



Self-image disorders and susceptibility for the development of eating disorders in medicine academics: a cross-sectional observational study

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Abstract

Introduction: when talking about eating disorders (ED), reflects a lot on how it affects young people and, currently, it is known that the most varied types of ED are quite prevalent in the university environment, with medical students being part of this groups that are significantly exposed to the onset of ED. The development of these disorders is commonly associated with self-image disorders, while body dissatisfaction is precisely one of the diagnostic criteria for ED.

Objective: identify the prevalence of body dissatisfaction among medical students and how it affects the susceptibility to the development of eating disorders, relating this information to the impact of the pandemic and the gender of the participants. **Methods:** a cross-sectional observational study, with a quality-quantitative data approach. The research was carried out with medical students of both sexes, over 18 years old, through the application of an online questionnaire, which allowed the sample to be characterized in terms of sociodemographic and anthropometric aspects. In addition, the occurrence of self-image disorders was evaluated through the Kakeshita Silhouette Scale and the risk of developing ED through the Eating Attitudes Test (EAT 26). For statistical analysis, differences in EAT scores between categories were assessed using the Independent T-Test and the proportion of participants with self-image disorder was compared using Fisher's exact test. **Results:** 268 participants were included in the research, with a mean age of 21.23 years (standard deviation = 2.47), with 216 female participants (80.6%) and 52 male participants (19.4%). The body mass and height were self-reported by the students to calculate

the body mass index (BMI), whose mean value was 23.57 (standard deviation = 4.79), showing that 27.6% of the participants are above the weight or obesity (BMI > 25) and 4.85% with low weight (BMI < 18.5). The present study showed a positive correlation between self-image disorders and eating disorders ($p = 0.0002$), regardless of the individual's gender. For the variables evaluated, there was no significant difference between genders ($p = 0$). Furthermore, the current COVID-19 pandemic is not an influential factor in the increase in self-image disorders among participants. **Conclusion:** through the study, it became evident that students who have self-image disorders have a higher risk of developing eating disorders. In addition, a significant part of the participants is dissatisfied with their bodies, regardless of gender or the impacts brought about by the pandemic.

Keywords: Eating behavior. Body image. Medical students.

Introduction

The first investigations on body image and its associated aspects emerged in the field of neurology, but it is currently the focus of study and interest in different areas, especially professionals working with health education [1,2]. It can be seen that, throughout the formation of body image, several variables are involved, such as cognitive, emotional, cultural and physical aspects. In addition, body esteem and body dissatisfaction are constitutive components of the self-image, with dissatisfaction being an aspect that concerns the excessively negative assessment of weight, physical shape and body fat [3-5].

Concerning eating disorders (ED), they include bulimia nervosa, anorexia nervosa, compulsive eating disorder, restrictive eating disorder, among other eating disorders, which, by definition, are characterized as multifactorial and persistent psychiatric disorders of eating that generate harm to people. the health of the individual and for the correct biopsychosocial functioning [6,7].

Diagnosis of eating disorders is based on the Diagnostic and Statistical Manual of Mental Disorders - V (DSM-V), which is based on dividing eating disorders into mutually exclusive categories, based on the observation of symptoms presented by patients [6,8]. In addition, for the correct and comprehensive screening of eating disorders, it is essential to collect a well-directed anamnesis and to use questionnaires as screening instruments, for example the Eating Attitudes Test (EAT), the Bulimic Investigatory Test of Edinburgh (BITE) and the body image test [9,10].

It is also noticed that the development of eating disorders is commonly associated with self-image disorders, while body dissatisfaction is precisely one of the diagnostic criteria of EDs [3,5]. Thus, the mental images that each subject creates about himself, to his body, have a marked impact on the appearance of eating disorders, which significantly affect the health and well-being of the individual, since disorders related to Distorted consumption, eating patterns and attitudes can lead to severe self-depreciation, various medical complications, increased risk of other mental illnesses, including increased risk of suicide [7].

