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Insatisfação corporal como preditor do comportamento alimentar de risco em mulheres universitárias: uma revisão integrativa

Body dissatisfaction as a predictor of disordered eating behaviors in undergraduate women: an integrative review

Insatisfacción corporal como predictor del comportamiento alimentario de riesgo en mujeres universitarias: una revisión integradora

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Anna Carolina Franco
ORCID: https://orcid.org/0000-0002-9797-5394
Universidade Federal do Paraná, Brasil
E-mail: annacaroli.na@hotmail.com
Rubia Carla Formighieri Giordani
ORCID: https://orcid.org/0000-0001-5698-7981
Universidade Federal do Paraná, Brasil
E-mail: rubia@ufpr.br

Resumo

Trata-se de uma revisão integrativa que objetivou investigar a existência e configuração da relação entre a presença de insatisfação com a imagem corporal e a ocorrência de comportamentos alimentares de risco em estudantes universitárias. Foi conduzida nas bases de dados indexadas Lilacs, Scielo, PMC e PubMed no período de janeiro e fevereiro de 2019 por meio dos DeCS e BVS: feeding/eating behavior, college/university students, body dissatisfaction e eating habits. A busca resultou em 433 referências com amostra final de 21 artigos que foram sumarizados. Na amostra analisada há evidências de que a insatisfação corporal apresentou-se como componente potente para a adoção de condutas alimentares de alto risco e que as mulheres enfrentam grande ênfase social no peso e formato corporal.

Palavras-chave: Insatisfação corporal; Comportamento alimentar; Mulheres universitárias.

Abstract

This study aimed to investigate whether there is a relation, as well as its configuration, between the dissatisfaction with body image and the occurrence of disordered eating behaviors in undergraduate female students. For this purpose, an integrative review was

conducted in the Lilacs, Scielo, PMC and PubMed indexed databases in January and February 2019, by means of DeCS and BVL terms: feeding/ eating behavior, college/ university students, body dissatisfaction, and eating habits. The search resulted in 433 references with a final sample of 21 articles, which underwent summarization, and evidenced not only that body dissatisfaction is a potent component for the adoption of high-risk eating habits, but also that women face great social pressure regarding their weight and body shape.

Keywords: Body dissatisfaction; Eating behavior; Undergraduate women.

Resumen

Se trata de una revisión integradora que tiene como objetivo investigar la existencia y configuración de la relación entre la presencia de insatisfacción con la imagen corporal y la ocurrencia de comportamientos alimenticios de riesgos en los estudiantes universitarios. Se llevó a cabo en las bases de datos indexadas LILACS, SciELO, PMC y PubMed en el período de enero y febrero de 2019 a través de DeCS y VHL: comportamiento de alimentación / alimentación, estudiantes universitarios / universitarios, insatisfacción corporal y hábitos alimenticios. La búsqueda dio como resultado 433 referencias con una muestra final de 21 artículos que fueron resumidos. En la muestra analizada hay evidencia de que la insatisfacción corporal se presentó como un componente potente para la adopción de comportamientos alimenticios de alto riesgo y que las mujeres enfrentan a un gran énfasis social en el peso y la forma del cuerpo.

Palabras clave: Insatisfacción corporal; Comportamiento alimentario; Mujeres universitarias.

1. Introduction

Considering that disordered eating behaviors precede eating disorders, there is a justified interest in studies that assess eating behaviors, which consist of consumption acts, as well as of "qualitative aspects associated with the selection and decision of which foods to consume" (Viana, 2002, p. 615, our translation). The ability to control food consumption requires specialized mechanisms to harmonize physiological information (neurotransmitters, hormones, metabolism and sensory receptors, for example) with external stimuli (organoleptic properties of food) and social pressures (Viana, 2002), also involving a set of phylogenetic and ontogenetic factors, in addition to a particular cultural context (Mariani-Costantini, 2000; Milton, 2000). Multiple factors are combined in food preferences and responsiveness since eating behavior "lies in the sphere of individual action, inevitably conditioned by the social

structure, while also conditioning it" (Klotz-Silva, Prado & Seixas, 2016, p.1108). Eating style refers to the categorization of eating behavior as a result of social and psychological pressures (Viana, 2002), and is also related to factors such as body weight, perception and judgment of body self-image. The internalization of thin and slim body models, when incompatible with the biotype, produces discomfort and other negative feelings.

Body image is a construct, a mental figure/representation formed by an individual about body size, appearance and shape, consisting of the perceptive, cognitive-affective and behavioral dimensions (Schilder, 1999). These dimensions refer, respectively, to the individual's accuracy in judging body size, beliefs, thoughts and feelings related to his/her own body, and its associated behaviors (Alba, Canales, Casas & Asencio, 2012; Batista, Neves, Filgueiras & Ferreira, 2015; Nergiz-Unal, Bilgiç & Yabanci, 2014). Several factors interfere in these dimensions, such as social constructions and cultural influences that act in the reconstruction and constant reordering of the image (Giordani, 2006; Costa, Vasconcelos & Peres, 2010). Thus, the way in which an individual perceives his/her body may trigger disordered eating behaviors, through negative judgments and emotions, as well as dissatisfaction with their body's self-image.

Considering the contemporary model of western beauty as a promoter of the pursuit of a slim body silhouette, and as a symbolic value concerning not only personal success, but also power and attractiveness, the satisfaction with body image becomes dependent on the adaptation to the current aesthetic standards (Behar, 2010). In this scenario, the great control imposed over the female bodies makes women more susceptible to pressure related to the beauty standards represented by the thin pattern. Therefore, body dissatisfaction is an important promoter of risky strategies to weight loss, and to the construction of an idealized image (Pinheiro & Maciel, 2010).

