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Bulimic disorders and sociocentric values in north India

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Abstract *Background*: Previous studies have shown low rates of eating disorders in some developing countries. We set out to investigate the prevalence of bulimia in an all-female college population in north India and relate it to sociocentrism of the culture. *Methods*: A total of 504 students in an all-girls private college in an industrial town in north India completed the Hindi translation of the Bulimia Investigatory Test, Edinburgh (BITE). A random sample of 50 students, irrespective of their scores, were interviewed using the DSM-III-R interview for eating disorders; they were also asked about qualitative aspects of their relationship with the family and their own views of their identity. *Results*: There was no effect of age, social class, religion or height on the distribution of BITE scores. Three key factors emerged; these were related to the constructs of compulsive activity, impulsivity/sociocentric avoidance and associated attitudinal responses and depressive thinking with features of helplessness and feelings of failure. Acculturation was not related to BITE scores. Virtually all interviewees had sociocentric views of theirselves. *Conclusions*: Sociocentrism and impulsivity account for a significant amount of the variance. The role of sociocentrism in influencing patterns of eating deserves to be studied further.

Introduction

The eating disorders bulimia nervosa and anorexia nervosa are considered to be a consequence of contemporary social pressures on young women to be both slimmer than women in other societies as well as Western women of earlier periods (Littlewood 1995). Hence, these conditions and others such as obesity are seen as culture-bound syndromes of the West (Rittenbaugh 1982), although Katzman and Lee (1997) have criticised this concept. Eating disorders are considered to be rare in non-Western countries. However, there are few epidemiological studies of eating disorders from the less developed and non-industrialised countries (King and Bhugra 1989; Mumford et al. 1992; Khandelwal and Saxena 1991; Lee 1991). Case reports and descriptive studies of eating disorders are not uncommon, indicating that such disorders exist, but their prevalence in the general population is often not known (Russell 1979; Palmer 1979; Fairburn 1983). Reports of high rates of bulimia nervosa among ethnic minorities in the UK (Mumford and Whitehouse 1988; Nasser 1986) suggest that these conditions may be culturally determined and that they are influenced by responses to social and environmental components of the cultural milieu. Studies in non-Western settings (Mumford et al. 1992; Khandelwal and Saxena 1991; Lee 1991; Lee et al. 1996, 1997) that used the Eating Attitudes Test (EAT) show that the factor structure of the responses is unaffected by culture, although difficulties in translating cultural concepts have been noted (King and Bhugra 1989).

Rates of bulimia nervosa have varied between 4% and 13.0% in population samples (Pyle et al. 1983; Halmi et al. 1980). If clinical records are analysed or cases collected in hospitals, high rates emerge (Okasha et al. 1977; Buhrich 1981). Ahmad et al. (1994) reported that perceived maternal control was a significant cause for greater levels of bulimic attitudes in Asian school girls. Similar findings were reported from a Japanese sample (Furukawa 1994). The conflict between the society's indigenous culture and the imported cultures maximises the impact on vulnerable families and individuals.

The distinction of the collective in the form of community, family, caste or gender gives way to a more

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egocentric, self-determined and self-driven identity, with resultant internalisation of social constraints into the embodied self (Bordo 1993; Turner 1992). All these usually serve to deliver optimal functioning in the external world, whilst not compromising personal desires. However, such a dichotomy does lend itself to ready conceptualisation of the key differences of interpersonal relatedness and identity development between industrialised and non-industrialised cultural environments. The measurement of such concepts is fraught with difficulties.

Firstly, we wanted to estimate the prevalence of bulimic disorders in a group of female college students – an age group that carries a high risk of eating disorders. Secondly we also set out to investigate the relationship between sociocentrism, egocentrism and eating disorders.

To the best of our knowledge no previous study in the field of eating disorders has investigated the sociocentrism or egocentrism of the society in question.

Subjects and methods

Sample

The study was carried out in an industrial town in the foothills of the Himalayas in north India. With a population of around 250,000, it is a district town with several institutions for higher education. The teaching staff in one of the private all-girls colleges were approached. They agreed for the first author to distribute the questionnaires to the senior girls. The total population of the college is around 1800 students, ranging from 15 to 23 years of age. Each class has several "sections", with student numbers varying from 30 to 55 in each section.