Several factors are identified as risk factors for the development of both body image perception disorders and eating disorders. As an example of risk factors, there are low self-esteem, states of social anxiety and depression, troubled relationship with food, being female, being a teenager, attending university [1,9,11,12].

Thus, it is noteworthy that the various types of eating disorders are quite prevalent in the university environment, with medical students being part of this group that is significantly exposed to the onset of ED, given the fact that they are subjected to a high level of stress. (high workload, curricular and extracurricular activities to be carried out, self-demand, body image distortion, overweight, bad eating and consumption habits, etc.) [9]. Furthermore, the presence of such factors in this group is associated with a high prevalence of mental health problems among medical students, which further reinforces the risk of developing self-image disorders and eating disorders among this group [9,13].

Besides, another point to be considered concerns

the new challenges brought by the COVID-19 pandemic. Faced with the pandemic caused by the new coronavirus, Sars-CoV-2, the routine and way of life of almost the entire population have changed in several aspects, directly impacting the physical and mental health of individuals, and, consequently, bringing positive results. in the worsening of eating disorders. The increase in the availability of food, the longer time at home, the increase in symptoms of anxiety and depression, the fatigue caused by social isolation, the fear and insecurity of contracting the disease, the lack of perspective for the end of the pandemic, are some of the risk factors that unfold into emotional hunger, compulsive eating and the subsequent development of eating disorders [14].

From this perspective, the present study aimed to map the aspects related to body dissatisfaction and the susceptibility to the emergence of eating disorders in medical students, taking into account the different aspects and factors involved, to contribute to the detailing of this subject and to better understand the impact that body image disorders and eating disorders cause in this group of students.

Therefore, the present study aimed to identify the prevalence of self-image disorders among medical school students and how this affects their susceptibility to developing eating disorders, as well as to verify the relationship between the increase in self-image disorders and eating disorders and the pandemic. of Covid-19 between females and males.

Methods

Study Design

A cross-sectional observational study was followed, with a qualitative-quantitative approach to the data, according to STROBE (<https://www.strobe-statement.org/>).

Interventions and Application of Questionnaires

Data collection took place through the application of an online Google Forms questionnaire, composed of open and closed questions, disseminated among university students of medicine courses in Brazil. The sample consisted of 268 medical students of both sexes and over 18 years of age. The first part of the questionnaire allowed characterizing the sample in terms of sociodemographic aspects (age, sex, year of college, weight, and height). The second part evaluated the perception that individuals have of their bodies through the Silhouette Figures Scale, an instrument applied and validated by Kakeshita et al (2006). In

addition, the relationship between the participants' diet and the current COVID-19 pandemic was also investigated. In the third and last part of the questionnaire, the Eating Attitudes Test (EAT-26) was used. The version used of the instrument comprises 26 questions in the form of a Likert scale of points, divided into 3 analysis factors: I) diet scale, II) bulimia and food preoccupation scale and III) oral self-control scale. From the answers obtained, a score was calculated, and, for the present study, the cutoff point 21 was considered, that is, people with 21 points or more in the score were classified as at greater risk for the development of eating disorders.

Ethical Approval

This study was analyzed and approved by the Research Ethics Committee (CEP) according to a substantiated opinion number 4.871.547, and obtaining the patient's consent through the Informed Consent Form (TCLE) according to CNS/CONEP Resolution 466/12.

Statistical Analysis

Statistical analyzes of the data were performed using Microsoft Office Excel (2016) and Python 3.7.6 (SciPy 1.4.1), and the differences in the EAT score