These weight loss strategies include highly restrictive diets, excessive exercise practices, use of diuretics, laxatives, and anorectic drugs, among other regulatory and control mechanisms that promote health risks. These risky behaviors are potentially relevant in the development of eating disorders, which are behavioral disorders marked by overly disturbed and unbalanced food intake, habits, and eating patterns due to excessive weight and body shape concerns (Alvarenga, Scagliusi, & Philippi, 2011; APA, 2013).

The occurrence of eating disorders, such as anorexia nervosa, is more common among young women (Smink, Hoeken & Hoek, 2012). The transition from adolescence to adulthood is considered a phase of major vulnerability, exposure and adoption of risk behaviors, characterized by social transformations, personal and individual decision-making about

profession, affective partners and lifestyles, along with other stressors (Vitolo, Bortolini & Horta, 2006). Cultural expectations and successful social patterns associated with a thin body shape can negatively affect young adult's eating behavior (Vitolo et al., 2006).

This study aimed to investigate whether there is a relation, as well as its configuration, between the dissatisfaction with body image and the occurrence of disordered eating behaviors in undergraduate female students, through a critical analysis of recent scientific production.

2. Materials And Methods

This integrative review followed the recommendations for studies of such nature, which include the following steps: formulation of the research question, establishment of inclusion and exclusion criteria for the selection of studies, data collection through an instrument to synthesize the information, critical analysis of the selected studies, interpretation of the results and presentation of the review (Mendes, Silveira & Galvão, 2008).

The guiding question was the following: "How is the relation between negative body perception and eating behavior of undergraduate women configured?"

Articles were selected between January and February 2019, according to the following steps to verify eligibility: reading titles, abstracts and full articles. The research was conducted in the databases LILACS (Latin American and Caribbean Health Sciences Literature), SciELO (Scientific Electronic Library Online), PMC (PubMed Central) and PubMed, chosen for their broad references on the Health Sciences field and Psychology, in order to ensure the wide scope of the review.

To achieve the proposed objectives, the following descriptors indexed to DeCS - Health Sciences Descriptors and BVS - Psychology Terminology were chosen: "feeding/eating behavior", "college/university students", and also the descriptors "body dissatisfaction" and "eating habits". The strategy search with Boolean Operators was: ("body dissatisfaction") AND ("eating behavior" OR "feeding behavior" OR "eating habits") AND ("college students" OR "university students").

Inclusion criteria consisted of studies that investigated body perception and eating behavior in the university environment, published between 2009 and 2018 (considering a more recent period of scientific production), in Portuguese, Spanish and English, restricted to scientific articles published in journals indexed in the selected databases, without restriction

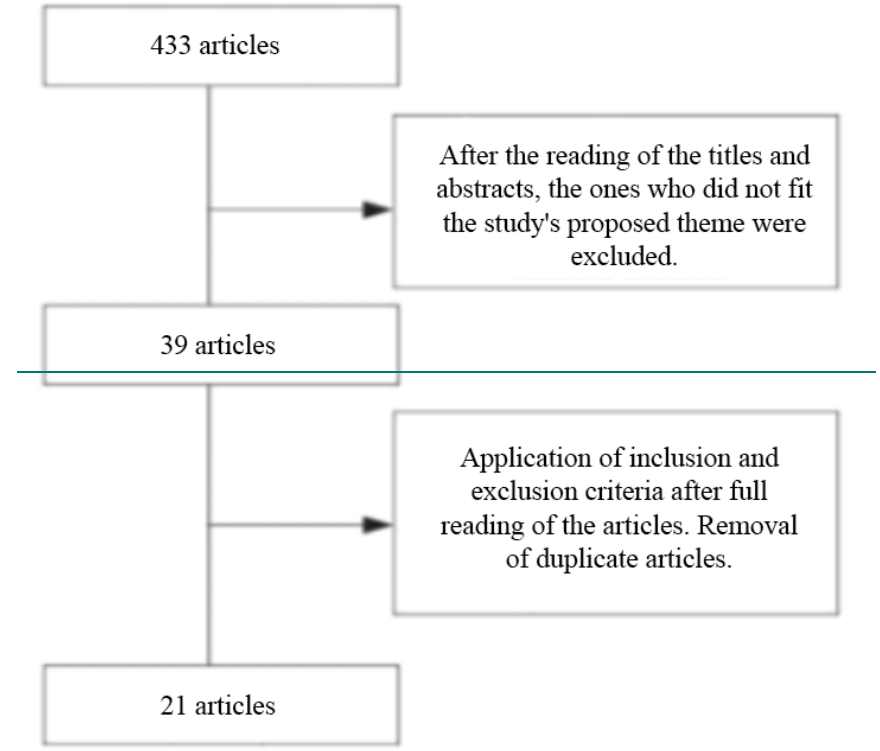
regarding study design. Studies with women and mixed populations (female and male) were accepted, but studies with only male population were excluded. Repeated studies, publications not fully available, review articles, qualitative approach articles, theses, dissertations, monographs, comments, editorials, reviews, scientific reports and studies regarding specific risk populations, such as dancers, athletes, models, or those related to risky eating habits for chronic non-communicable diseases, were also excluded. The reference lists of the selected studies were manually scrutinized, and works that met the same criteria were included (Pereira & Galvão, 2014).

The following data were collected from the studies: authorship, publication date and location of the studies, sample, objectives, methodology, results and conclusions. The data analysis was performed descriptively and comparatively, and the main data are systematized in tables presented in the following results section.

