European Journal of Clinical Nutrition (2004) 58, 846–852
 0954-3007/04 $30.00
www.nature.com/ejcn

ORIGINAL COMMUNICATION

Epidemiological study of the influence of family and socioeconomic status in disorders of eating behaviour

A Rodríguez Martín[1]*, JP Novalbos Ruiz[1], JM Martínez Nieto[1], L Escobar Jiménez[2] and AL Castro de Haro[1]

[1]*Area of Preventive Medicine and Public Health of the University of Cádiz, España; and* [2]*Service of Endocrinology and Clinical Nutrition of the 'Puerta del Mar' Hospital, Cádiz, España*

Objective: To analyse the differences in family functioning and socioeconomic status between subjects with disorders of eating behaviour and the healthy population, considering the possible relationship of these factors with the psychic characteristics of patients, with consumption of various substances, and with sexual practices.
Design: Case–control study.
Setting: 'Puerta del Mar' University Hospital (Andalusia, Spain).
Subjects: Conducted on a sample of 120 patients with AN and BN, and 240 controls with an identical distribution by age and sex.
Interventions: SCOFF, eating disorder inventory (EDI), Apgar family and socioeconomic questionnaires are utilised.
Results: Patients with disorders of eating behaviour present greater family dysfunctioning than controls; among cases, this difference is greater in the acute forms, but there are no differences between recent situations or crises due to previous episodes. Family dysfunction is associated with higher scores of multiple subscales of the EDI, which is corroborated on analysing each of the Apgar parameters independently. Family functioning is not associated with other variables such as breast-feeding or consumption of toxic substances. Socioeconomic status does not differentiate cases from controls, or acute situations from evolving ones, or new episodes from other crisis episodes, although differences may be found in the psychic manifestations according to social class.
Conclusions: It is confirmed that family functioning has an influence in these types of disorder, in their evolution and in the psychic characteristics of the patients, without any evidence being found of a relationship between these disorders and socioeconomic status.
European Journal of Clinical Nutrition (2004) **58,** 846–852. doi:10.1038/sj.ejcn.1601884

Keywords: family relations; socioeconomic status; eating disorders; epidemiology

Introduction

In recent years, disorders of eating behaviour (DEB) have acquired considerable social resonance, both because of their gravity and the increase in the incidence (8.2×10^5 for AN, to the end of the 1990s) and prevalence (4.68×10^5) of these disorders, and the emergence of DEB at increasingly younger ages, with their maximum presentation occurring between 12 and 25 years of age, and with a clear predominance among females (85–95%). (Rodriguez Martin *et al*, 1999; Rodriguez Martin & Ruiz Jimenez, 2001).

The aetiology of these diseases is multicausal. Among the predisposing factors, family influence and socio-cultural factors, including socioeconomic status (SES), are notable.

Several authors (Dare & Key, 1999; Laliberte *et al*, 1999; Robin *et al*, 1999; Birch & Davison, 2001; Lemmon & Josephson, 2001; Rodriguez Martin & Ruiz Jimenez, 2001) argue comprehensively that the family environment has an important influence in the aetiology of these processes, principally in the case of the purgative or bulimic disorders (Pantano *et al*, 1997; Kuba & Harris, 2001; McDermott *et al*, 2002), with a close relationship being established between the family functioning and disorders of affectivity, personality disturbances, situations of anxiety and other psychiatric

***Correspondence: A Rodríguez Martín, Area de Salud Pública, Escuela de Enfermería y Fisioterapia, Avda. Duque de Nájera 18, 11002 Cádiz, España. E-mail: amelia.rodriguez@uca.es**
Received 12 May 2003; revised 3 July 2003; accepted 31 July 2003

disorders, all of which are commonly present in DEB, together with increased consumption of drugs or other toxic substances (Fornari *et al*, 1999; Kendler, 2001; Herpertz-Dahlmann *et al*, 2001).

In respect of the influence of SES on DEB, a wide range of different opinions can be found. While some authors (McClelland & Crisp, 2001; Johnson *et al*, 2002) defend the association between them, others (Tsai, 2000; Zonnevijlle-Bender *et al*, 2002) do not find this association so clear, and maintain that possibly it is cultural differences that interact most relevantly (McClelland & Crisp, 2001). For some authors, the relationship between SES and DEB corresponds to a stereotype that is still not sufficiently proven, more particularly in the case of anorexia nervosa; rather differently, the relationship between low SES and BN is more accepted, in particular as a predisposing factor (Gard & Freeman, 1996).