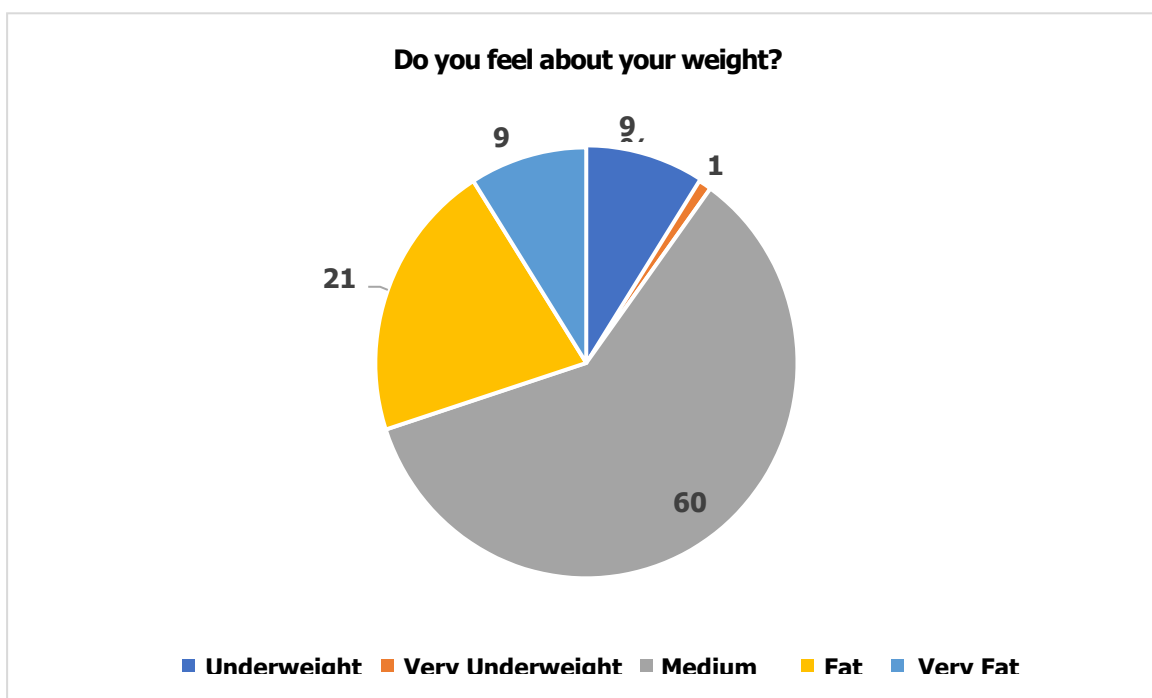
between the categories were evaluated using the independent T-test and the proportion of participants with self-image disorder was compared using Fisher's Exact Test.

Results

A total of 268 participants were included in the research, with a mean age of 21.23 years (standard deviation = 2.47), with 216 female participants (80.6%) and 52 male (19.4%). Body mass and height were self-reported by students to calculate the Body Mass Index (BMI), whose average value was 23.57 (standard deviation = 4.79), showing that 27.6% of participants are overweight or obese (BMI > 25) and 4.85% were underweight (BMI < 18.5). Of the total number of participants, 181 are normal weight, 13 are underweight, 55 are Overweight, 15 are obese grade I, 3 are obese grade II and 1 participant is obese grade III.

The present study showed a positive correlation between self-image disorders and eating disorders (p=0.0002), regardless of the individual's gender. For the variables analyzed, no significant difference was found between the sexes (p=0). To their weight, 160 feel "mean", that is, neither above nor below (Figure 1).

Figure 1. Feeling about body weight.



Also, almost half of people (131) avoid situations in which others can see their bodies, for example changing rooms, swimming in the pool, or clothing that emphasizes body shapes. When approached about the COVID-19 pandemic, before it 108 (40%) were on weight-loss regimes, during that number it grew to 115 (43%). Another index that increased was about having exaggerated eating episodes, in which before the pandemic 178 (67%) had already had and during 190 (71%) they had these incidents. In addition, before the pandemic, 64% were not in the habit of continuing to eat compulsively, feeling that they could not stop), while during the COVID-19 outbreak this number dropped to 53%. However, it can be concluded that the current COVID-19 pandemic did not prove to be an influential factor in the increase of self-image disorders among the participants.