3. Results And Discussion

The search was initiated in the SciELO database, in which 4 articles (0.9%) were found with the search strategy; 2 were selected and 1 was identified and selected from the reference list due to compliance with the inclusion and exclusion criteria. Then, the search in the LILACS database was performed, resulting in a total of 7 articles (1.6%), with the same 2 articles from the previous database being selected. Subsequently, the PMC database was searched, in which a total of 393 results (90.8%) were found, with the selection of 14 articles and the identification and inclusion of 2 articles from reference lists. Finally, the search in the PubMed database was performed, in which 29 results (6.7%) were found according to the search strategy used, and 3 articles were selected, with one of them presenting in duplicity to an already selected article in the PMC database. The selection process is shown in Figure 1.

Figure 1. Flowchart of selection of articles included in the review



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Source: Authors (2020).

433 results were found and 21 articles were selected in this review, as observed in Table 1.

Table 1. Identification of the articles that were included in the integrative review.

Author and year of publication	**Journal**	**Place of study**
1. Iorga, Manole, Pop, Muraru & Petrariu (2018)	Pharmacy	Iasi, Romania
2. Glashouwer, Bennik, De Jong & Spruyt (2018)	Cognitive Therapy and Research	Groningen, Netherlands

3. Escolar-Llamazares, Martínez Martín, & González Alonso (2017)	Revista Mexicana de Trastornos Alimentarios	Burgos, Spain
4. Mcneill, Best & Davis (2017)	Journal of Eating Disorders	Canada
5. Silva, Santana, Maroco, Maloa & Campos (2017)	Public Library of Science One	Brazil, Portugal and Mozambique
6. Fitzsimmons-Craft, Ciao & Accurso (2016)	International Journal of Eating Disorders	North Carolina, United States
7. Manaf (2016)	Journal of Clinical and Diagnostic Research	Malaysia
8. Vankim, Erickson & Eisenberg (2016)	Obesity (Silver Spring)	Minnesota, United States
9. Batista, Neves, Filgueiras & Ferreira (2015)	Revista da Educação Física/UEM	Juiz de Fora, Brazil
10. Ko, Tam & Viet (2015)	Journal of Eating Disorders	Hanoi, Vietnam
11. González-Carrascosa, García-Segovia & Martínez-Monzó (2014)	Revista de Psicopatología y Psicología Clínica	Valencia, Spain
12. Nergiz-Unal, Bilgiç & Yabanci (2014)	Nutrition Research and Practice	Ankara, Turkey
13. Ohara, Kato & Mase (2014)	Eating and Weight Disorders	Kobe, Japan

14. Vartanian, Smyth, Zawadzki, Heron &Coleman (2014)	International Journal of Eating Disorders	United States
15. Yean, Benau&Dakanalis (2013)	Frontiers in Psychology	Mid-Atlantic, United States
16. Memon, Adil & Siddiqui (2012)	Biomed Central Research Notes	Karachi, Pakistan
17. Alba, Canales, Casas & Asencio (2012)	Revista de Orientación Educacional	Madrid, Spain
18. Talwar (2012)	Malaysian Journal of Psychiatry	Sarawak, Malaysia
19. Yahia, El-Ghazale, Achkar & Rizk (2011)	Asia Pacific Journal of Clinical Nutrition	Beirut, Lebanon
20. Costa, Vasconcelos & Peres (2010)	Journal of Health, Population, and Nutrition	Florianópolis, Brazil
21. Bosi, Uchimura & Luiz (2009)	Jornal Brasileiro de Psiquiatria	Rio de Janeiro, Brazil

Source: Authors (2020).

Regarding the publications, a predominance (7 articles) of the theme is found in journals specialized in disordered eating behaviors and eating disorders (Eating and Weight Disorders, Obesity, Mexican Journal of Eating Disorders, Journal of Eating Disorders, and International Journal of Eating Disorders). Secondly, there are articles in Nutrition journals (Asia Pacific Journal of Clinical Nutrition, Journal of Health, Population, and Nutrition, Nutrition Research and Practice, Educational Guidance Magazine) consisting of 4 articles, followed by Psychology journals (Cognitive Therapy and Research, Frontiers in Psychology, Journal of Psychopathology and Clinical Psychology) with 3 articles, and Psychiatry

(Malaysian Journal of Psychiatry) with 2 articles. And finally, 5 articles were selected from journals in other medical fields or from basic science research.

There is a great predominance of international journals, especially in the European continent (33.3%), with 3 journals from England, 2 from Switzerland, 1 from Germany, and 1 from Spain, while North America was in second place (28.6%) with 5 articles from the United States and 1 from Mexico. The Asian continent also had a significant participation (19.1%), with 1 publication from Bangladesh, 1 from Singapore, 1 from South Korea and 1 from India. There were 3 publications from South America (14.3%), 2 from Brazil and 1 from Chile; and there was 1 article from Oceania (4.8%), specifically from Australia.

Regarding study sites, the Asian continent surprised with 7 studies (including Turkey in Eurasia), surpassing the amount of European studies, which were 5. The American continent produced 9 studies, highlighting Brazil with 4 studies.

Research design

The objectives of the reviewed studies, in general, consisted of: body image evaluation (perception, level of satisfaction, distortion, among other variables); prevalence of body dissatisfaction; disordered eating behavior and media influence; risk of developing eating disorders and its relation to eating habits/patterns; identification of risk factors for eating disorders; relation between body image perception and eating behavior; gender differences in the relation between body dissatisfaction and risk for eating disorders; preliminary understanding of the dietary practices used to obtain the desired body weight. Table 2 presents the information about objectives, data collection instruments and sample.