Randomly chosen classes on four different days of the week were approached through their teachers and the questionnaires distributed to the classes. The first author was available to answer any questions. The questionnaires had been marked randomly on a one in ten basis and these respondents were asked to stay back or come back later for an interview with the first author. The questionnaires were collected when the students finished their responses within the same teaching period.

Questionnaires

The Bulimia Investigatory Test, Edinburgh (BITE; Henderson and Freeman 1987) was used. It was independently translated into Hindi by two bilingual psychiatrists. These translations were then given to two bilingual graduates living in the same culture and society, who translated these back into English. Subsequently, agreement was reached among the four individuals on the exact Hindi wording of the questionnaire. The English version of the questionnaire had been previously validated on another school population in India. In addition, questions on sociodemographic profile were added along with questions on cultural patterns of behaviour, as previously used by El-Islam et al. (1985). These questions covered cultural behaviours, such as degree of comfort in the culture, languages spoken, preferences for certain foods and entertainment as well as dress.

Interview

One-tenth of all respondents (randomly chosen), irrespective of their scores on the questionnaires, were interviewed. Three sets of interviews were carried out. Firstly, they were given the DSM-III-R interview for eating disorders. Secondly, they were asked about their perceptions of their own identity as an individual, how they would see themselves in relationship to the family and the family members and also how they describe themselves to others. These responses were recorded verbatim to explore the concepts of ego- and sociocentrism. Thirdly, they were asked to comment on the questionnaire and identify any problems they may have come across in responding to it.

Socio-demographics and body measurements

Demographic information included age, religion and social class according to the father's occupation. Height, weight, ideal weight, greatest and least weight were recorded. Body Mass Index (BMI) was calculated: weight (kg)/height (m). A Body Image Index (BII) was calculated: actual weight (kg)/ideal weight (kg). The maximum weight change was calculated as the difference between the maximum weight ever and the minimum weight ever.

The BITE

The BITE instrument has a symptom severity scale (six items) and a symptom profile scale (26 items about eating behaviour and attitudes – see Appendix). The BITE has a scoring system that designates caseness to those scoring 20 or above. This indicates a highly disordered eating pattern. Scores between 10 and 19 indicate an unusual eating pattern, but not to the extent of amounting to a disorder requiring treatment. Those scoring between 15 and 19 are regarded as a potential sub-clinical binge eaters.

Eating attitudes and behaviours

There are additional questions in the BITE on behaviours associated with dieting such as vomiting, excessive exercise and the use of diuretics or pills to assist in weight control. Specific questions address whether the individuals regard themselves as over- or underweight (5-item Likert scale from very overweight to very underweight), the regularity of menstruation (yes/no), whether they have consulted anyone about food intake (yes/no), whether they have suffered with an eating disorder (yes/no), whether they belong to a swimming club (yes/no), whether they are satisfied with their shape (yes/no), whether their weight fluctuates monthly (yes/no) and whether they have ever stopped going out because of their diet or appearance (yes/no).

Acculturation

We assessed acculturation by identifying the degree to which individuals speak with family and friends, read and listen to music and think in English as opposed to their first (local) language. These were developed and validated by El-Islam et al. (1985). An additional question asked how comfortable the respondents felt with the daily Indian cultural environment in which they lived, using a 10-cm Likert scale ranging from not at all comfortable (0) to extremely comfortable (10).

Statistical analysis

The first aim of the study was to examine rates of bulimic disorder in north India in non-clinical populations and in studies examining the validity of the BITE. Scores equal to or above 20 (on severity) have been equated in previous studies with probable case status. However, as in our sample only two individuals scored over the cut-off of 19, and in view of the absence of data demonstrating the validity of the Hindi instrument in Indian populations, we decided to examine the BITE score in quartiles for ascertaining the prevalence. The distribution of demographic, attitudinal and behavioural symptoms across quartiles of BITE scores enables the identification

of those variables that are associated with the more morbid scores, whilst not neglecting the possibility that lower scores may also be associated with different syndromal categories not readily understood according to operationalised DSM or ICD eating disorder diagnoses, upon which the BITE was based. This assumes that eating pattern variations are continuously distributed and that disorder and non-disorder are actually extremes of a continuum of eating behaviours.

