Eating related problems amongst Iberian female college students[1]

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ABSTRACT. The current survey descriptive study evaluates the prevalence of eating related problems amongst a sample of first-year female college students attending an university campus in one of two areas of the Northwest of the Iberian Peninsula in Europe. A total of 1079 students participated in the current study, 486 from a large university campus of the North of Portugal (Minho), and 595 from two large university campuses of the Northwest of Spain (Galicia). Participants responded to the Eating Disorder Inventory (EDI) and to a questionnaire designed at assessing eating related habits and problems. Results showed that a significant number of students scored high on the EDI and showed considerable prevalence of eating related problems. Based on this self reported data, it is estimated that the prevalence of eating disorders on these peripheral areas of both countries is not significantly different than what is common in other European areas or countries.

KEYWORDS. Eating Disorders. Epidemiology. Prevalence. Descriptive study.

RESUMEN. El presente estudio evalúa la prevalencia de los trastornos de la alimentación en una muestra de alumnas universitarias de primer año que frecuentaban una Universidad de una de dos áreas del Noroeste de la Península Ibérica. Se trata de un estudio descriptivo, mediante observación. Un total de 1079 mujeres participaron en este estudio, 486 de una Universidad del Norte de Portugal (Minho) y 595 de dos Universidades del Noroeste de España (Galicia). Las participantes respondieron al Inventario de Trastornos Alimentarios (EDI) y a un cuestionario desarrollado para evaluar problemas relacionados con la alimentación. Los resultados mostraron que un número significativo de estudiantes obtuvo un resultado elevado en el EDI, presentando una prevalencia considerable de problemas relacionados con la alimentación. Basándonos en los datos auto referidos se estimó que la prevalencia de trastornos en el comportamiento alimentario en estas áreas periféricas de ambos países no es significativamente diferente de lo que resulta común en otros países y áreas de Europa.

PALABRAS CLAVE. Trastornos del comportamiento alimentario. Epidemiología. Prevalencia. Estudio descriptivo.

RESUMO. O presente estudo avalia a a prevalência de problemas alimentares numa amostra de alunas universitárias do primeiro ano que frequentavam uma universidade de uma de duas áreas do noroeste da Península Ibérica. Trata-se de um estudo descritivo, mediante observação. Um total de 1079 mulheres participaram neste estudo, 486 de uma universidade do Norte de Portugal (Minho) e 595 de duas universidades do Noroeste de Espanha (Galiza). Os participantes responderam ao Inventário de Perturbações Alimentares (EDI) e a um questionário desenvolvido para avaliar problemas relacionados com a alimentação. Os resultados mostraram que um número significativo de estudantes obtiveram um resultado elevado no EDI e apresentavam uma prevalência considerável de problemas relacionados com a alimentação. Com base nos dados de auto relato foi estimada que a prevalência de perturbações do comportamento alimentar nestas áreas periféricas de ambos os países não é significativamente diferente da que é comum noutros países e áreas da Europa.

PALAVRAS CHAVE. Perturbações do comportamento alimentar. Epidemiologia. Prevalência. Estudo descritivo.

Introduction

Eating Disorders, namely Anorexia Nervosa and Bulimia Nervosa, are severe psychopathological disorders that affect mainly young women. Its visibility and the public attention devoted to them has increased significantly over the last couple of years. However, it is not clear if the increase in numbers reported each year represent a real increase on incidence or just the fact that more cases are detected by several public health systems (Hoek, 2002). Although the distribution of eating disorders seems to uniform in western countries there is little data on its prevalence in the Iberian Peninsula, especially on its more peripheral areas. Epidemiological data on Eating Disorders in Portugal is quite scarce (c.f., Machado, 2003). The first study on the