Table 2. Outline of researches in the analyzed articles.

Author / Year	**Objectives**	**Instrument**	**Sample and scope of the study**
Iorga et al. (2018)	To evaluate the presence of eating disorders and their relation with eating habits patterns.	Questionnaire including sociodemographic, medical, anthropometric and psychological data; Eating Disorders	91 pharmacy students (91.2% women and 8.8% men) from “Grigore T. Popa ” University of Medicine and Pharmacy.

		Inventory (EDI-3).	
Glashouwer et al. (2018)	To investigate the relationship between implicit measures of real and ideal body image and self-reported body dissatisfaction. To examine whether implicit beliefs of real and ideal body image were related to eating behaviors.	Body Image States Scale (BISS); Eating Disorder Examination Questionnaire (EDE-Q); Relational Responding Task (RRT) (built to capture beliefs at the implicit level).	67 psychology students (44.8% women with high body dissatisfaction and 55.2% women with low body dissatisfaction) from the University of Groningen.
Escolar-Llamazares et al. (2017)	To identify risk factors for eating disorders in undergraduate students according to gender and age.	Questionnaire to obtain sociodemographic data (gender, age, place of residence, college); Eating Disorders Inventory (EDI-3).	561 students (42.8% men and 57.2% women) from the University of Burgos (Spain).
McNeill et al. (2017)	To elucidate possible gender differences in the relation between body dissatisfaction, eating disorders and the five-factor personality model (FFM).	Eating Attitudes Test (EAT-26); Body Image Ideals Questionnaire (BIQ); Personality inventories (NEO-PI-R; NEO-FFI-3); Body Mass Index (BMI).	323 psychology students (73.7% women and 26.3% men) from an Atlantic Canadian university.
Silva et al. (2017)	To evaluate the psychometric properties of WCS. To estimate body weight concerns and identify	Weight Wores Scale (WCS); transnational adapted version of the Body Shape Questionnaire	2,068 female students (46.2% from Brazil, 38.7 from Portugal and 15.1% from Mozambique).

	factors related to eating disorders.	(BSQ); Perceived Health Competence Scale (PHCS); Self-reported weight and height to calculate BMI.	
Fitzsimmons-Craft et al. (2016)	To examine the relationship between the frequency of body comparisons, diet, exercise, thoughts, behaviors, and prospective disordered eating behaviors.	Ecological momentary assessment (EMA): with questions on social comparison, body dissatisfaction, negative affection, thoughts, impulses and disordered eating behaviors.	232 undergraduate women from a public university in the Southeast United States.
Manaf (2016)	To identify the prevalence of depression and susceptibility to eating disorders. To study the relationship between depression, body image and susceptibility to eating disorders.	Body Image Acceptance and Action Questionnaire (BI-AAQ); Patient Health Questionnaire (PHQ-9); Eating Attitude Test (EAT-26).	206 female undergraduate students from a private Malaysian university.
Vankim et al. (2016)	To examine the relationship between factors related to weight and weight status, body dissatisfaction, chronic health conditions, and quality of life in relation to sexual orientation and gender.	Data were collected from the College Student Health Survey (CSHS; 2009-2013), a Minnesota surveillance system.	28,703 college students (36.3% men and 63.7% women) from Minnesota, United States

Batista et al. (2015)	To analyze the prevalence of body dissatisfaction, inadequate eating behavior and body checking, and the influence of the media and their possible relationship regarding students.	Body Shape Questionnaire (BSQ); Eating Attitudes Test (EAT-26); Sociocultural Towards Appearance Questionnaire (SATAQ-3); Body Checking Questionnaire (BCQ).	207 students from both genders (82.1% women and 17.9% men) from Physical Education, Nutrition and Aesthetics courses in different institutions in the city of Juiz de Fora (MG), Brazil.
Ko et al. (2015)	To examine disordered eating behaviors.	SCOFF questionnaire; Eating Disorders Inventory (EDI-2); Body Mass Index (BMI).	203 undergraduate female students at the Hanoi University of Medicine in Vietnam.
González-Carrascosa et al. (2014)	To evaluate eating behaviors and body image through an online self-reporting questionnaire.	General data questionnaire developed for the study (demographic variables, anthropometric variables and variables related to body image, physical activity and diet); Silhouette Test (TS); Eating Attitude Test (EAT-26) Body Shape Questionnaire (BSQ).	89 Food Science Technology students (28.1% men and 71.9% women) at the Polytechnic University of Valencia, Italy
Nergiz-Unal et al. (2014)	To evaluate disordered eating behaviors, body shape perception, the relationship between eating attitude and	Demographic and personal information questionnaire; Eating Attitudes Test (EAT-40); Body Shape	773 undergraduate students (62% men and 38% women) from the Nutrition and Dietetics Departments (NDD) (n = 254), Physical

	body shape perception, and the difference between current and ideal body size.	Questionnaire (BSQ-34); Perceived Figure Rating Scale (FRS); Body weight and height measurement.	Education and Sports (PESD) (n = 263) and Social Sciences (SOC) (n = 256) from the Universities of Hacettepe, Ankara, Gazi and Başkent.
Ohara et al. (2014)	To investigate the relationship between eating behavior and body shape perception by examining current physical state and "ideal" physical parameters.	Questionnaire for data collection (age, height, weight, "ideal height" and "ideal weight"); BMI-based silhouette combination test (IMC-SMT); Japanese version of the Dutch Eating Behavior Questionnaire (DEBQ).	548 Japanese students (54% women and 46% men) from Kobe University.
Vartanian et al. (2014)	To test a structural equation model in which early adversity is associated with disordered eating through intrapersonal resources, interpersonal resources, and body dissatisfaction.	Risky Families Questionnaire (RFQ); Rosenberg self-esteem scale (SES); Gratitude Questionnaire (GQ-6); Social Support Appraisals (SS-A) Scale; Body Shape Questionnaire (BSQ); Eating Disorder Examination Questionnaire (EDE-Q).	748 women students from a private university in the Northeast United States.
Yeanet al.	To examine the differences in gender	Kinsey Heterosexual-Homosexual Likert-type	693 participants (35.5% men and 64.5% women) from