The means and standard deviations were calculated for continuous normally distributed variables for each of the BITE score quartiles. A one-way analysis of variance test examined whether the continuous variables were related to quartiles of the BITE score. For categorical variables, a chi-squared test was applied to examine the association of the variable with quartiles of the BITE score. Finally, a factor analysis was conducted to identify which items of the BITE might together explain the pattern of scores. A varimax rotation was undertaken to maximise fit. Data were entered into the SPSS statistical package and statistical analysis was carried out using Stata 4.0. The second aim of the study was achieved through analysis of qualitative data only.

Results

A total of 504 girls completed the questionnaires. Only two subjects scored over the cut-off point, to give a point prevalence of 0.4%. Fifty girls were interviewed. There were no refusers in responding to the questionnaires or interviews. However, Severity scale data on the BITE were only complete for 86 people, and no meaningful analysis could therefore be undertaken; these data are not therefore presented or discussed further. Demographic data are presented in Tables 1 and 2. There was no effect of age, social class, religion, age at menarche or height on the distribution of BITE scores. Body measurement data and their association with BITE quartiles are presented in Table 1.

Those in the fourth BITE quartile were heavier than those in the first quartile. BMI increases from the first to the fourth BITE quartile; the mean BMI in the first BITE quartile is higher than that in the second quartile, suggesting that this relationship holds for higher BITE scores. The maximum amount of weight change is also associated with the higher BITE score quartiles. The body image index (BII) increases from lower to higher BITE quartiles, indicating that a desire to lose weight is associated with more bulimic symptoms. Such a hypothesis is supported by the findings (Table 2) that fewer subjects felt their weight to be normal if they had a higher BITE score. Feeling overweight or very overweight is also more common amongst subjects with higher BITE scores. Furthermore, the higher BITE scoring subjects were least likely to be satisfied with their shape.

Higher BITE scoring subjects were also more likely to avoid going out because of their diet, their weight more often fluctuated each month and they had more often sought advice and consulted someone about their food intake. Of the dietary behaviours, none were associated with higher BITE scores (Table 3). The associated aim to identify any social and cultural factors was achieved by using the acculturation scale. Of the acculturation variables, none were associated with higher BITE scores (Table 4). However, the degree of comfort with the daily cultural environment (Indian vs English) was diminished amongst subjects who fell within the highest BITE score quartile.

Factor analysis of the BITE items revealed 15 key factors, but only the first three factors were meaningfully retained after examination of the screen plot [eigen values: (F1 = 2.76, F2 = 1.60, F3 = 0.95)]. Factor 1 explains 43.8% of the variance, and factors 2 and 3 explain 25.5% and 15.1% respectively. A varimax rotation was applied and those items with loadings of at least 0.3 are reported (Table 5; Appendix). F1 before rotation became F2 after rotation. F2 before rotation became F1 after it. Hence, the three factors appear to relate to constructs of compulsive activity, impulsivity, sociocentric avoidance and associated attitudinal responses and depressive thinking, with features of helplessness and feelings of failure.

Table 1 Parametric analyses of the relationship between demographic/attitudinal variables and BITE (Bulimia Investigatory Test, Edinburgh) symptom score quartiles

	BITE symptom score as quartile				One-way Anova		
	1st (score 0–7) $n = 137$	2nd (score 8–9) $n = 150$	3rd (score 10–11) $n = 111$	4th (score 12–15) $n = 106$	*F*	*df*	*P*
Raw BITE scores:mean (SD)	6.06 (0.99)	8.47 (0.5)	10.36 (0.48)	13.95 (0.4)			
Summary statistics:range	3–7	8–9	10–11	12–28			
Age:mean (SD)	17.99 (1.84)	18.15 (1.71)	18.16 (1.68)	18.20 (1.70)	0.35	3,500	0.79
Height:mean (SD)	154.97 (5.86)	155.38 (5.80)	154.64 (7.55)	16.41 (82.48)	0.29	3,494	0.83
Weight:mean (SD)	46.30 (5.71)	44.90 (6.72)	46.72 (6.72)	47.5 (8.48)	3.07	3,476	0.03*
Body Mass Index:mean (SD)	19.31 (2.31)	18.62 (2.6)	19.76 (4.36)	19.93 (3.93)	3.8	3,471	0.01*
Body image index	1.02 (0.98)	0.99 (0.12)	1.03 (0.12)	1.07 (0.22)	5.91	3,410	0.0006*
Maximum-minimum weight difference:mean (SD)	4.84 (3.75)	5.18 (3.99)	6.51 (4.58)	6 (5.05)	2.77	3.342	0.04*
Age at menarche:mean (SD)	14 (0.91)	13.97 (1.2)	13.71 (1.18)	13.85 (1.13)	0.29	3,494	0.83
Degree of comfort you feel living in this country[a]:mean (SD)	9.63 (1.29)	9.25 (1.77)	9 (2.10)	8.94 (2.14)	3.58	3,494	0.01*