Other studies demonstrate the existence of a relationship between SES and the practice of poor eating habits; however, this association is not maintained when patients with diagnostic criteria of DEB are studied (Rogers *et al*, 1997).

The absence of quantitative evaluation in this respect, in our own community, has been the motive for conducting the present study, with the following objectives:

(1) To analyse the association between family functioning, SES and the presentation of DEB, together with variations in the presence of symptoms.
(2) To study the relationship between the functional characteristics of the family, SES and the psychological characteristics of patients with AN and BN.

Material and methods

A case–control study was conducted in adolescents and young adults of the province of Cádiz. A case is defined as any person aged between 12 and 40 y of the province of Cádiz, diagnosed as suffering AN and/or BN, according to the criteria established by the DSM-IV (Pichat, 1995).

The mixed forms may be categorised as either a basic condition of AN in which bulimic outbreaks occur, or a condition of BN that leads to AN.

The cases comprise patients with diagnosis of AN and BN, who were attended in the Section of Endocrinology and Clinical Nutrition of the 'Puerta del Mar' University Hospital of Cádiz (reference unit for the province of Cádiz) during the year 2002. The sample includes both in-patient and out-patient cases, both incident and prevalent.

The controls comprise young people with a distribution by age and sex identical to that of the cases. The SCOFF test was utilised (Morgan *et al*, 1999) to minimise any possible classification bias, all subjects with scores equal to or above 2 being excluded as controls. The sampling was carried out on schoolchildren attending public and private schools, university students, and public administration workers, selected according to the age and sex characteristics.

The statistical design chosen for the calculation of the sample was that of tests of hypotheses for one probability ratio, taking into account that a pairing by sex and age in a proportion of 1:2 had been carried out. Applying the formula of Shlesselman and considering that the percentages of certain factors of exposure influential in these disorders have ranged between 40 and 45%, and for an expected risk of 2.5, the number of cases necessary was 100–104 subjects. Finally, 120 cases were included, against 240 controls.

The instruments utilised in carrying out the study were:

(A) *The SCOFF Questionnaire*. This is highly effective for detecting DEB, and is easy to apply. Being very sensitive, it is employed to exclude as controls any subjects with a high probability of having DEB.

(B) The eating disorder inventory (EDI) evaluates attitudes towards ingestion of foods and associated behaviours; it also has the advantage of being adapted to the Spanish population (Garner *et al*, 1983). It has 11 subscales (eight in its original version and three more in Spanish) that describe a set of factors that are important in alterations of eating behaviour:

(1) An impulsive need for slimness.
(2) Bulimia: thoughts about bulimia or bulimic actions.
(3) Corporal dissatisfaction, either with the general form or with particular parts of the subject's body.
(4) Ineffectiveness and low self-esteem: feelings of general incapability, insecurity, low self-appreciation or self-disparagement.
(5) Perfectionism.
(6) Interpersonal distrust: lack of capacity for showing feelings, distrust of others and difficulty in communicating with others.
(7) Interoceptive awareness: degree of difficulty in interpreting corporal sensations associated with hunger and satiety. Distrust in relation to the functioning of the body and of the emotions.
(8) Fear of maturity: desires to return to security of infancy.
(9) Asceticism.
(10) Impulsiveness.
(11) Social insecurity.

In the analysis of the EDI results, the scores in these various factors have more clinical importance than the total score of the questionnaire. However, it is not a diagnostic instrument. Its principal utility is in the observation and accurate evaluation of certain psychological traits relevant for the understanding and treatment of DEB.

(C) Questionnaire on the functioning of the family from the Apgar family test, taking into account adaptability, cooperation, development, affectivity and capacity for resolution. This determines the degree of satisfaction that

the subject perceives with respect to the functioning of their family. The categories are normofunctional families (7–10 points scored), moderately dysfunctional families (4–6 points) and seriously dysfunctional (0–3 points) families (Smilkstein, 1978).