Discussion

Previous studies have already proven that body dissatisfaction leads to a series of general impairments in human behavior, such as low self-esteem, anxiety, and social comparison [9]. Concerning body assessment itself, the individual is subject to cognitive distortions, such as dichotomous thinking about their appearance, unfair comparison with extremes, and selective attention to what bothers them. The sum of these behavioral changes and distortions to the high aesthetic pressure in our current society can lead to an exaggerated concern with weight and induce disorders in eating behavior [4,9]. Within the present study, it was possible to confirm the relationship between these two variables since, of 268 participants, 92.53% declared themselves dissatisfied with their current body and a positive correlation was evidenced between self-image disorders and eating disorders.

The study by Bosi (2014) showed that all perceptions that make up the formation of body image are filtered and transformed into meanings through psychological processes. However, when the senses become unbalanced, there is the possibility of triggering eating disorders [15]. In this way, it is noted that the perception of one's own body is something complex that involves cognitive, emotional, social, and cultural aspects, thus, it is variable and the beginning of changes to one's image can be disguised in subtle concerns with appearance [16]. This could be proven when 28% of the sample stated that their body felt disproportionate in the thighs, hips, and buttocks region, as well as 49%, stated that they avoid situations in which people can see their physical structure (such as changing rooms, swimming pools or clothes that

make you notice shapes); in addition, 82% of the participants declared that they felt at a disadvantage when they noticed and compared themselves to the physique of others, all without considering the presence or absence of an adequate nutritional profile of the parties, proving that beauty standards often end up prevailing over others variables [16].

As for the life of university students specifically, Alvarenga et al. reported that Brazilian university students showed a high frequency of risk behaviors for eating disorders in all regions of the country [17]. Based on data analysis, it was observed that anxiety is an important variable, with 70% of the participants claiming to use food as a form of relief when placed in situations in which they find themselves, as well as in situations of various discomforts. In this sense, it is already known that the group represented by medical students is subjected to a high level of stress due to the high expected workload, curricular and extracurricular activities, self-demand, among others; all of this, in addition to other mental disorders that are prevalent on university campuses, such as anxiety and depression, may be directly related to body image distortion, inappropriate nutritional status, and overvaluation of weight [9].

Also, Guimarães (2018), through a study carried out with university students of pedagogy and nutrition courses in the state of Rio de Janeiro, found that 17% of the total percentage of students surveyed presented behaviors classified as eating disorders [18], while whereas in the present study, 29% of the participants claimed to have or have had EDs, which reinforces the hypothesis that medical students have an even higher risk for eating disorders and is in line with the study published by Sousa & Costa (2018).), which pointed to greater chances of health professionals to develop such disorders [19]. When asked how they feel about their weight, about 30% of respondents in this research said they felt fat or very fat and approximately 66% reported concern about the desire to be thin, a percentage similar to the study by Guimarães (2018), in which 69.4% of university students would like to have a slimmer body [18].

Furthermore, concerning BMI and body perception, 21% of the participants declared themselves "fat", while, in reality, 20.5% are only overweight and 5.5% are obese grade I; 9% consider themselves "very fat", while in practice the sum of obesity grades II and III scores only 1.4%. Other studies have already proved a positive association between obesity, desire to lose weight and vulnerability to the development of BED, being, therefore, a risk

factor [20]; however, there is a difference between the individual being out of the proper weight and feeling out of it, which considerably touches on the issue of self-image disorder and, consequently, can contribute to eating disorders. Equally important, people who feel underweight make up 9% of the sample, with only 4.8% being underweight.

Regarding the Eating Attitudes Test – EAT-26, the study by Aidar et al. [9] showed significant variations in the score of participants of different sexes: higher scores were identified in females compared to males. In contrast, the present study proved that in the researched group there is a high prevalence of body dissatisfaction, which statistically confers a higher risk for the development of eating disorders, however, this risk did not appear to be different between the sexes ($p = 0$), since, regardless of the individual's gender, there was a considerable correlation between self-image disorders and eating disorders ($p = 0.0002$).

