

Risk factors for eating disorders among undergraduate nursing students

Fatores de risco para transtornos alimentares em graduandos de enfermagem

Factores de riesgo para trastornos alimentarios en graduandos de enfermería

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Keywords

Body image; Feeding behavior; Risk factors; Health promotion; Mental health

Descritores

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Abstract

Objective: To identify the presence of risk factors in nursing students for the development of eating disorders.

Methods: Cross-sectional study with undergraduate nursing students from a public university, where a demographic questionnaire, the Eating Attitude Test (EAT), and the Body Shape Questionnaire (BSQ) were used. Descriptive analysis, Pearson's correlation and linear regression were used to analyze the data.

Results: Among the 120 undergraduate students, 30 (25%) presented altered eating behavior, and 55 (45.8%) demonstrated dissatisfaction with body shape. A simple positive correlation was found between the EAT and BSQ instruments ($p < 0.001$), in which 20 (66.7%) of the 55 undergraduate students with BSQ alterations also had EAT alterations; there was a significant association between risky eating attitude (EAT) and body mass index (BMI) above the state of eutrophy, and a significant association between preoccupation with body shape (BQS) and year in school, mainly in the third and fourth years. There was a significant difference between the instruments used and age, showing that the youngest students were at a higher risk for the development of eating disorders.

Conclusion: Undergraduate nursing students presented risk factors for development of eating disorders with the presence of preoccupation with body shape and altered eating behaviors. The multifactorial etiology of eating disorders suggests that research should emphasize prevention, focusing on the development of a positive concept in young people about their self-image and developing critical thinking about image patterns, media and social impositions.

Resumo

Objetivo: Identificar a presença de fatores de risco em estudantes de enfermagem para o desenvolvimento de transtornos alimentares.

Métodos: Estudo transversal com graduandos de enfermagem de universidade pública, onde foi utilizado questionário de caracterização, Teste de Atitudes Alimentares (EAT) e Questionário de Imagem Corporal (BSQ). Para análise dos dados foi utilizado análise descritiva, correlação de Pearson e regressão linear.

Resultados: de 120 graduandos, 30 (25%) apresentaram alteração do comportamento alimentar, 55 (45,8%) insatisfação com imagem corporal. Observou-se correlação simples positiva entre os instrumentos EAT e BSQ ($p < 0,001$) onde 20 (66,7%) dos 55 graduandos com alterações de BSQ apresentaram também alterações de EAT; associação significativa entre comportamento alimentar de risco (EAT) e o índice de massa corpórea (IMC) acima do estado de eutrofia; associação significativa entre preocupação com a imagem corporal (BQS) e o ano de graduação, com destaque para terceiro e quarto anos. Houve diferença significativa entre os instrumentos utilizados e idade, a mostrar que, na amostra estudada, os graduandos mais jovens apresentaram-se com maior risco para o desenvolvimento de transtornos alimentares.

Conclusão: Graduandos de enfermagem apresentaram fatores de risco para o desenvolvimento de transtornos alimentares com a presença de preocupação com imagem corporal e alteração de comportamento alimentar. Etiologia multifatorial dos transtornos alimentares sugere que pesquisas devem focalizar prevenção, com foco na construção, em jovens, de conceito positivo sobre autoimagem e sobre si mesmos, a desenvolver o pensamento crítico sobre padrões de imagem e imposições midiáticas e sociais.

Resumen

Objetivo: Identificar la presencia de factores de riesgo para el desarrollo de trastornos alimentarios en estudiantes de enfermería.

Métodos: Estudio transversal con graduandos de enfermería de una universidad pública, donde se utilizaron un cuestionario de caracterización, el Test de Actitudes Alimentarias (EAT) y el Cuestionario de Imagen Corporal (BSQ). El análisis de los resultados se hizo a través del análisis descriptivo, la correlación de Pearson y la regresión lineal.

Resultados: De 120 graduandos, 30 (25%) presentaron alteración en su comportamiento alimentar, 55 (45,8%) insatisfacción con la imagen corporal. Se observó una correlación simple positiva entre los instrumentos EAT y BSQ ($p < 0,001$), donde 20 (66,7%) de los 55 graduandos con alteraciones de BSQ también presentaron alteraciones de EAT. Se encontró una asociación significativa entre el comportamiento alimentar de riesgo (EAT) y el índice de masa corporal (IMC) por encima del estado de eutrofia. Igualmente, hay asociación significativa entre preocupación con la imagen corporal (BQS) y el año de graduación, que se destaca especialmente en el tercero y cuarto años. Hubo una diferencia significativa entre los instrumentos utilizados y la edad, que evidencia que, en la muestra estudiada, los graduandos más jóvenes tienen mayor riesgo de desarrollar trastornos alimentares.