prevalence of eating disorders was published in the early nineties. Azevedo and Ferreira (1992) studied the prevalence of eating disorders in one of the Azores Islands. The authors interviewed 580 males and 654 females aged 12 to 20, attending a local state high school grade 7 to 12. The authors reported 2 cases of Bulimia Nervosa and 6 cases (1 boy and 5 girls) that fulfilled all the criteria for anorexia nervosa but the weight criterion. The authors concluded that the prevalence of eating disorders in the Azores region was very low; they estimated an overall prevalence of .64% when partial syndromes were included. Later, Carmo *et al.*(1996) used a questionnaire to survey 2,422 women, aged from 10 to 21 years old, from the Lisbon area. Based on subjects' responses the authors estimated a prevalence of .40% for anorexia nervosa, 12.6% for subclinical cases, and 7% body image disturbance. A similar study was carried to access the prevalence of eating behavior disturbances in a female university population (Baptista, Samapio, Carmo, Reis, and Galvão-Teles, 1996). In this study 735 students, with a mean age of 26 years old, from several departments of the University of Lisbon responded to a mail questionnaire. Fifty five percent reported desire to loose weight, 25% reported weight fluctuations during the course of the previous year, 12% were currently dieting, and 48.8% were on a diet before. Based on the response pattern the authors estimated a prevalence of 3% for Bulimia Nervosa. In addition, 13.2% of the subjects reported at least 2 binge eating episodes a week. Finally, Carmo *et al.*(1999) surveyed 2,398 female high school students, aged 10 to 21, from the Lisbon and Setúbal metropolitan area. Based on participants responses the authors estimated a prevalence of .37% for Anorexia Nervosa, and 12.6% for partial syndromes of Anorexia Nervosa (all symptoms but amnorrea). Independently of possible eating disorder diagnosis, 38% of participants with low or normal weight wished to loose weight, 49% stated that one region of their bodies was to fat and 51% were terrified with the idea of gaining weight. Most recently, Pocinho (1999) surveyed 549 (224 male and 325 female) high school and university students, aged 12 to 22 years old, from the Coimbra area. Based on responses to a self-reported questionnaire the author estimated a prevalence, amongst female participants, of .60% for anorexia nervosa, 1.2% for bulimia nervosa, and 19% for eating disorder not otherwise specified. The fact that there is a considerable number of young women with eating disorders or associated clinical features, and that first year college students might be in a particular risk for development of such disorders has promoted interest in research over psychological intervention in group format for Portuguese students with eating problems (e.g., Machado, Gonçalves, Machado, Santos, and Santos, 2001)

In Spain, interest around research on eating disorders also rose in the eighties. Toro (2003) in a recent review of the epidemiological literature on eating disorders in Spain identifies two published, two-stage, methodologically sound studies. The first one (Morande and Casas, 1997), was carried amongst a representative sample of 15 year old age women from the Madrid metropolitan area, and identified prevalence data of .69% for Anorexia Nervosa, 1.24% for Bulimia Nervosa and 2.76% for EDNOS, according to DSM-III-R diagnostic criteria. The second one (Pérez-Gaspar, Gual, De Irala-Estévez, Martínez-González, Lahortiga, and Cervera, 2000), used a sample with a widest age range, from 12 to 21 years old. The estimated overall prevalence for eating disorders according to DSM-IV criteria was 4.1%. Specific breakdown, was .30% for

AN, .80% for BN, and 3.1% for EDNOS. Two other unpublished studies (see Toro, 2003 for a review) held similar results to the ones presented before. Currently available data on the prevalence of eating disorders shows rates similar to the ones found in other European countries (Toro, 2003) namely: from .14 to .88% for AN, .37 to 1.24 for BN, and 2.76 to 3.99 for EDNOS. In addition, previous research has showed that Spanish female college students are particularly preoccupied with their weight and body image (Fernández, Otero, Castro, and Prieto, 2003)

Most of the epidemiological studies carried in the Iberian Peninsula up to now, draw samples from large urban areas (e.g., Madrid and Lisbon), however, both Spain and Portugal are known by their cultural diversity between regions and provinces. The purpose of the current survey descriptive study (Montero and León, 2002) was to assess the presence of disordered eating behaviors and attitudes in college women attending university campuses in the Northwest of the Iberian Peninsula, namely in the Minho area of Portugal and the Galicia province of Spain. The current paper followed the guidelines proposed by Bobenrieth (2002).