(D) Socioeconomic assessment of the family utilising the test of García Caballero, which is adjusted to the characteristics of the Spanish population, and completing it presents no great difficulty for Spanish subjects (Broadhead *et al*, 1983). Six categories of SES are established with scores ranging between 6 and 36, with the profession of the father, profession of the mother, education of the father, education of the mother, characteristics of the home dwelling and characteristics of the home district being the factors assessed. A low score (<14) corresponding to categories I and II would indicate a low SES; an intermediate score (15–26) would correspond to a low-to-medium (category III) and medium-to-high (category IV) SES, while a score higher than 26 would indicate a high SES.

(E) *Clinical record*: This records the characteristics and habits of the young person, personal and family antecedents as well as clinical data, treatment and monitoring of the patients.

The questionnaires were self-administered, with the patients being called in groups of 6–8. The data relating to current treatments and clinical situation (acute–recent or crisis–and in evolution) were obtained from the clinical histories of the hospital, with the consent of the patients; in the case of patients below 18 y of age, authorisation was requested from parents or tutors for their participation in the study.

All the patients and the controls were weighed and measured for height by the same personnel and instruments.

All the data obtained have been tabulated and analysed employing the SPSS v10 statistical program. The association between qualitative variables was analysed by means of the χ^2 test and Fisher's exact test. For the measurement of risk, the ratio of advantages or odds ratio was utilised; and in the case of multivariant analysis by means of logistic regression, by obtaining e^{β}. The association between DEB and family dysfunction was adjusted by the variables of SES and lifestyle. For the correlation of ordinal variables, Spearman's test was employed.

The comparison of means was carried out by means of the *t*-test and ANOVA, and (when the assumptions of application of the parametric tests were not met), by means of Kruskal–Wallis and *U* of Mann–Whitney.

Results

In total, 120 cases and 240 controls paired by sex and age have been studied. Of the 120 cases, 111 (92.5%) were females and nine (7.5%) were males, and the controls in identical proportion, 222 being females and 18 males. The mean age for both cases and controls was 21.65 y, with a standard deviation of 5.77. Although it is in the 15–20-year-old age group that these disorders predominate, it can be observed that almost 25% of the patients in our sample are aged more than 25 y.

Table 1 gives some of the general descriptive characteristics of the cases and controls, relating to the educational level,

Table 1 General characteristics of the population studied

	Controls N (%)	*Patients*			
		Anorexia	*Bulimia*	*Mixed forms*	*Total*
Sex					
Males	18 (7.5)	8 (9.9%)	1 (5.6%)	0	9 (7.5%)
Females	222 (92.5)	73 (90.1%)	17 (94.4%)	21 (100%)	111 (92.5%)
Age groups					
≤15	26 (10.8)	12 (14.8%)	—	1 (4.8%)	13 (10.8%)
15.01–20	88 (36.7)	28 (34.6%)	8 (44.4%)	8 (38.1%)	44 (36.7%)
20.01–25	78 (32.5)	27 (33.3%)	4 (22.2%)	8 (38.1%)	39 (32.5%)
25.01–30	24 (10.0)	8 (9.9%)	3 (16.7%)	1 (4.8%)	12 (10.0%)
30.01–35	16 (6.7)	5 (6.2%)	1 (5.6%)	2 (9.5%)	8 (6.7%)
>35	8 (3.3)	1 (1.2%)	2 (11.1%)	1 (4.8%)	4 (3.3%)
Educational level					
EGB	2 (0.8)	3 (3.7%)	2 (11.1%)	1 (4.7%)	6 (5.0%)
BUP—FP1	89 (37.1)	24 (29.6%)	3 (16.6%)	7 (33.3%)	34 (28.3%)
COU—FP2	127 (52.9)	24 (29.6%)	8 (44.4%)	6 (28.5%)	38 (31.7%)
University students	22 (9.2)	30 (37.0%)	5 (27.7%)	7 (33.3%)	42 (35.0%)
Consumption of toxic substances					
Tobacco	112 (46.7)	31 (38.2%)	7 (38.9%)	9 (42.9%)	47 (39.2%)
Alcohol	113 (47.1)	20 (24.7%)	4 (22.2%)	9 (42.9%)	33 (27.5%)
Others	20 (8.3)	4 (4.9%)	1 (5.5%)	1 (4.7%)	6 (5.0%)
Substances without medical prescription	17 (32.1)	21 (25.9%)	7 (38.8%)	8 (38.0%)	36 (30.0%)
Medication	1 (0.4)	1 (1.2%)	5 (27.7%)	0	6 (5.0%)

