

Abnormal Eating Behaviors among Medical Students at a University in Southern Santa Catarina, Brazil

Prevalência de Transtornos de Comportamentos Alimentares entre Estudantes de Medicina de uma Universidade do Sul de Santa Catarina, Brasil

Vivian Comelli Alberton¹
Márcio José Dal-Bó¹
Anna Paula Piovezan^{II}
Rosemeri Maurici da Silva^{II}

KEYWORDS:

- Eating disorders;
- Eating behavior;
- Medical students.

PALAVRAS-CHAVE:

- Transtornos alimentares;
- Comportamento alimentar;
- Estudantes de Medicina.

Recebido em: 27/03/2012

Reencaminhado em: 06/07/2012

Reencaminhado em: 09/10/2012

Reencaminhado em: 20/11/2012

Aprovado em: 02/12/2012

ABSTRACT

Objectives: Disturbances in eating behavior significantly affect young adults. This study aimed to estimate the prevalence of abnormal eating behaviors, according to the Eating Attitudes Test - 26 (EAT-26) in medical students at a university in southern Santa Catarina State, Brazil. **Methods:** Self-reported questionnaire, based on the EAT-26 scale, was administered to medical students. Additional questions about age, gender, study period of the course, weight and height were asked. A total of 391 medical students were assessed, amounting to 93.3 percent of the 419 students enrolled. **Results:** Ten percent of the surveyed subjects had positive EAT-26 scores. This outcome measure was positive associated with females (PR 6.5), body mass index (BMI) ≤ 25 kg/m² (PR 4.5), age ≤ 20 years (PR 1.3) and being student from 1st to 5th semester of the course (PR 1.7). A higher proportion of women gave positive responses to behaviors related to control of food intake or weight loss than men. **Conclusion:** The significant prevalence of behaviors related to eating disorders, predominantly among women, suggests the implementation of preventive measures targeting this population.

RESUMO

Objetivo: Transtornos de comportamento alimentar afetam significativamente os adultos jovens. Este estudo estimou a prevalência de comportamentos alimentares anormais, em estudantes de medicina de uma universidade do sul de Santa Catarina. **Método:** Um questionário baseado na escala Eating Attitudes Test-26 (EAT-26) foi administrado aos estudantes regularmente matriculados entre o sexto e décimo semestre do curso. Questionou-se ainda a idade, sexo, período do curso em que estavam matriculados, peso e altura. Dos 419 estudantes matriculados, 391 (93,3%) foram avaliados. **Resultados:** Dez por cento dos indivíduos apresentaram escore positivo ao EAT-26. Houve associação positiva deste desfecho com sexo feminino (RP 6,5), índice de massa corporal ≤ 25 kg/m² (RP 4,5), idade menor do que 20 anos (RP 1,3) e estar cursando do primeiro ao quinto semestre do curso (RP 1,7). Maior proporção de mulheres, em comparação aos homens, responderam positivamente a questões de comportamentos relacionados ao controle da ingestão alimentar ou perda de peso. **Conclusão:** A prevalência significativa de comportamentos relacionados a distúrbios alimentares, predominantemente entre mulheres, sugere a implementação de medidas preventivas nesta população.

¹ University of Southern Santa Catarina, Tubarão, Santa Catarina, Brazil.

^{II} Post-Graduation on Health Sciences Program, University of Southern Santa Catarina, Brazil.

INTRODUCTION

Eating disorders (ED) – anorexia nervosa (AN), bulimia nervosa (BN) and binge eating disorder (BED) – are behavioral syndromes whose diagnostic criteria have been widely studied over the past thirty years^{1,2}. The media conveys the message of beauty and happiness associated with a lean body and generates extreme concern with weight and body shape, which certain individuals try to adapt to in order to be accepted and appreciated. This is a major cause for the development of EDs, especially in women^{2,3}. However, other studies indicate the complexity of the interactions among other factors, and these may increase the chance of development, precipitate the onset or determine the perpetuation of them^{4,5}.

EDs have a global incidence, and studies show significant prevalence in developed countries like the U.S.⁶, Japan⁴, Norway⁷ and European nations^{8,9}, as well as in developing countries like Brazil¹⁰. These studies indicate an increased incidence of such disorders, mainly related to sociocultural, professional and socioeconomic issues, and young adults are particularly susceptible.

Severe clinical complications are related to EDs, especially involving compromised nutritional status due to the delay in diagnosis or treatment, which can lead to metabolic, endocrine, electrolyte, hematologic, cardiac and renal alterations^{11,12}. On the other hand, morbidity and mortality rates associated with ED are also significant and may be associated, for example, with the use of other substances¹³ and even to suicide¹⁴.

EDs are increasingly the focus of attention of health professionals, because they lead to personal and social injury. The need to understand the phenomenon, as well as allocation of adequate resources, stimulates the conduct of epidemiological studies. Given the above, the present study aimed to estimate the prevalence of abnormal eating behaviors in medical students at a university in southern Santa Catarina, Brazil.