[a] 1–10:1 = not at all comfortable; 10 = extremely comfortable

* Significant

Table 2 Non-parametric analysis of demographic and attitudinal variables and their association with BITE symptom score quartiles

	BITE symptom score quartiles				χ^2	*df*	*P*
	1st	2nd	3rd	4th			
Social class based on father's occupation							
I	18	24	13	9	12.36	18	0.83
II	37	42	32	31			
III	50	55	48	41			
IV	22	15	11	17			
V	5	4	1	2			
Retired	2	5	2	3			
Died	1	2	1	0			
Religion							
Hindu	121	136	92	94	7.0	9	0.64
Sikh	15	12	14	7			
Muslim	1	0	2	1			
Christian	0	1	1	1			
Regular menses							
Yes	125	135	102	94	5.21	3	0.16
No	4	11	7	11			
Consulted anyone about food intake (%)							
Yes	6 (4.38)	9 (6.12)	13 (11.82)	17 (16.19)	12.73	3	0.005*
No	131	138	97	88			
Suffered with eating disorder							
Yes	8	14	14	11	4.18	3	0.24
No	125	124	89	81			
Belong to slimming club							
Yes	6	6	4	3	0.39	3	0.94
No	131	144	106	101			
Do you feel overweight? (%)							
Very under wt	2 (1.5)	4 (2.67)	3 (2.73)	3 (2.86)	34.16	12	0.001*
Slightly under wt	14 (10.3)	25 (16.67)	13 (11.82)	12 (11.43)			
Normal	104 (78.20)	98 (65.33)	68 (61.82)	59 (56.19)			
Overweight	11 (8.27)	20 (13.33)	24 (21.82)	20 (19.05)			
Very overweight	2 (1.5)	3 (2)	2 (1.82)	11 (10.48)			
Satisfied with shape (%)							
Yes	106 (79.10)	93 (62.42)	68 (61.82)	55 (51.89)	47.33	12	< 0.001*
No	28	56	42	51			
Stopped going out because of diet							
Never	120 (95.24)	131 (92.25)	94 (88.68)	75 (75.76)	28.45	9	0.001*
Once in a while	5 (3.97)	10 (7.04)	10 (9.43)	20 (20.20)			
Often	1 (0.79)	1 (0.7)	2 (1.89)	2 (2.02)			
Very frequently	0	0	0	2 (2.02)			
Weight fluctuates monthly (%)							
Yes	1 (0.8)	0	4 (3.96)	13 (13.98)	35.58	3	< 0.001*
No	124	137	97	80			

* Significant differences

Interviews

Fifty interviews were completed. No-one scored on the DSM-III-R interview as having an eating disorder. Hence only qualitative data are presented. Seven subjects were Sikhs and the rest Hindu. No Muslim students were interviewed. This broadly reflects the total sample as well as the local population.

The interviewees were aged between 14 and 17, and all were single. Four students acknowledged doing regular exercises, not as a way of losing weight but in order to keep fit. Of the 50 girls, ten (20%) had been told by their siblings, parents or friends that they were fat, but only three had altered their dietary patterns and avoided heavy, fatty fried food. The rest did not bother about it at all. Two subjects said that they did not see their weight should matter to themselves or others. Six subjects had altered their dietary patterns because they had been told that they were too thin, and they had increased the amount of food, as well as the type of food, but acknowledged that it had not made any difference thus far. Only two subjects said that they felt fat; one had started to avoid fried food and the other did not do anything about this feeling. Another two subjects acknowledged taking care in what they ate, largely to avoid getting oily skin, pimples, acne, etc.