N: cases: 120; controls: 240.

consumption of toxic substances (alcohol, tobacco and other), employment of substances without medical prescription (laxatives, dietary fibre and others) as well as the consumption of medication. In respect of the anthropometric values (Table 2), cases and controls being equal in age and sex distribution, they differ as one would expect in weight and BMI; marked differences are also observed between anorexic and bulimic patients, and between these and the controls.

In relation to the family functioning measured by the Apgar family test, significant differences exist between cases and controls, with more severe dysfunctioning being appreciated in patients with AN and BN, compared with controls. The association between DEB and family dysfunction was adjusted by SES and lifestyle variables; for moderate dysfunction the OR was 2.94 (95% CI 1.59–5.42); and 8.45 for serious dysfunctions (95% CI 2.77–25.7). In general, the family is found to be very functional in 85% of the controls, against 70.8% of the cases (Figure 1). These differences could be attributed to the differences in distribution regarding SES; however, when the Apgar family test data are adjusted for SES, the differences between cases and controls are maintained.

These differences in the family functioning between cases and controls persist, even when considering each of the parameters of the Apgar independently, such as satisfaction with the assistance received from the family, the discussion of matters of common concern, the acceptance of new activities or changes in the lifestyle and demonstration of family affection or feelings.

If we focus exclusively on the cases of AN and BN and we differentiate them clinically into acute forms (striking clinical manifestations according to the DSM-IV, with a duration of less than 2 months) (1) or in evolution (of more than 2 months), more severe family dysfunctioning is observed in the acute cases, compared with those that proceed in an evolutionary way (P=0.024). But in contrast, this finding among the acute forms is not seen when comparing a recent situation of new diagnosis with a crisis occurring within an already diagnosed process.

Trying to establish a possible relationship between the family functioning and various psychological characteristics presented by the patients with AN and BN and that are identified in the EDI, such as obsession with slimness, bulimia, corporal dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, fear of maturity, asceticism, impulsiveness and social insecurity, we find that the more functional families have low scores in the different parameters of the EDI, while the opposite situation is observed when the family dysfunction is serious. These differences are obtained especially in the parameters relating to corporal dissatisfaction, ineffectiveness, perfectionism, impulsiveness, interpersonal distrust and social insecurity (Table 3).

Relating individually each of the parameters of the Apgar with the different variables recorded using the EDI (Table 4), it can be observed how a reduced satisfaction with assistance received from the family tends to be associated with obsession with slimness, bulimia, corporal dissatisfaction, direct ineffectiveness, interpersonal distrust, interoceptive awareness, impulsiveness and social insecurity.

With respect to discussion in the family on matters of common concern, this tends to be associated with corporal dissatisfaction, ineffectiveness, interpersonal distrust, interoceptive awareness, impulsiveness and social insecurity.

Family acceptance of new activities tends to be associated with corporal dissatisfaction, ineffectiveness, perfectionism, interpersonal distrust, interoceptive awareness, impulsiveness and social insecurity.

In relation to manifestations of familiar affection and feelings, these seem to be associated with obsession with slimness, corporal dissatisfaction, ineffectiveness, perfectionism, interoceptive awareness, impulsiveness and social insecurity.

Finally, the time dedicated to family is associated with interpersonal distrust, fear of maturity and social insecurity.

In contrast to what one would expect, significant differences have not been found when relating the family functioning to whether the subject had or had not been breast-fed as a baby, or to the consumption of larger quantities of alcohol, tobacco and other toxic substances. When considering the practice of sexual relations by patients

Table 2 Anthropometric values (95% CI)

	Age (y)	*Weight (kg)*	*Height (m)*	*BMI (kg/m^2)*
Anorexia	19.7–22.1	50.2–54.3	1.60–1.64	19.0–20.3
Bulimia	20.9–28.0	62.9–85.7	1.57–1.67	24.3–31.9
Mixed forms	19.2–24.6	48.4–54.9	1.58–1.63	18.6–21.2
Total	20.6–22.7	52.9–58.0	1.60–1.63	20.1–21.9
Controls	20.9–22.4	57.9–59.8	1.62–1.64	21.6–22.3