PATIENTS AND METHODS

A cross-sectional study was conducted using the data collected from a self-administered questionnaire¹⁵. All medical school students from the first to the tenth semester enrolled in a university in southern Santa Catarina, Brazil, between August and October 2005, were assessed. They agreed to participate by signing an informed consent form. Failure to fully complete the questionnaire was used as an exclusion criterion. At the day of the questionnaire administrations, during regular class

periods in their respective classrooms, with the responsible teacher's consent, subjects were clarified by the researchers about the aims of the study and received instructions to complete the questionnaire. After this, researchers distributed the instrument to be filled by students.

The self-administered questionnaire consisted of questions related to the Eating Attitudes Test-26, from the version translated¹⁶ and validated¹⁷ into Portuguese. A pilot test was not performed since EAT scale has been widely used as a standardized self-report measure of symptoms and concerns of eating disorders. EAT-26 total score greater than or equal to 21 denoted the existence of pathological eating attitudes and risk for developing eating disorders, being considered positive for disordered eating patterns.

Additional information about the surveyed subjects included age, gender, course term, height in centimeters and weight in kilograms. The latter two allowed us to calculate the body mass index (BMI) in Kg/m² (weight divided by height squared).

The research project was approved by the Human Research Ethics of the University, allied to CONEP, under the number 05.262.4.01.III. Data were entered into EpiData software version 3.1 and analyzed using Epi info version 6.04. The results were presented as absolute numbers and percentages, and associations as prevalence ratio (PR).

RESULTS

Of the 419 students enrolled, 28 (6.7%) refused to participate. The final sample consisted of 391 subjects, consisting in 93.3% from population, being represented by 200 females (51.2%) and 191 males (48.8%). Of these, 39 had positive EAT-26 scores (34 females and five males), which corresponds to 10 percent of the surveyed population.

Most participants were younger than 20 years old (70.1%), had BMI <25 kg/m² (81.1%) and were studying within the 6th and the 10th semester of the course (50.9%).

Table 1 shows the total frequency of the most common answers to the questionnaire and its distribution by gender. Overall, the response option "never" showed the highest frequency among the surveyed subjects. In addition, in 18 out of the 26 questions there was gender-related difference in the proportion of responses. In 17 of them (questions 1, 3, 5-7, 10, 11, 13-21 and 23), the proportion of men who responded "never" was higher than in the proportion of women who gave the same answer. The most frequent response for question number 9 was "always" and the proportion of men who gave that answer was, again, greater than that of women.

TABLE 1

Total frequency of the most common answers to the questionnaire and its distribution by gender (Tubarão-SC, 2009; n= 391).

Question number	Answer	Total n=391	Gender	
			Female (n=200)	Male (n=191)
1. I am engaged in dieting behavior.	Never	143	40	103
2. I eat diet foods.	Rarely	99	44	55
3. I feel uncomfortable after eating sweets.	Never	203	72	131
4. I like to eat fat foods.	Sometimes	142	74	68
5. I avoid foods containing sugar.	Never	138	51	87
6. I avoid food with a high carbohydrate content.	Never	162	61	101
7. I am preoccupied with a desire to be thinner.	Never	128	34	94
8. I like my stomach to be empty.	Never	240	115	125
9. I think about burning calories when I exercise.	Always	101	70	31
10. I feel guilty after eating.	Never	176	60	116
11. I am terrified about being overweight.	Never	139	32	107
12. I am preoccupied with the thought of having fat on my body.	Sometimes	96	49	47
13. I am aware of calories content of foods that I eat.	Never	178	70	108
14. I have the impulse to vomit after meals.	Never	345	165	180
15. I vomit after I have eaten.	Never	367	181	186
16. I have gone on eating binges where I feel that I may not be able to stop.	Never	259	117	142
17. I give too much time and thought to food.	Never	147	57	90
18. I find myself preoccupied with food.	Never	130	46	84
19. I feel that food controls my life.	Never	290	128	162
20. I cut my food into small pieces.	Never	133	54	79
21. I take longer than others to eat my meals.	Never	120	52	68
22. Other people think that I am too thin.	Never	192	98	94
23. I feel that others would prefer if I ate more.	Never	250	118	132
24. I feel that others pressure me to eat.	Never	280	135	145
25. I avoid eating when I am hungry.	Never	278	135	143
26. I display self-control around food.	Sometimes	113	65	48

Table 2 presents the association of positive EAT-26 with other variables. The proportion of subjects with positive EAT-26 scores was higher among females compared to males (PR 6.5), as well as among individuals with BMI <25 kg/m² than in those with BMI > 25 kg/m² (PR 4.5), age less or equal 20 years old (PR 1.3), and 1st – 5th semester (PR 1.7). Among women

with positive EAT-26 scores, most were in the age group <20 years old; with regard to BMI assessment, most students had normal weight, or were below normal weight. Most overweight or obese students were studying within the sixth and tenth semester (data not shown).