Method

Participants

All participants were volunteer college female students, from the North of Portugal (Minho) and Northwest of Spain (Galicia), these adjacent areas of the Iberian Peninsula are known to share considerable cultural characteristics. The students from all majors represented on each campus were asked to participate in a study designed to assess eating habits of college students. Data was collected from 486 freshman females from a large university campus of the North of Portugal (Minho), and from 595 freshman females from two large university campuses of the Northwest of Spain (Galicia). The age of the Portuguese participants ranged from 17 to 35 years old, and mean age was 19.42 (SD = 2.27) years old, and most of the students (69%) were from a medium social economic status group. In Spain, age of participants ranged from 17 to 44 years old, and mean age was 19.2 (SD = 2.23) years old, and most of the students (76.6%) were, also, from a medium social economic status group. Demographic data on both Spanish and Portuguese samples is presented on Table 1.

Measures

Eating Disorders Inventory (EDI; Garner, Olmsted, and Polivy, 1983). The EDI is a frequently used 64 items self-report measure of eating related attitudes and behaviors. Subjects are asked to respond to 6-point forced choice format by rating how much the item applies to them. Options range from "always" to "never". The most extreme eating disorder like response earns a score of 3, the immediately before earns a 2, and the next response earns a 1. The other three responses receive no score. Scale scores are the sum of all items for that particular subscale. The Portuguese version of the EDI used in the current study was translated, for research purposes, into Portuguese by the clinical team of Santa Maria Hospital, in Lisbon. This version showed adequate indices of internal

TABLE 1. Demographic characteristics of the Portuguese and Spanish samples.

	Minho (Portugal) sample N = 484			Galicia (Spain) Sample N = 595		
	M	SD	Range	M	SD	Range
Age	19.42	2.27	17-35	19.53	2.44	17-44
Height(m)	1.64	.06	1.50 – 1.80	1.65	.06	1.45-1.86
Weight (kg)	56.4	6.72	42-90	57.8	7.68	41-100
BMI	21.0	2.27	16.6 – 33.3	21.28	2.85	15.61-35.16

consistency, Cronbach´s Alpha was .93 for the total scale, and ranged from .69 to .91 for the subscales, the factorial structure of the original scale was also reproduced with a Portuguese sample (Machado, Gonçalves, Martins, and Soares, 2001). The Spanish version of the EDI was translated by Guimera and Torrubia (1987), and also showed adequate indices of internal consistency, Cronbach´s Alpha ranged from .74 to .92 for the subscales. In addiction to the EDI subjects filled a questionnaire with demographic information and questions regarding their weight, height, eating habits and attitudes towards food and eating, this questionnaire included questions tagged to DSM-IV criteria for eating disorders and was based on instruments developed in the context of the Collaborative European Project on Eating Disorders (COST Action B6, see Machado and Soares, 2000).

Procedure

All participants were volunteers recruited in a university class setting. Both instruments were administered in group either before or after a class with the agreement of the instructor.

Analysis

First average scores of the EDI data from both university samples are compared. In addition and for each of the samples subjects are divided is two groups according to their EDI total score. Those scoring above 43 were considered at risk for eating disorders, because their individual scores were closer to the clinical population than the normal one, according to a cutoff score computed in another study for the Portuguese population (Machado *et al.,* 2001). This cutoff score was based on the formula provided by Jacobson and Truax (1991) for clinical significant change. This formula provides a score that represents the point where a subject is closer to the mean of the normal sample than to the mean of the clinical population, and vice-versa.

These two subgroups of high scorers, from each sample, were then compared in terms of clinical features of eating disorders as assessed by the self-report questionnaire. Presence of possible symptoms of eating disorder was based on participant's self-report answers to the eating-habits questionnaire. To assess presence of body image distortion an index was computed comparing the subject actual BMI with a fake BMI that corresponded to the way that the subject perceived herself, for example a subject that rated herself as too fat and had a low BMI would be considered to have distortion of body image. This procedure was developed by Richard (1998) for the European Collaborative Study for the Treatment of Eating Disorders COST-B6 (c.f., Machado and Soares, 2000).