(2013)	and sexual orientation in the internalization of social aesthetic pressure, body image dissatisfaction, self-esteem and symptoms of eating disorder.	Scale; Body Shape Questionnaire (BSQ); Eating Attitudes Test (EAT-26); Drive for Thinness Scale (DFT); Drive for Muscularity Scale (DFM); Rosenberg self-esteem scale (SES); General internalization subscale of the Sociocultural Towards Appearance Questionnaire (SATAQ-3); Weight and height measurements.	three universities in the United States Mid-Atlantic.
Memon et al. (2012)	To evaluate the incidence of high risk of eating disorders.	Eating Attitudes Test (EAT-26); SCOFF questionnaire; Body mass index (BMI).	435 students (78.6% women and 21.4% men) from three Karachi medical colleges (Dow Medical College, Sindh Medical College and Aga Khan).
Alba et al. (2012)	To know the risk of eating disorders and body image.	Eating Disorders Inventory (EDI-3); Cuestionario Imagen: evaluation of dissatisfaction with body image; sociodemographic variables (age, current period, BMI).	563 students (84.9% women and 15.1% men) from the Complutense University of Madrid.
Talwar	To explore the relationship between	Questionnaire including socio demographic	217 undergraduate students from an university in

(2012)	self-esteem and anorexic eating concerns.	data; Rosenberg self-esteem scale (SE-10) and Eating Attitude Test (EAT-40).	Sarawak, Malaysia.
Yahia et al. (2011)	To obtain a preliminary understanding of the dietary practices used to achieve desirable body weight. To determine the magnitude of body dissatisfaction in relation to weight status.	Self-reported questionnaire (included questions on diet, physical activity, and smoking); Body Shape Questionnaire (BSQ); Weight and height were measured to calculate body mass index (BMI). Body fat percentage was measured using the body fat analyzer and the Tanita 300A scale.	252 students (57% women and 43% men) from the American Lebanese University in Beirut, Lebanon.
Costa et al. (2010)	To estimate disordered eating behaviors associated with biological, social and psychological factors and describe patterns of food intake.	Eating Attitudes Test (EAT-26); Body Shape Questionnaire (BSQ-34); BMI, body fat percentage, waist circumference, food intake (24-hour recall) and socioeconomic characteristics (monthly family income, monthly per capita income and parental education).	220 female students from the Federal University of Santa Catarina (UFSC) in Florianópolis.
Bosi et al. (2009)	To characterize eating habits and possible risk factors associated with	Bulimic Investigatory Test Edinburgh (BITE); Eating	175 female students studying psychology at a public university in the city of Rio

	eating disorders.	Attitudes Test (EAT-26); Body Shape Questionnaire (BSQ); Body Mass Index (BMI) calculated based on reported weight and desired weight.	de Janeiro.

Source: Authors (2020).

Regarding the instruments used to assess body satisfaction and eating behaviors, most studies used scales and questionnaires already standardized, with focus on the research component. The most commonly performed were: Eating Attitudes Test (EAT- 26; EAT-40) - (47.6%; n = 10), Eating Disorders Inventory (EDI-3; EDI-2) - (19.0%; n = 4), SCOFF questionnaire (9.5%; n = 2) and Eating Disorder Examination Questionnaire (EDE-Q) - (9.5%; n = 2) to assess eating behavior and Body Shape Questionnaire (BSQ) - (42.9%; n = 9) and Rosenberg Self-esteem Scale (SES) - (14.3%; n = 3) to assess satisfaction with body image. Most of the studies (47.6%; n=10) also evaluated the participants' Body Mass Index (BMI) as a complement to the instruments.

The structure of the studies included in this review showed that all (n=21) were cross-sectional, descriptive and non-experimental studies. In addition, all investigations were based on the university population of several continents.

Regarding the gender composition of the populations investigated, 57.1% (n=12) of the studies were based on samples composed of university students of both sexes, presenting the results separately and comparatively, and 42.9% (n=9) of the studies were based on samples composed only by female university populations. A large variation in sample size was observed: the smallest sample studied consisted of 67 participants (Glashouwer et al., 2018) and the largest one was composed of 28,703 participants (Vankim et al., 2016).

The relationship between body and eating

All studies analyzed in this review provide evidence that corroborate the sensitive relationships between body and eating habits. Table 3 presents the main results.

Table 3. Main results of the articles analyzed.