Not a single subject acknowledged using diuretics, laxatives, or inducing vomiting. Two subjects stated that

Table 3 Symptoms associated with eating disorders

	BITE symptom score quartiles				χ^2	*df*	*P*
	1st	2nd	3rd	4th			
Uses diuretic to control weight							
No	116 (84.67)	133 (88.67)	100 (90.09)	93 (87.74)	3.39	3	0.34
Yes	0	0	1 (0.9)	0			
Uses pills to control weight							
No	116 (84.67)	133 (88.67)	102 (90.09)	93 (87.74)	3.33	3	0.34
Yes	0	0	1 (0.9)	0			
Vomits to maintain weight							
No	116 (99.15)	131 (97.76)	98 (97.03)	92 (97.87)	1.30	3	0.72
Yes	1 (0.85)	3 (2.24)	3 (2.97)	2 (2.13)			
Uses sports to lose weight							
Yes	58 (44.27)	53 (35.57)	50 (46.30)	40 (37.74)	4.11	3	0.25
No	73 (55.73)	96 (64.43)	58 (53.70)	66 (62.26)			
Exercises to control weight							
Yes	21 (15.79)	21 (14.38)	27 (24.77)	23 (22.33)	6.06	3	0.11
No	125 (85.62)	125 (85.62)	82 (75.23)	80 (77.67)			

Table 4 Non-parametric analyses of common acculturation variables and their relationship with BITE score quartiles

	BITE symptom score quartiles				χ^2	*df*	*P*
	1st	2nd	3rd	4th			
Language spoken at home							
Only local	42	51	25	27	10.89	12	0.54
Mostly local	29	33	26	26			
Local & English	48	53	46	36			
Mostly English	15	13	13	16			
Only English	0	0	0	1			
Languages spoken to friends							
Only local	35	42	24	17	11.09	12	0.52
Mostly local	29	22	22	18			
Local & English	43	57	40	46			
Mostly English	27	29	22	24			
Only English	1	0	0	1			
Language of commonly read magazines & newspapers							
Only local	50	56	34	35	9.47	12	0.66
Mostly local	9	10	12	9			
Local & English	42	56	42	34			
Mostly English	19	16	16	18			
Only English	15	12	5	10			
Type of music & radio listened to							
Only local	43	52	29	33	5.67	9	0.77
Mostly local	41	49	44	31			
Local & English	51	48	37	40			
Mostly English	1	1	0	1			
Only English	0	0	0	0			
Language in which you think							
Only local	60	71	44	42	7.17	12	0.85
Mostly local	24	26	18	18			
Local & English	39	41	38	34			
Mostly English	11	12	7	8			
Only English	2	0	3	3			
Type of clothes worn							
Only local	41	57	39	31	14.07	12	0.30
Mostly local	40	47	31	40			
Local & English	44	37	38	30			
Mostly English	1	1	0	1			
Only English	10	8	1	3			
Types of food							
Only local	42	63	35	36	14.10	12	0.29
Mostly local	59	59	45	39			
Local & English	33	26	30	28			
Mostly English	2	2	0	0			
Only English	0	0	0	1			

Table 5 Factor structure of BITE

Factor 1: "Compulsive" (25.5% of variance)	
Not being able to stop eating if wishes	0.99
Factor 2: "Impulse control & sociocentricity" (43.8% of variance)	
Eating pattern disrupts life	0.35
Eating until stopped by physical discomfort	0.40
Eating sensibly in front of others and make up in private	0.49
Overpowering urges to eat and eat and eat	0.38
Eat when anxious	0.32
Eating a large amount of food rapidly	0.33
Ashamed of eating habits	0.53
Deceive others about amount eaten	0.33
Binge alone	0.39
Eat in secret	0.31
Factor 3: "Depressive thinking" (15.1% of variance)	
Feel a failure if diet broken	0.41
Food dominates life	0.33
Worry about no control over amount eaten	0.35

they had binged in the past. When asked to describe this bingeing, both described eating too many sweets on a single festive occasion and because they were feeling hungry and sweets were delicious. Only one had eaten extra sweets in seclusion from the family. However, this behaviour did not appear to be true bingeing, but merely overeating on one occasion in the previous year. No-one took any slimming pills or was dieting excessively.

