sample scored significantly lower than the White sample. There were no significant differences between the three British-Asian groups on the parental overprotection scale. Therefore, the hypothesis that the Pakistani and Bengali sample will yield higher PBI overprotection scores than the Indian sample was not supported. However, for the maternal care scale, Pakistanis had significantly lower scores than the Indian and White samples.

The final hypothesis was that the PBI overprotection scores would be associated with the EAT-26 across all groups. This was not supported. BSS was found in the regression to be the only significant predictor of EAT-26, accounting for 15 % of the variance. BSS was also found to be significantly negatively correlated with maternal and paternal care. This may account for the finding that the Pakistani sample had a significantly greater bodily dissatisfaction (BSS) than the Bengalis and White samples, and lower perception of maternal care than the Indian and White samples. This is a surprising finding, as it was expected that the PBI overprotection scores would be positively correlated with EAT scores. To this extent, the results suggest the role of parental care and overprotection may not play as important a role in the aetiology of eating disorders as originally suggested.

Interestingly, the BMI scores did not predict EAT scores, whereas the subjective BSS did. Furthermore, none of the three EAT factor scores correlated with BMI. It appears that general satisfaction with body shape, however that occurs, is the most proximal predictor of eating disorders in young girls.

Within the British-Asian group, the Bengali sample was found to have more disordered eating attitudes as measured by the EAT-26. They also had a very low BMI. Although it may have been suggested that social class differences may contribute to this, in this present study, there were no established social class differences between the four groups. All of the Bengali sample were Muslim; Ahmad (1994) had suggested that the Islamic religion may be partly associated with the development of eating psychopathology, though the psychological mechanism has not been established. The Pakistani sample were also 100 % Muslim; hence, this religious factor cannot be a necessary and sufficient explanation. It has been suggested that it is the countries' interpretation of religion that forms a part of that culture (Al-Hibri 1982; El-Saadawi 1982; Hussain 1984; Kandiyoti 1991). Kabeer (1991) has stated that, although a Muslim state, culture in Bangladesh is 'Bengali' whereas Pakistan has Islam as its core (Ahmad 1993). Perhaps Bengali

culture contributes in certain individuals to disordered eating attitudes, though this remains pure speculation; the psychological processes are not properly explicated. As far as social class is concerned, it should be noted that the Coronary Prevention Group (1986) stated that many self-employed South British-Asians who are occupationally classified into higher classes have a lifestyle more akin to the lower classes, which is not the case for the native White group, where life-styles are observably different. However, the influences separately and together of education, social class and religion are difficult to unpick.

One limitation of the present study was that, unlike the study by Mumford et al. (1991 b), the 'traditional' and 'western' orientation of the participants were not measured. It may be possible, but unlikely, that the Bengali sample were very 'westernised' and thus, according to the acculturation hypothesis, may have adopted thinness as their cultural norm, which in turn may have led to higher levels of abnormal eating attitudes, as was found by Mumford et al. (1991 b). Conversely, the Bengali sample may have consisted of the most 'traditional' girls, who scored higher on the EAT due in part to culture clash between the two competing cultures (e. g. Mumford et al. 1991). Both of these issues are unlikely, as the girls were drawn from the same schools in the same catchment area. Nevertheless, given the importance of this variable, it is to be recommended that it is assessed in future work.

However, the British-Asian sample as a whole yielded significantly higher EAT total scores than the White sample. There may be, therefore, factors common to the British-Asian sample that are associated with higher levels of disordered eating attitudes in comparison to their White counterparts. A possible explanation contributing toward higher oral control scores may be due to the rich diets common within the British-Asian culture, which may lead to certain girls controlling their intake to prevent weight gain or maintain current weight. The oral control factor is also defined as perceived pressure from others to eat more and gain weight. It has been suggested that British-Asian women are not under the same cultural pressure to conform to a thin body shape ideal due to the values of their original culture (Hsu 1987). This may be true for first generation British-Asian parents, who impose their standards of a larger body shape ideal onto their daughters, and thus encourage them to eat more/gain weight. The second generation, due in part to acculturation, may have adopted a much thinner body shape ideal as their cultural norm, and therefore perceive their parents as pressuring them to gain weight. However, as noted above, it is important to replicate the factor structure and the subjective meaning of the items before attempting further work using EAT sub-scale scores.

The PBI fndings suggest that subcontinental British-Asians are similar in their overprotective attitudes toward their daughters. The common strands that link British-Asians, e. g. religion (Hitch 1983) and the importance of the family unit (McCourt and Waller 1996), may be common factors that result in British-Asian parents attempting to exert more control over their daughters' lives in comparison to White parents. Islam as a religion may not specifically lead to greater parental overprotection, as suggested by Ahmad et al. (1994), but it may be the actual emphasis generally on religion and the moral codes and social moves it dictates that is of importance to British-Asian culture. Although protecting their daughters against Western influences may contribute to the reason for British-Asian parents in general being more overprotective, there are also likely to be other reasons, e. g. their own pattern of upbringing which may dictate that daughters are controlled to a greater extent than sons. The culture clash hypothesis may also contribute to the notion that conflict between two competing cultures may give rise to difficulties over control between parent and child, which may result in the parent exerting more control. The differences between parent and child in how they have been raised may lead to culture clash, as the British-Asian parents impose their standards of a different culture as well as time on their child. However, the second generation of British-Asians are likely to have more in common with their children, in which case culture clash may decrease as the successive generations would be more integrated into Western culture.

The age of the participants must be taken into account. The participants in the present study, in line with previous studies in this field, were between 15 and 17 years of age. It may be possible that British-Asian parents are more overprotective of their daughters during the secondary school years, and as their daughters grow older and more independent, the overprotectiveness decreases. Conversely, as the daughters grow older, British-Asian parents may actually increase their control for a number of reasons, including the marriage market dictating that British-Asian girls should not have lived outside of the home. Further studies (perhaps longitudinal) should compare PBI overprotection scores throughout the British-Asian participants' teenage years.

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