Author and year of publication	Main results
Iorga et al. (2018)	Students with a high desire for thinness have higher body weight and tend to skip dinners. A positive correlation was identified between weight, body dissatisfaction and the motivation for thinness. 41.8% of the students reported not being satisfied with their weight, and obtained statistically significant scores compared to those who were satisfied in the following subscales of EDI-3: wish for thinness, bulimia, body dissatisfaction, low self-esteem, personal alienation, interpersonal alienation, interoceptive deficits, emotional dysregulation and asceticism. The review also showed that participants with high body dissatisfaction tended to have fewer main meals and to skip breakfasts and dinners.
Glashouwer et al. (2018)	Women with high body dissatisfaction were characterized by relatively strong and implicit "I am fat/I am not thin" beliefs, while their implicit "I want to be thinner" beliefs were similar to those of individuals with low body dissatisfaction. The stronger the beliefs, the greater the apparent dietary restriction self-reported. However, implicit beliefs about body image showed no higher value related to explicit beliefs of body image in predicting body dissatisfaction and diet behavior.
Escolar-Llamazares et al. (2017)	Women showed a greater obsession with thinness and body dissatisfaction compared to men (13.4% *vs.* 4.2% and 39.4% *vs.* 21.9%, respectively). Bulimic behaviors were present mainly in women (21%) and predominantly in the ones under 20 years of age. In order to control weight, 2.9% of the students presented induced vomiting behavior and 2.3% showed a high use of laxatives, mainly women between 18-25 years of age; 7.7% of the students were underweight and had excessive concern with eating and body weight.
McNeill et al. (2017)	Women reported higher levels of body dissatisfaction and eating disorder than men did. The study showed that personality factors were significantly related to body dissatisfaction in both genders. In addition to the influence of body mass index (BMI), several personality traits contributed significantly to the prediction

	of male body dissatisfaction (such as high neuroticism and low awareness) and female dissatisfaction (such as high neuroticism). Among women, disordered food scores were significantly predicted by high neuroticism, extroversion and low awareness.
Silva et al. (2017)	In the overall sample, the prevalence of individuals with high probability of developing eating disorders was 24.4%. For Brazilian, Portuguese and Mozambican students, the prevalence was 28.7%, 23.8% and 15.7%, respectively. In the Brazilian and Portuguese samples, individuals who used medication and supplements for body alterations, as well as students classified as overweight and obese, presented a higher chance of developing eating disorders. In the Mozambican sample, no variables changed the probability.
Fitzsimmons-Craft et al. (2016)	Both food restriction (22.2%) and compulsive eating (3.2%) were observed, as well as exercise for weight loss (11.4%), and induced vomiting (0.5%). Regarding the predictors of disordered eating behaviors, the results revealed that body dissatisfaction prospectively predicted all disordered eating thoughts and desires (thoughts of restriction, exercise, vomiting and need for compulsive eating) and a higher probability of subsequent restriction attempts, exercises and compulsive eating.
Manaf (2016)	65.5% of students were depressed and 6.3% were susceptible to eating disorders. A significant positive relationship between depression and eating disorders and a negative relationship between body image acceptance and depression were found, as well as a relationship between body image satisfaction and susceptibility to eating disorders. In addition, the regression analysis showed that depression was partially mediating the effect of body image on eating disorders.
Vankim et al. (2016)	The body dissatisfaction rate for women was 59.9% among heterosexuals, 60% among lesbians and 63.8% among bisexuals. The "unhealthy weight control" profile was higher among students of sexual minorities (gay and bisexual) compared to heterosexuals (variation: 8.9% -17.0% vs. 5.7% for heterosexual women; variation: 6.2% -25.7% vs. 2.0% for heterosexual men). This profile was associated with obesity, low body satisfaction and poor quality of life in multiple subgroups of gender/sexual orientation.

Batista et al. (2015)	79.4% of women presented no body dissatisfaction; 15.3% showed mild dissatisfaction; 4.7% moderate dissatisfaction and 0.6% severe dissatisfaction. 100% of men were classified as free from dissatisfaction. Moreover, 24.1% of women and 2.4% of men were at risk for eating disorders through unhealthy eating behaviors. Regarding both genders, 48.8% were classified with high internalization of the media body ideal, and 46.0% of men and 47.1% of women showed high levels of body checking behavior.
Ko et al. (2015)	Low weight students (45.3%) were less dissatisfied with their bodies than normal weight (53.2%) and overweight (1.5%) students. A significant positive correlation between BMI and EDI-2 was found. 48.8% of the students indicated a high possibility of presenting eating disorder symptoms according to the SCOFF questionnaire.
González-Carrascosa et al. (2014))	96.5% of women would like to weigh less, opposed to 54.5% of men. 96.9% of women worried with their image (and 41,9% affirmed to be very worried), versus 76.0% of men. The follow-up of diets was higher among women, as well as the level of body dissatisfaction. The participants who had been on a diet at some point of their lives had higher scores on EAT-26 and BSQ compared to those who had never been on a diet before, with statistically significant differences.
Nergiz-Unal et al. (2014)	14.0% of women and 9.3% of men on PESD, 5.9% of women and 0.0% of men on DDN, and 1.3% of women and 0.0% of men on SOC, presented high risk of developing eating disorders. Regarding body perception, the concern with body shape (moderate and accentuated) was greater on the ESDP (7.4%), compared to NDD (5.2%) and SOC (1.9%) students, higher scores were found for women.
Ohara et al. (2014)	Among women, the ideal body shape was smaller than the perception they had of their actual body shape. Among participants with normal weight, the DEBQ scores for restrained, emotional and external eating were higher in women than in men. BMI was positively associated with eating in both sexes. For women, emotional eating was negatively associated with the discrepancy on the current/ideal BMI and body shape.
Vartanian et al. (2014)	Early adverse experiences were negatively associated with interpersonal and intrapersonal resources. Intrapersonal resources were negatively associated with