Thus, in light of the data collected and relating it to aspects of the literature, this research confirmed the hypothesis that, among medical students and regardless of the individual's gender, there is a positive correlation between self-image disorders (assessed by the Silhouettes scale of Kakeshita) and the increased risk for the development of eating disorders (verified by the EAT-26), with a statistically significant correlation between both scales ($p = 0.0002$).

Besides, the present study was able to identify that the image chosen as desirable in the silhouette scale tended to be lower than those calculated by the individual's real BMI, a fact observed in both the male and female groups, which suggests, therefore, that both sexes value models of thinness and have a high prevalence of self-image disorders.

Regarding the new challenges brought about by the current health crisis faced with the emergence of the COVID-19 pandemic, a disease caused by the new coronavirus (Sars-CoV-2), it is noted that varied and profound changes in routine and way of life reached almost the entire population. This fact represents a significant potential for increasing mental health problems, among which the increased risk of developing eating disorders stands out [14,21].

Analyzing individually the questions that were asked comparing the period before the pandemic with the moment of validity of this event, it was noted that 10.8% of the participants stated that they had not had exaggerated episodes of eating before the pandemic, but that during this period, they have. In addition, it was possible to notice that 16.4% of the medical students who participated in this study did not have the habit of

continuing to eat compulsively and feeling that they could not stop, whereas they acquired this habit with the advent of the pandemic. These findings corroborate the study by Coutinho (2021), which showed that there is a relationship between the psychological effects of the pandemic and a consequent disorganization of eating behaviors, increasing food restriction, binge episodes and compensatory behaviors [21].

In the present study, when applying the Exact Fish Test, the current COVID-19 pandemic did not prove to be a statistically influential factor in the increase of self-image disorders among the participants. It is theorized that this fact may be due to the high rate of body dissatisfaction that is observed in this sample, that is, because they already have a higher percentage of self-image disorders, consequently a greater risk for EDs, the pandemic did not prove to be a factor that further accentuates the increase in this risk. In addition, according to a study by Cooper et al. (2020), it is possible to relate the pandemic context to a possible reduction of interpersonal social triggers associated with disordered eating behaviors, which occurs, for example, from the reduction of opportunities for social comparisons based on the body, as a result of the restrictions and social isolation measures imposed during the pandemic [22].

As limitations of this study, the limited sample size and the discrepancy observed between female (80.6%) and male (19.4%) participants are highlighted. Thus, new studies must be carried out, to prove or refute the findings of this research and contribute to a better understanding of the reality of eating disorders and self-image disorders in Brazil, especially among university students from medicine courses.

Conclusion

Because of the results of this work, it was observed that medical students with self-image disorders have a higher risk of developing eating disorders, which is demonstrated by the association of the Figures and Silhouettes Scale questionnaires and the Eating Attitudes Test. In addition, it was noted that regardless of gender, there is a prevalence of this disorder, identified by choosing a desired image with values lower than that calculated by the students' real BMI. However, the current COVID-19 pandemic was not a statistical factor influencing the results of participants with self-image disorders, although changes in routine and way of life during this period have driven irregular eating behavior, linked to psychological effects. In this sense, it is evident that risk behavior for Eating Disorder is frequent among medical universities. Therefore, based

on this study, it is necessary to apply multidisciplinary actions that promote reflection and discussion about the state of health in the academic community. In addition, it is extremely important to provide basic support to deconstruct aesthetic patterns and mental triggers, which have impacted balance and food safety, to prevent the incidence of serious complications in the student environment.

Acknowledgement

Not applicable.

Ethics approval

This study was analyzed and approved by the Research Ethics Committee (CEP) according to a substantiated opinion number **4.871.547**, and obtaining the patient's consent through the Informed Consent Form (TCLE) according to CNS/CONEP Resolution 466/12.

Informed consent

The participants signed the consent form.

Data sharing statement

No additional data are available.

Conflict of interest

The authors declare no conflict of interest.

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Not applicable.

Similarity check

It was applied by Ithenticate@.

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