TABLE 2
Distribution of EAT-26 scores by gender, age,
BMI and study semester
(Tubarão-SC, 2009; n= 391)

Variable	EAT-26 scores		PR (Prevalence Ratio)
	Positive, % (n)	Negative, % (n)	
Gender			
Female (n= 200)	34 (17.0)	166 (83.0)	6.5
Male (n= 191)	5 (2.6)	186 (97.4)	
Age (years)			
< 20 (n= 117)	14 (12.0)	103 (88.0)	1.3
> 20 (n= 274)	25 (9.1)	249 (90.9)	
BMI (Kg/m ²)			
< 25 (n= 317)	39 (12.3)	278 (87.7)	4.5
> 25 (n= 74)	2 (2.7)	72 (97.3)	
Study semester			
1st-5th (n= 192)	24 (12.5)	168 (87.5)	1.7
6th-10th (n= 199)	15 (7.5)	184 (92.5)	

DISCUSSION AND CONCLUSIONS

This study reported a significant prevalence of pathological eating attitudes, with risk for the development of eating disorders among medical students at a university in southern Brazil, using the Eating Attitudes Test questionnaire as an assessment tool.

The prevalence of 10 percent found in this study is close to that reported in studies using similar methodology in other countries. In elementary schools in Spain was reported that 9.4 percent of students between 12 and 18 years of age had scores consistent with the presence of altered eating behavior¹⁸, while among university students in Puerto Rico, with median age of 18.3 years, the percentage for these alterations was 9.6 percent¹⁹. In other studies, even higher prevalence rates in similar populations were observed. The percentage of elementary school students who are at risk for developing eating disorders in northern Israel was 25.8 percent²⁰, while in Greece it was 16.7 percent⁸ and the United States it was about 18 percent, according to a nationwide study²¹. Among university students in the United Arab Emirates, 24.6 percent of a sample study was classified into the category of risk for eating disorders²², while in cities of Turkey²³ and Spain²⁴, these scores were 22.8 percent and 17.6 percent, respectively. Finally, a study conducted among medical students in Brazil showed that 5.5 percent of them were at high risk for developing anorexia nervosa²⁵, and this percentage is well below of that found in women in this study.

Another important finding of this study was that a high proportion of females or subjects with BMI less than 25 kg/m² had positive EAT-26 scores. In studies conducted in China²⁶, the majority of medical students with positive EAT-26 scores were female. Similar results were found among other college students in different countries^{23,24}, as well as among younger students⁸. In Brazil, this profile was also observed in relation to binge-type eating disorder in a population-based study of adolescents in Cuiabá, Mato Grosso State, in which the prevalence was also higher in females than in males²⁷. With respect to BMI, the results contrast with the findings of other authors who demonstrated that low weight college students had lower EAT-26 scores than those with high weight²³.

Regarding the possible reasons that this can occur, it was discussed that a positive body image is associated with lower food risk attitudes²⁸. It is known, however, that women tend to be more influenced than men by culture and media that idealize thinness as the epitome of beauty. This could explain why in the present study women gave positive answers in greater proportion than men to questions related to thinness, for example, involving control of food intake or weight loss (Table 1). Also, if taken to extremes, such concerns could lead to a situation of stress, which can contribute as a risk factor for developing eating disorders²⁹.

Still on this factor, it is argued that health area students, and especially medical students, are subject to stress, which increases over the years because of the course requirements, responsibilities and self-demand. However, according to criteria used in this study positive EAT-26 was associated with initial in relation to the last phase of the course (PR 1.7). Finally, in accordance with other authors³⁰, we also found a higher prevalence of eating disorders among female students in early stage of medical school, suggesting that this may be due to the fact that they are closer to the adolescence phase, which is known to be vulnerable to this type of disorder.

Concerning to the limits of the research, it is possible to discuss that the design of the study as cross-sectional study, as well as the instrument of evaluation in form of a self-reported questionnaire, or the statistic test employed in its analysis, may lead to restrictions in event comprehension.

CONCLUSION

In conclusion, the significant prevalence of eating disorder behaviors among medical students, especially women, suggests the need for further research to identify the causes and to facilitate planning of prevention activities.

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AUTHORS' CONTRIBUTION

Vivian C. Alberton and Márcio J. Dal Bó were involved in the study's planning and its write. Anna Paula Piovezan was in-

involved in data analysis and writing the manuscript. Rosemeri M. da Silva was involved in data analysis, in the writing and reviewing the manuscript.

CONFLICTS OF INTEREST

The authors declared no conflicts of interest.

CORRESPONDENCE ADDRESS

Anna Paula Piovezan
Av. José Acácio Moreira, 787
DEHON – Tubarão
CEP. 88704-900 – SC
E-mail: anna.piovezan@unisul.br