When asked about the role of the family and their own identity, three key themes emerged. The first was that 49 respondents saw their identity as inextricably linked with being part of their family; they felt that this was crucial because the family had more experience and were likely to look after them. The sole exception came from a family where the father drank heavily and physically abused the subject and her mother, and there was strong family conflict. The second theme to emerge was that the individuals saw themselves as being defined by their personal relationships. These included friends and family. They expressed their identity in relation to roles of daughter, grand-daughter or sister – relatedness to another person was part of their definition. The third key theme to emerge was the difficulty in defining themselves outside of these relationships. When asked to define the closeness with the family, virtually all placed themselves very close to their parents.

As one subject stated, "I find it very difficult to describe myself – only others can. I belong to my family". Another subject described herself to others "by giving my name first then parents' details and followed by grandparents' details and where they came from". Parental identification and identification with the family was reported by virtually all in their descriptions of the self, and the proximity to members of the family was a key finding.

Discussion

We confirm a very low prevalence of eating disorder (bulimia) amongst north Indian college students. The qualitative data also reflects notions of identity that support a more sociocentric self-definition, perhaps reflecting different manifestations of conflict resolution, which in the West could be resolved through disordered eating and the response of family and friends. However, before discussing these findings in detail, some methodological limitations warrant attention.

Firstly, there is no control group, and hence one might argue that the qualitative data reflect common pre-occupations of female college students; however, these themes have also emerged in other studies as characteristic of Indian identity (Roland 1988). Similarly, a control group of non-Hindi speaking and non-Indian (culturally) college students would have been helpful to resolve the culture, personality and environmental contributions to disordered eating.

Only a random sample of respondents were interviewed, and not all high scorers. Thus, potential cases on the DSM-III-R may well have escaped notice. However, individual scores were perused during coding and analysis, and it is unlikely that those scoring on interview as cases would have a low BITE score. The second and possibly more difficult problem was the use of qualitative data for ascertaining sociocentric behaviour and attitudes of the respondents. It is not the qualitative approach per se that is a problem, but the interviews were conducted by an older male (an authority figure), which may have led the respondents to give the responses they thought the interviewer wanted to hear. Binge eating remains a secret behaviour, and any questions dealing with this behaviour have to be phrased very carefully (Henderson and Freeman 1987).

As there were no refusals in filling in the questionnaire or interviews, the sample can be seen as typical and representative of a middle-class student population.

Rates of bulimic disorders

Nine percent of respondents (45 out of 504) had consulted someone about food intake problems. When looking at these questions individually, it became clear that these consultations were for "medical" reasons, such as allergies to specific foods, rather than eating disorders per se. A much higher proportion (93 respondents) "felt" either overweight or very overweight, and yet only eight had stopped going out socially because of being overweight. The maximum amount of weight change was associated with having a higher BITE score, thus confirming that more weight change was associated with a disordered eating pattern without reaching caseness.

Of those who had described their binge patterns, it was clear that these were rare occasions, related to festivities and not related to hunger, e.g. eating large amounts of sweets on festival days and then feeling bloated and guilty. The sample did not show marked weight loss or extremes of body weight. The use of frequency of behaviour remains open to criticism and does

not by itself lead to caseness. One-fifth of the sample had been criticised by others on the basis of their body shape, and virtually all were taking some measures to deal with it. As this was in response to family and friends, this may indicate a degree of closeness. Yet, this upholds previous observations of other authors that body shape dissatisfaction plays a key role in eating disorders (Le Grange et al. 1997; Wilfley et al. 1996).

As Nasser (1997) suggests, one explanation for the spread of bulimia is that purging and vomiting are seen as more successful means of controlling weight than is dieting, and it can also be more secretive. However, in the present sample there was no acknowledgement of these behaviours at all, and this may indicate that if eating disorders exist in this culture, they are not typical but variances of Western patterns.

Sociocentrism

Sociocentrism and impulsivity account for a significant amount of the variance (43.8%) in BITE score. It becomes clear that some questions in the BITE may be considered as sociocentric, and hence our study supports our separate hypothesis, merely because sociocentric conflict is apparent in bulimia regardless of culture. In the qualitative interview, only one out of 50 interviewees described herself as an individual: "I want to have separate power and place". Virtually everyone else described themselves in terms of "My identity is in my family"; "They are the major important thing in my life" and "I have to do as they say because they have more experience".