Subjects were classified as possible cases of anorexia nervosa when endorsing: (1) moderate to severe fear of gaining weight; (2) a BMI lower than 17.5; (3) body image distortion; and, (4) absence of menstrual cycle when not taking birth control pill. Subjects were classified as possible cases of bulimia nervosa when endorsing: (1) Two or more binges per week; (2) use of any compensatory method at least twice a week; and (3) a normal range BMI, or above. Subjects fulfilling the Bulimia Nervosa criteria but not reporting compensatory methods were considered possible cases of Binge Eating Disorder.

Results

Table 2 presents a comparison of the group means for each of the EDI subscales and total score for the Portuguese and Spanish sample that participated in the current study, and clinical cases from the Machado *et al.* (2001) study. Inspection of Table 2 reveals a similarity of responses, between the two groups that participated in this study, across all eight subscales and total score, and both samples scored significantly lower than the Portuguese clinical samples (p<.05). However the Spanish sample presented higher values for all the subscales, but the body dissatisfaction one, than the Portuguese sample, Student-*t* values ranged from 2.26 for perfectionism and 9.18 for the Maturity Fears subscale, all other *t* values are presented in Table 2.

TABLE 2. Mean scores and SD for subscales and total score by sub-group.

	College population			Anorexia (N= 55)	Bulimia[1] (N= 28)	t[2] df= 1076
	Total sample (N= 1077)	Minho Pt (N= 484)	Galicia Es (N= 595)			
Drive for Thinness	3.93 (5.29)	3.43 (5.03)	4.32 (5.46)	8,78 (6,91)	15,21 (4,70)	2.79 *
Bulimia	1.18 (2.41)	.98 (2.05)	1.35 (2.65)	2,75 (4,53)	11,55 (6,06)	2.53 *
Body Dissatisfaction	7.74 (6.97)	7.30 (6.60)	8.10 (7.24)	9,11 (5,65)	14,77 (8,53)	1.88
Ineffectiveness	3.00 (3.71)	2.03 (3.00)	3.79 (4.03)	8,22 (7,24)	11,44 (9,07)	8.01 *
Perfectionism	4.70 (3.66)	4.42 (3,39)	4.93 (3.51)	6,00 (3,80)	7,52 (5,00)	2.26
Interpersonal Distrust	3.59 (3.38)	2.61 (2,92)	4.38 (3.51)	5,85 (3,99)	6,81 (5,41)	8.87 *
Interoceptive Awareness	3.46 (3.95)	2.78 (3.33)	3.40 (4.31)	8,53 (6,00)	10,37 (7,92)	5.08 *
Maturity Fears	5.95 (4.40)	4.63 (3.96)	7.02 (4.44)	8,51 (5,83)	7,55 (6,49)	9.18 *
Total	33.61 (22.52)	28.23 (19.28)	37.90 (23.96)	59.24 (28.71)	88.88 (36.07)	

[1] Data from Portuguese clinical population (Machado *et al.*, 2001).
[2] Comparing Portuguese and Spanish samples.
* p<.05

When participants individual EDI scores were analyzed 89 out of the 484 in the Portuguese sample and 194 out of the 595 in the Spanish sample scored above 43, which put them closer to the scores of the clinical population than the normal population. A subsequent analysis of the eating related habits and attitudes was carried to assess possible presence of disordered eating. Table 3 shows the presence of behaviors and attitudes related with the possible presence of Anorexia Nervosa and Bulimia Nervosa.

TABLE 3. Possible cases of Eating Disorders amongst Portuguese and Spanish college students, based on self-reported eating habits and attitudes. Frequencies are cumulative (e.g. for the Portuguese sample of the 150 students that reported fear of gaining weight, one had a BMI of less than 17.5; and for the Spanish sample of the 21 students that reported bingeing more than twice a week, 14 reported compensatory behaviors).