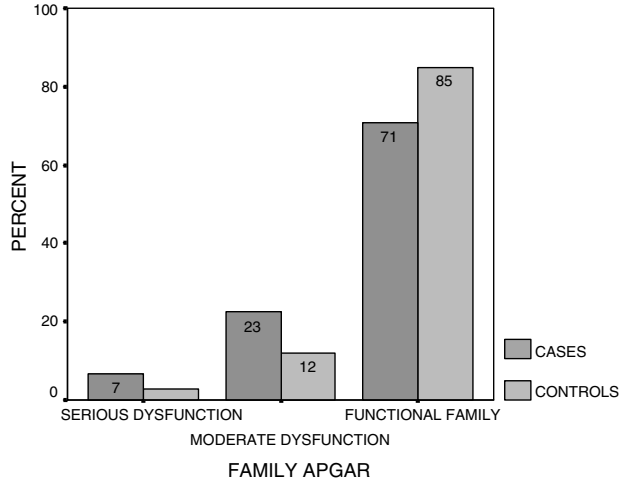

Figure 1 Apgar family test.

Table 3 Psychological characteristics of patients with anorexia and bulimia nervosa, and family functioning

EDI categories	*APGAR family categories*	*Average range*	*Sig.*
Obsession with slimness	Serious dysfunction	74.13	
	Moderate dysfunction	65.39	0.31
	Very functional family	57.66	
Bulimia	Serious dysfunction	67.63	
	Moderate dysfunction	65.44	0.49
	Very functional family	58.26	
Corporal dissatisfaction	Serious dysfunction	81.94	
	Moderate dysfunction	73.33	0.009
	Very functional family	54.41	
Ineffectiveness	Serious dysfunction	79.31	
	Moderate dysfunction	78.81	0.001
	Very functional family	52.91	
Perfectionism	Serious dysfunction	90.06	
	Moderate dysfunction	64.81	0.024
	Very functional family	56.35	
Interpersonal distrust	Serious dysfunction	83.06	
	Moderate dysfunction	75.17	0.003
	Very functional family	53.72	
Interoceptive awareness	Serious dysfunction	71.38	
	Moderate dysfunction	70.04	0.13
	Very functional family	56.45	
Fear of maturity	Serious dysfunction	67.81	
	Moderate dysfunction	66.94	0.40
	Very functional family	57.76	
Asceticism	Serious dysfunction	84.75	
	Moderate dysfunction	58.74	0.12
	Very functional family	58.78	
Impulsiveness	Serious dysfunction	92.00	
	Moderate dysfunction	67.91	0.007
	Very functional family	55.18	
Social insecurity	Serious dysfunction	87.88	
	Moderate dysfunction	76.13	0.001
	Very functional family	52.96	

with AN and BN, it is observed that, in those patients who were not practicing such relations, the family functioning is greater, but significant differences were not found in considering whether or not these sexual relations were reported as satisfactory.

Similarly, no association has been found between the family functioning and the appearance of psychiatric pathology, such as depression, anxiety, phobias, personality disorders or others, among patients with DEB.

In respect of the socioeconomic characteristics identified from the test of García Caballero, significant differences have not been observed in the distribution of cases and controls by SES, although more cases fall into the middle (status III: 41%) and upper categories (status V: 12%) compared with the controls (32 and 5%, respectively) (Figure 2). The AN and the mixed forms appear to be predominant in the higher SES categories, whereas bulimia is distributed more uniformly across all SES categories.

No association has been found between the psychological characteristics of the patients with AN and BN (recorded using the EDI and previously mentioned) and the SES of these patients. Neither has any relationship been observed between SES, and consumption of alcohol, tobacco, other toxic substances and their reported sexual practice or abstinence.