	body dissatisfaction, while interpersonal resources were positively associated with body dissatisfaction. Finally, body dissatisfaction was associated with a series of disordered eating behaviors (compulsion, purging and restriction) and strenuous exercises.
Yean et al. (2013)	Women endorsed significantly more body dissatisfaction, motivation for thinness, internalization, and disordered eating symptoms than men, who, on the other hand, endorsed more impulse for muscularity. The results also indicated that body dissatisfaction and low self-esteem partially mediated the relationship between internalization and eating disorder symptoms. Compared to heterosexual women, lesbians reported a greater impulse to muscularity, low self-esteem, and lower internalization, but they did not differ significantly in body dissatisfaction, motivation for thinness, and disordered eating.
Memon et al. (2012)	22.75% of the individuals presented high risk of eating disorders, being 87.9% female and 12.1% male. Among high-risk individuals, 76.76% were terrified of being overweight, 68.68% were concerned about their desire to be thinner, 55.56% were engaged in diet behavior, 9% vomited after eating and 73.7% had self-control around food.
Alba et al. (2012)	Gender differences on the two questionnaires' scores were statistically significant towards women, who scored higher than men did on all scales, except for the B scale of EDI-3-RF (bulimic behaviors), in which men scored slightly higher. According to the diagnostic criteria proposed in EDI-3-RF, 11.9% of men and 29.9% of women were included in the "high risk" group.
Talwar (2012)	33% of students demonstrated low self-esteem and 13% presented anorexic eating concerns. A Pearson moderate correlation was observed between students with low self-esteem and disordered eating behaviors. Students between 19 and 21 years of age had greater concerns with anorexic eating than the ones between 22 and 24 years of age.
Yahia et al. (2011)	26% of students reported smoking, 8% reported taking laxatives and 4% reported taking dietary pills. 50% of students affirmed to be engaged in regular physical activity and 19% claimed to use multivitamin supplements. The research found that 64% of the students were not worried about their body image, 19% were

	slightly worried, 12% were moderately worried and 5% were extremely worried (89% were women). The levels of body dissatisfaction of students who reported using laxatives and dietary pills were much higher than those who reported smoking, exercising regularly or taking multivitamins.
Costa et al. (2010)	A prevalence of abnormal eating attitudes (8.3%) was found among women students, as well as a prevalence of body dissatisfaction (20.0%). The group of students dissatisfied with their body images showed a significantly higher prevalence of abnormal eating attitudes (34.2%) when compared to the group of students satisfied with their body images (2.3%).
Bosi et al. (2009)	The difference between the reported and the desired weight was, on average, of 2.2 kg, indicating general dissatisfaction in relation to their reported weight. 26.29% of students presented abnormal eating behavior. The students who presented moderate/severe body dissatisfaction (66.7%) presented risky eating behaviors twice more frequent than those with mild/normal body dissatisfaction did.

Source: Authors (2020).

Considering that excessive concern with body and dissatisfaction with body image are highly associated with risk behaviors for eating disorders, research conducted in this area investigate the individuals' perceptions about body shape and size, as well as the frequent eating behaviors, with a greater focus on women (Bosi et al., 2009; Glashouwer et al., 2018; Nergiz-Unal et al., 2014).

Gender is recognized as a risk factor for eating disorders. Women experience higher social pressure on weight and body shape compared to men, which can result in anxiety, depression, low self-esteem, low level of self-confidence, and dissatisfaction with body image. For them, disordered eating behaviors have become so common in Western society that restrictive diets, as well as compensatory and purgative practices, are commonly considered "normal" behaviors. This normalization results in the intensification of behaviors harmful to women's health (Iorga et al., 2018; Batista et al., 2015; Macneill et al., 2017; Talwar, 2012; Yahia et al., 2011).

In a systematic review, Lindvall, Dahlgren and Wisting (2016) assessed the prevalence of eating disorders and found overall rates that ranged from 0.5% to 5.3% for women and

from 0.62% to 0.64% for men. In addition to the higher tendency of women, the university context implies important changes in lifestyle, which lead to detachment from the family nucleus, greater independence of choices, and need to belong to a social group. This can result in emotional conflicts and unfavorable eating habits, which may increase the susceptibility to develop eating disorders in this specific population (González-Carrascosa et al., 2014).

This is corroborated by all the studies included in this review that were conducted with the university population of both genders (57.1%; n=12). These research presented unanimous results regarding the higher prevalence of body dissatisfaction and higher occurrence of risky eating behaviors in women (Alba et al., 2012; Batista et al., 2015; Escolar-Llamazares et al., 2017; González-Carrascosa et al., 2014; Iorga et al., 2018; Macneill et al., 2017; Memon et al., 2012; Nergiz-Unal et al., 2014; Ohara et al., 2014; Vankim et al., 2016; Yahia et al., 2011; Yean et al., 2013).

The study conducted by Glashouwer et al. (2018) showed that body image was a predictive of restrictive eating behavior. For being involved in the cognitive-affective dimension, body dissatisfaction can be understood as the negative assessment of the body, which results from a discrepancy between the current body image (how the individual sees her/his body) and the ideal body image (how the individual would like it to be) (Glashouwer et al., 2018). Strong explicit beliefs of "I am fat" and "I want to be thinner" predicted more self-declared behaviors of food restriction and follow-up of "fashion diets" for weight loss.

Moreover, the study conducted by Costa et al. (2010) found that body dissatisfaction was the only variable among those studied (body dissatisfaction, BMI, body fat percentage, waist circumference and socioeconomic characteristics - monthly family income, monthly per capita income and parents' level of education) that presented a significant association with the presence of disordered eating behaviors. Thus, body dissatisfaction is recognized as one of the main factors that can cause eating disorders.

The research conducted by Fitzsimmons-Craft et al. (2016), in which the results revealed that body dissatisfaction predicted, prospectively, all disordered thoughts and eating desires (thoughts of restriction, exercise, vomiting and need for eating compulsion) and a higher probability of subsequent restraint attempts, exercise and compulsive eating, should also be highlighted.