	Minho (n = 484)		Galicia (n = 595)		Total (n = 1079)	
SYMPTOMS	n	%	n	%	n	%
AN1: Fear of gaining weight	150	31	270	45	420	39
AN2: BMI < 17.5	1	.2	3	.5	4	.4
AN3: Body image distortion	1	.2	1	.2	2	.2
AN4: Amenorrhea	0	0	0	0	0	0
BN1: Binges more than 2x week	50	10.3	21	3.5	71	6.6
BN2: Compensatory behaviors	29	6.0	14	2.4	43	4.0
POSSIBLE CASES						
Anorexia Nervosa	0	0	0	0	0	0
Anorexia Nervosa: partial syndrome	1	.2	1	0.2	2	.2
Bulimia Nervosa	29	6.0	14	2.4	43	4.0
Binge eating disorder	50	10.3	21	3.5	71	6.6
Total ED cases	80	16.3	36	6.1	96	8.9

Looking at Anorexia Nervosa key symptoms, we found that 31% in the Portuguese sample and 45% in the Spanish sample reported significant fear of gaining weight. Only 1 in the Portuguese sample and 3 in the Spanish one reported Body image distortion, and clinically significant low weight was reported only by one student from each sample. No student reported amenorrhea. Looking at the symptoms of Bulimia Nervosa 10.3% of the Portuguese students and 3.5% of the Spanish ones reported bingeing more than twice a week. Compensatory behaviors of any type were reported by 6% of the Portuguese sample and 2.4% of the Spanish one. Finally, when we consider all possible cases of eating disorders detected amongst college women from the Northwest region of the Iberian Peninsula. Data suggests an average 4.0% prevalence for Bulimia Nervosa.

No cases of Anorexia Nervosa were detected although two case of sub-syndrome Anorexia Nervosa are plausible.

Discussion

Data suggests that some of features of eating disorders are quite common in these college populations. An inspection of the EDI subscales revealed high scores of Body Dissatisfaction amongst female college students in the Northwest of the Iberian Peninsula. Although, the Spanish sample tended to score significantly higher than the Portuguese sample in almost all of the EDI subscales, both samples scored significantly lower that the clinical population used as reference is the current study. However presence of features usually associated with eating disorders seems clear. When participants were classified to their total EDI scores a considerable number had scores that were closer to the clinical population mean than the normal one. When is addition to this, we considered the presence of clinical symptoms of eating disorders, although we haven't found any case of Anorexia Nervosa, we found 43 possible cases of Bulimia Nervosa. Based on this self reported data, it is estimated that the prevalence of eating disorders on these peripheral areas of both countries is not significantly different than what is common in other European areas or countries. Curiously, although the mean EDI scores were highest amongst Spanish college students fewer students reported symptoms that allowed the detection of possible cases of eating disorders. Results in the Portuguese sample revealed higher prevalence of Bulimia Nervosa than previous reports for example an estimated 6% compared to the 3% found in the Baptista *et al.* (1996) study. Prevalence estimates in the Spanish sample are also higher than the ones on the previously reported studies.

In summary, both the high EDI scores and the prevalence of possible cases of eating disorders amongst these college samples seem significant. It also raises concerns in terms of public health, and reminds us of the need to develop and implement sound efficacious programs for prevention, early detection and treatment of eating disorder, especially in a at risk population like the one participating in this study. However, the limited geographical area where this study was carried out, the relatively small number of participants, and the self reported nature of the collect data, preclude more definite conclusions. It is clear that carefully controlled two-stage epidemiological studies drawn from nationally representative samples are needed in both Spain and Portugal. In Spain, where these studies already exist, there might be a need to expand the age span of participants to include older ones, like college students. However, current findings are probably sufficient to understand that even the lees economically privileged and peripheral areas of Portugal and Spain are not immune to this kind of disorders.

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