Discussion

Many studies have been conducted in Spain on patients with Anorexia Nervosa and Bulimia Nervosa, but there are very few references in the bibliography to the assessment of the

Table 4 Correlation between parameters of the EDI and APGAR Family Test (Rho significance test of Spearman)

	APGAR1	*APGAR2*	*APGAR3*	*APGAR4*	*APGAR5*	*APGAR*
Obsession with slimness	**−0.19**	−0.14	−0.17	**−0.18**	−0.08	**−0.22**
P-value	**0.037**	0.115	0.062	**0.044**	0.340	**0.016**
Bulimia	**−0.18**	−0.17	−0.08	−0.17	−0.07	**−0.20**
P-value	**0.046**	0.063	0.361	0.064	0.399	**0.027**
Corporal dissatisfaction	**−0.28**	**−0.22**	**−0.20**	**−0.24**	−0.17	**−0.29**
P-value	**0.002**	**0.016**	**0.023**	**0.008**	0.058	**0.001**
Ineffectiveness	**−0.37**	**−0.23**	**−0.24**	**−0.34**	−0.14	**−0.34**
P-value	**0.000**	**0.012**	**0.008**	**0.000**	0.116	**0.000**
Perfectionism	−0.11	−0.15	**−0.21**	**−0.32**	−0.08	**−0.22**
P-value	0.228	0.093	**0.019**	**0.000**	0.350	**0.012**
Interpersonal distrust	**−0.29**	**−0.25**	**−0.18**	**−0.35**	**−0.22**	**−0.35**
P-value	**0.001**	**0.006**	**0.046**	**0.000**	**0.015**	**0.000**
Interoceptive awareness	**−0.20**	**−0.26**	**−0.22**	**−0.24**	−0.09	**−0.30**
P-value	**0.025**	**0.003**	**0.016**	**0.008**	0.305	**0.001**
Fear of maturity	−0.02	−0.07	−0.08	−0.06	**−0.18**	−0.11
P-value	0.755	0.396	0.384	0.519	**0.044**	0.211
Asceticism	−0.12	−0.03	−0.01	−0.17	−0.10	−0.11
P-value	0.192	0.678	0.843	0.059	0.234	0.232
Impulsiveness	**−0.19**	**−0.20**	**−0.25**	**−0.24**	−0.11	**−0.28**
P-value	**0.033**	**0.027**	**0.006**	**0.007**	0.217	**0.002**
Social insecurity	**−0.32**	**−0.24**	**−0.30**	**−0.35**	**−0.19**	**−0.39**
P-value	**0.000**	**0.007**	**0.001**	**0.000**	**0.037**	**0.000**

APGAR1: Satisfaction with family assistance; APGAR2: discussion with the family on matters of common interest; APGAR3: family acceptance of new activities; APGAR4: manifestations of family affection and emotions; APGAR5: time dedicated to family.
Bold values have statistical significance.

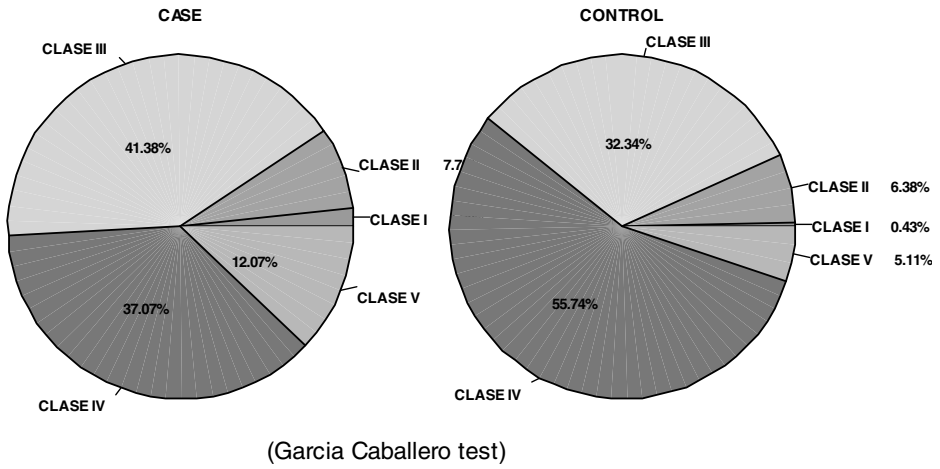

Figure 2 Socioeconomic category of eating disorders patients and controls.

influence of family factors and SES in these DEB. This lack of study was the motivation for the work presented here, in which a comparison is made between a collective of patients with DEB (cases), and a group of healthy subjects without these pathologies (controls).