These latter three themes are the most common running through the qualitative data in response to the question "How important is my family to me?". Various reasons were given: "My identity is linked with their existence" and "I define myself by my personal relationships". Thus the key themes of kinship and social centrism emerge very strongly. These need to be tested in detail in future research. Gender clearly plays a very important role in identity formation – in a patriarchal society, women are being seen as the "property" of men in the family. Interestingly, this sense may well be affected by increasing Westernisation, industrialisation and perhaps feminist thought, which requires a redefinition of gender roles. Better measures of individual and society based notions of personality, individual, family and community are needed.

Acculturation

Although our questionnaire included only a few questions ascertaining the levels of acculturation, the data are robust enough to suggest that none were associated with higher BITE scores. This may reflect one of two things. Firstly, it is possible that in a sociocentric society, where individuals are more likely to be expected to behave in a more uniform way, they are also less likely to show any changes in behaviour that may be seen as Westernised. For example, in Hindi films, it is the vamp generally who dresses in Western clothes and dances to Western music, whereas the good girl heroine invariably gets her man, and wears Indian clothes and sings Indian songs. Such images are also undergoing rapid change. Culture conflict has been shown to be a key factor in explaining high rates of bulimia in migrants to the UK. This conflict may occur in the mind at a cognitive level rather than at a behavioural level. When asked about the degree of comfort higher levels were related to lower the BITE scores. Di Nicola (1990) has suggested that at least anorexia nervosa is not so much a culture-specific illness as a response to culture change. Perhaps bulimia is also a response to culture change. As Katzman and Lee (1997) have argued, it is possible that eating disorders occur as a result of discounted transitional oppression due to gender role and society's expectations of the female. Lee (1993) argues that Westernisation may be only one factor responsible, and other factors, like parental control, may need to be considered.

Conclusions

The degree of concordance between the values of family/society and individual values may be the key factor here in explaining the low rates of bulimic disorders in this group. As Nasser (1997) points out, intergenerational conflicts, cultural changes and interparental conflicts all influence rates of eating pathology. As cultures continue to change and evolve and be influenced by external factors, the pathogenic factors within and outside the culture too change. The pursuit of thinness may be related to competitiveness, and if society or culture encourages this, the rates of eating disorder will be higher. In the present study we did not measure competitiveness, but it is likely that in sociocentric studies this may well be at lower levels.

It is possible that the low rates of bulimic disorders in north India are related to the fact that the expectations of young females are still linked inextricably with those of their own families and society in general. Acceptability by and conformity in a society will play a role in how an individual sees herself and how that is perceived by others, thus individual psychological factors may play a more subordinate role in the genesis of these factors.

Appendix 1

BITE questions

1. Do you have a regular daily eating pattern?
2. Are you a strict dieter?
3. Do you feel a failure if you break your diet once?
4. Do you count the calories of everything that you eat, even if not on a diet?
5. Do you ever fast for a whole day?

6. Does your eating pattern severely disrupt your day?
7. Would you say that food dominated your life?
8. Do you ever eat and eat until you are stopped by physical discomfort?
9. Are there times when all you can think about is food?
10. Do you eat sensibly in front of others and make up in private?
11. Do you ever experience overpowering urges to eat and eat and eat?
12. When you are feeling anxious do you tend to eat a lot?
13. Does the thought of becoming fat terrify you?
14. Do you ever eat large amounts of food rapidly?
15. Are you ashamed of your eating habits?
16. Do you worry that you have no control over how much you eat?
17. Do you turn to food for comfort?
18. Do you deceive other people about how much you eat?
19. Do you ever binge on large amounts of food?
20. If yes, does bingeing leave you feeling miserable?
21. If you binge, is this only when you are alone?
22. Would you go to great lengths to satisfy an urge to binge?
23. If you overeat do you feel very guilty?
24. Do you ever eat in secret?
25. Would you consider yourself to be a compulsive eater?
26. Does you weight fluctuate by more than lb 5 [2.27 kg] in a week?

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