In addition, Escolar-Llamazares et al. (2017) sought to identify the main risk factors for the development of eating disorders in college students, according to gender and age, resulting in the following associated factors: body dissatisfaction, desire to lose weigh,

obsession with thinness, bulimic behavior, and extreme behavior for weight control. The vast majority of the variables were found mainly among women between 18 and 25 years of age.

The different susceptibility regarding age group was also addressed in the study conducted by Talwar (2012), who found that as age increases, anorexic food concerns tend to decrease rapidly. The study showed that the average self-esteem for those in the 19 to 21 age group was lower compared to those in the 22 to 24 age group.

Regarding sexual minorities within women, lesbian women had significantly less internalization of cultural beauty standards than heterosexual and bisexual women did, which suggests the rejection of heteronormative feminine ideals, or a reason to feel comfortable adopting some traits traditionally considered masculine. Nevertheless, these women did not differ significantly from heterosexual women in terms of eating disorder and body dissatisfaction, which indicates that the search to be attractive to men is not the only cause of increased risk of self-objectivation and eating disorders, differing from the common understanding of the question. (Vankim et al., 2016; Yean et al., 2013).

The relationship between BMI and body dissatisfaction was also found to be linear among women, which means that they are more dissatisfied with their bodies as there is an increase in BMI. The results showed that women aspired smaller weights, BMIs and body formats than those found or perceived at the time. This way they would be closer to the female social ideal and increase the degree of satisfaction with their respective appearances (González-Carrascosa et al., 2014; Iorga et al., 2018; Macneill et al., 2017; Ohara et al., 2014; Yahia et al., 2011). Overweight individuals obtained higher scores in the assessment scales of disordered eating attitudes, and indicated a higher probability of developing eating disorders compared to eutrophic and low-weight individuals (Iorga et al., 2018; Ko et al., 2015; Memon et al., 2012; Silva et al., 2017).

However, students from professional areas that focus on body shape, size and performance, such as Physical Education, Nutrition and Esthetics students, are more susceptible to body dissatisfaction and risky eating behavior (Batista et al., 2015; Nergiz-Unal et al., 2014). If on the one hand, for students in these areas there may be a subtle association between professional credibility and personal appearance, along with the fact that it is relevant to demonstrate how their professions affect their individual behaviors (Batista et al., 2015; Nergiz-Unal et al., 2014); on the other hand, it is possible to hypothesize that young people's motivation for certain professions may be associated with a high concern with the body and risky eating behaviors prior to university life.

In relation to other aspects of college students' mental health, stressors can precipitate risky eating behaviors. In this sense, Manaf (2016) correlated depressed mood with body dissatisfaction, and McNeill et al. (2017) demonstrated that neuroticism predicts body dissatisfaction, emphasizing the need for institutional programs that aim at psychosocial care in the university. At the same time, Vartanian et al. (2014) demonstrated that early adverse experiences are relevant to body dissatisfaction, and that low self-esteem may be associated with greater willingness to compulsive eating.

Finally, regarding the significant participation of Asia (19.05%) among the studies collected, Ko et al. (2015) argue that recent research has shown that the prevalence of eating disorders in eastern countries is not consistently lower when compared to the prevalence in western countries. This suggests that globalization and internationalization may contribute to the dissemination of Western beauty standards and cultural norms to eastern societies. In addition, cross-cultural studies have reported a possible association with economic development, cultural exposure and high socioeconomic level of individuals (Gunewardene, Huon & Zheng, 2001).

The concept of the thin-female-body as a symbolic value of Western culture, under which women feel must fit in and stay fit as a means of achieving acceptance, personal satisfaction and social ascension, admittedly makes them more vulnerable to risky eating behaviors than men. According to Yean et al. (2013), individuals who are regularly exposed to media messages with strong emphasis on physical appearance are more likely to interpret these messages as personally relevant and, consequently, to present a higher degree of internalization of cultural beauty standards. This internalization, which is higher among women, predisposes the development of high levels of body dissatisfaction, and thus makes individuals more susceptible to psychological implications marked by concerns, obsessions and distorted perceptions of body image and to involvement in dietary behaviors harmful to weight control. These aspects have been strongly related to the development of eating disorders (Batista et al., 2015; Yahia et al. 2011).

4. Conclusion

This integrative review indicated the vulnerability of women students to risk behaviors, since body dissatisfaction was a powerful component for the adoption of high-risk eating behaviors.

The need for methodologies with more sophisticated degrees of evidence, and that

encompass a higher level of experimentation, as well as more in-depth investigations of aspects related to the personality of participants, is evident. The relevance of emotions and feelings to eating behaviors still deserves more attention in research agendas; and to preserve their complexity in quantitative studies constitute a theoretical and methodological challenge.

There is also a need for research that considers the Brazilian cultural plurality and regional particularities, aspects that influence women from different national universities environments. Finally, gaps in information that analyze ethnic-racial issues, skin color, and income were found, as well as the need for future systematic reviews that allow comparative analysis between university women and non-university women, at different stages of life.

The articles analyzed have, to some degree, problematized the multiple interrelationships between corporeality - which comprises the ways of experiencing and manipulating one's own body, its social representations and social practices with and through the body - and the experience with food. The results, although delimited in theoretical perspectives of biomedicine, address social aspects: the body is, at the same time, flesh and elusive matter crossed by subjectivity; while eating is vital, concomitantly a biological and a symbolic fact, a channel of opening and contact of the individual with the world. In this complex horizon - and by the comparison of complementary theoretical possibilities - new studies on the relationship between body dissatisfaction and eating behaviors are suggested.

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Rubia Carla Formighieri Giordani – 50%