The demographic characteristics found in our patients are very similar to those described by several other authors (Mijan de la Torre & Velasco Vallejo, 1999; Rodriguez Martin *et al*, 1999; Rodriguez Martin & Ruiz Jimenez, 2001), these disorders largely affecting adolescents and young adults, principally females, and those with higher educational levels.

Considering the family functioning according to the results obtained from the Apgar family test that determines the degree of satisfaction that the subject perceives with respect to the functioning of their family, it is confirmed that a clear relationship exists between this variable and the presence of DEB. This finding is further corroborated by the independent observation of the influence on DEB, attributable to factors such as assistance received from the family, the discussion of matters of common concern, the acceptance of changes of lifestyle, and the demonstration of affection and feelings in the family. These findings would point to the family as a predisposing factor in the aetiology of these pathologies, as concluded in many previous studies (Dare & Key, 1999; Laliberte *et al*, 1999; Robin *et al*, 1999; Birch & Davison, 2001; Lemmon & Josephson, 2001; Rodriguez Martin & Ruiz Jimenez, 2001), with the implication that it is most important to consider the patient's family situation in the therapy of these disorders (Robin *et al*, 1999; Lemmon & Josephson, 2001).

In contrast to what one would expect from references made in the studies by several authors (Fornari *et al*, 1999; Herpertz-Dahlmann *et al*, 2001; Kendler, 2001), a greater consumption of alcohol, tobacco and other toxic substances has not been found in the patients belonging to more dysfunctional families among our patients, nor are psychiatric pathologies such as depression, anxiety, phobias, etc. presented more frequently; on the other hand, more frequent practice of sexual relations has been observed in patients from more dysfunctional families, but without finding any relationship between family functioning and satisfaction with sexual relationships. The explanation for this finding may be that these patients tend to seek more affection and caring feelings within their family relationships.

What should be emphasised, because it is important and because relatively little attention has been given to it in the literature, is the significant relationship established in our study, between the degree of family functioning and various psychological characteristics of the patients suffering in these disorders; it has been observed in a direct way how the family can have a considerable influence on the modification of each of these characteristics, particularly the obsession with slimness, bulimia, corporal dissatisfaction, ineffectiveness, direct interpersonal distrust, interoceptive awareness, impulsiveness, social insecurity and perfectionism.

Several authors (McClelland & Crisp, 2001; Johnson *et al*, 2002) establish a relationship between SES and DEB. Equally, the SES appears to have an influence on the various habits of the patients with DEB, such as the consumption of alcohol, tobacco, toxic substances, sexual practices, etc. In our study, we have not found an association between the SES of the patient and the different types of eating disorder, nor between SES and differences in the evolution of these processes, nor between SES and different patterns of consumption. Therefore, in the light of our results, we follow the line of conclusions presented in other studies (Tsai, 2000; Kuba & Harris, 2001; Zonnevijlle-Bender *et al*, 2002), in which the cultural rather than the economic aspects of the general family situation in which these patients are living are attributed with having more influence.

This means that the assessment of the patient's SES may introduce a bias (McClelland & Crisp, 2001) when it comes to considering therapeutic options that may involve the patient's family (according to their SES), particularly if full consideration is not given to aspects of family functioning or to any pathological family background (Pantano *et al*, 1997), factors that have been shown to be related to the psychological characteristics of the patients.

References

Birch LL & Davison KK (2001): Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr. Clin. N. Am.* **48**, 893–907.

Broadhead WE, Kaplan BH, James SA, Wagner EH, Schoenbach VJ, Grimson R, Heyden S, Tibblin G & Gehlbach SH (1983): The epidemiologic evidence for a relationship between social support and health. *Am. J. Epidemiol.* **117**, 521–537.

Dare C & Key A (1999): Family functioning and adolescent anorexia nervosa. *Br. J. Psychiatry* **175**, 89–90.

Fornari V, Wlodarczyk-Bisaga K, Matthews M, Sandberg D, Mandel FS & Katz JL (1999): Perception of family functioning and depressive symptomatology in individuals with anorexia nervosa or bulimia nervosa. *Compr. Psychiatry* **40**, 434–441.

Gard MC & Freeman CP (1996): The dismantling of a myth: a review of eating disorders and socioeconomic status. *Int. J. Eat. Disord.* **20**, 1–12.

Garner D, Olmstead M & Polivy J (1983): Development and validation of multidimensional eating disorder inventory for anorexia nervosa and bulimia. *Int. J. Eat. Disord.* **2**, 15–34.

Herpertz-Dahlmann B, Muller B, Herpertz S, Heussen N, Hebebrand J & Remschmidt H (2001): Prospective 10-year follow-up in adolescent anorexia nervosa—course, outcome, psychiatric comorbidity, and psychosocial adaptation. *J. Child Psychol. Psychiatry* **42**, 603–612.

Johnson JG, Cohen P, Kasen S & Brook JS (2002): Eating disorders during adolescence and the risk for physical and mental disorders during early adulthood. *Arch. Gen. Psychiatry* **59**, 545–552.

Kendler KS (2001): Twin studies of psychiatric illness: an update. *Arch. Gen. Psychiatry* **58**, 1005–1014.

Kuba SA & Harris DJ (2001): Eating disturbances in women of color: an exploratory study of contextual factors in the development of disordered eating in Mexican American women. *Health Care Women Int.* **22**, 281–298.

Laliberte M, Boland FJ & Leichner P (1999): Family climates: family factors specific to disturbed eating and bulimia nervosa. *J. Clin. Psychol.* **55**, 1021–1040.

Lemmon CR & Josephson AM (2001): Family therapy for eating disorders. *Child Adolesc. Psychiatr. Clin. N. Am.* **10**, 519–542 viii.

McClelland L & Crisp A (2001): Anorexia nervosa and social class. *Int. J. Eat. Disord.* **29**, 150–156.

McDermott BM, Batik M, Roberts L & Gibbon P (2002): Parent and child report of family functioning in a clinical child and adolescent eating disorders sample. *Aust. N. Z. J. Psychiatry* **36**, 509–514.

Mijan de la Torre A & Velasco Vallejo JL (1999): Nutrición y trastornos de la conducta alimentaria (TCA): anorexia y bulimia nerviosa. *Nutr. Hosp.* **2**, 81–91.

Morgan JF, Reid DF & Lacey JH (1999): The Scoff questionnaire: assessment of a new screening tool for eating disorders. *BMJ* **319**, 1467–1468.

Pantano M, Grave RD, Oliosi M, Bartocci C, Todisco P & Marchi S (1997): Family backgrounds and eating disorders. *Psychopathology* **30**, 163–169.

Pichat P (1995): *DSM-IV. Manual diagnóstico y estadístico de los trastornos mentales*. Barcelona, Spain: Masson SA.

Robin AL, Siegel PT, Moye AW, Gilroy M, Dennis AB & Sikand A (1999): A controlled comparison of family *versus* individual therapy for adolescents with anorexia nervosa. *J. Am. Acad. Child Adolesc. Psychiatry* **38**, 1482–1489.

Rodriguez Martin A, Martinez Nieto JM, Ruiz Jimenez MA, Novalbos Ruiz JP, Vazquez MC, Fernandez YC, Gomez MA & Fernandez CC (1999): Unhealthy eating behaviour in adolescents. *Eur. J. Epidemiol.* **15**, 643–648.

Rodriguez Martin A & Ruiz Jimenez MA (2001): Epidemiologia y prevención de los trastornos del comportamiento alimentario. In *Nutrición y hormonas*, eds. L. Escobar Jimenez & M. Aguilar Diosdado, pp 301–316. Madrid, Spain: Ergon.

Rogers L, Resnick MD, Mitchell JE & Blum RW (1997): The relationship between socioeconomic status and eating-disordered behaviors in a community sample of adolescent girls. *Int. J. Eat. Disord.* **22**, 15–23.

Smilkstein G (1978): The family APGAR: a proposal for a family function test and its use by physicians. *J. Fam. Pract.* **6**, 1231–1239.

Tsai G (2000): Eating disorders in the Far East. *Eat. Weight. Disord.* **5**, 183–197.

Zonnevijlle-Bender MJ, van Goozen SH, Cohen-Kettenis PT, van Elburg A & van Engeland H (2002): Do adolescent anorexia nervosa patients have deficits in emotional functioning? *Eur. Child Adolesc. Psychiatry* **11**, 38–42.