Conclusión: Los graduandos de enfermería presentaron factores de riesgo para el desarrollo de trastornos alimentarios con presencia de preocupación por la imagen corporal y alteración del comportamiento alimentar. La etiología multifactorial de los trastornos alimentarios sugiere que las investigaciones deben centrarse en la prevención, con énfasis en la construcción, por parte de los jóvenes, de un concepto positivo de la autoimagen y sobre si mismos, y en desarrollar el pensamiento crítico sobre patrones de imagen e imposiciones mediáticas y sociales.

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Introduction

Adolescence is the transition from childhood to adulthood and constitutes a period of intense physical, social, mental, and behavioral changes. According to the World Health Organization (WHO), it is the period of life that begins at 10 and extends until 19, that is characterized as a period of risk for development of emotional problems, because of this phase which is characteristic of transition.⁽¹⁾

The World Health Organization states that suicide in adolescence is the third largest cause of death in both sexes, preceded only by traffic accidents and HIV/AIDS; additionally, this phase of the life cycle still presents with depression as the greatest cause of days lost due to disability, also in both sexes.⁽¹⁾

The data above demonstrate how much a young population is exposed to emotional problems and, if we consider the population of university students who nowadays begin their undergraduate course between 16 - 17 years of age, it is possible to perceive that the school demands, during this immature period, may become stressors contributing to the development of psychological suffering.⁽²⁾

A study conducted in southeastern Brazil, with 675 university students using the Lipp Scale, identified a stress rate in 50% of the sample, mostly in the resistance phase, and predominantly among women. Another study conducted in Chile using the Assessment of Academic Stress scales identified a stress rate of 98% in the sample of university students, also with prominence of occurrence in women.^(2,3)

Tension and stress are triggering factors of other forms of psychological suffering, altering behaviors, including eating behavior.^(4,5)

In addition to the tensions related to their education, the adolescent is exposed to a series of social pressures, which at this stage of life can shape or modify their beliefs about body perception and, consequently, eating habits. The more idealized the body, the farther the adolescent is from the "ideal body," the greater the possibility of conflict and the difficulty of acceptance, thus negatively influencing his/her self-esteem.⁽⁶⁾

Body perception is embedded in the process of identity development of adolescents, which involves satisfaction with self-image and dissatisfaction with apparent physical imperfections.⁽⁶⁾ The manner in which adolescents see and/or analyze themselves is continually influenced by society and the media, by aspects related to the development process of a country, the speed of information, and the virtual network technology.⁽⁷⁾ The pursuit for the perfect body grows every day, and this search can become distorted and endless, causing more and more discomfort in the adolescent driven to seek the "perfection" that society insists on emphasizing.⁽⁶⁾

The effect of this type of pressure is more frequent in women between 15-19 years of age, which coincides with the end of high school and admission into higher education courses, which leads to changes of customs, socializing with new people, distancing from the family, and adoption of new life habits, including those surrounding eating; these are associated with greater responsibilities, that is, situations that contribute to increased levels of tension.⁽³⁾

Therefore, the pressures of searching for the perfect image and the changes in daily life, established during university life, can lead to a struggle in the process of vulnerability with regard to the development of eating disorders (ED).

Eating disorders (ED) are mental illnesses that particularly affect adolescents and young female adults, related to both psychological and social impairments, and are related to increased morbidity and mortality. They can affect people of all social classes, races, level of education, and sex. Anorexia and bulimia are the most serious manifestations, and are associated with clinical malnutrition, metabolic, gastrointestinal, endocrine, and renal changes.^(8,9)

The entry into university exposes the individual to a new way of life, and a social style that can influence the satisfaction with body image.⁽¹⁰⁾ This transition can also cause changes in eating behaviors.^(8,10) Studies have been conducted to evaluate the eating attitudes and body satisfaction of new university^(8,10-12) as risk factors for the development of ED, however, few studies address the subject directly related to the undergraduate nursing students.

Nursing is a professional category, predominantly of women; considering that university women are more subject to stress and its symptoms, as well as to the development of risky eating behavior and eating disorders, the question to be asked is: Are there risk factors for the development of ED in the population of public university undergraduate nursing students in the city of São Paulo? Accordingly, this study aimed to identify the presence of risk factors for the development of eating disorders in undergraduate nursing students.

Methods

This was a cross-sectional quantitative study, in which 335 nursing undergraduates enrolled in the Paulista School of Nursing (Escola Paulista de Enfermagem - EPE) of the Federal University of São Paulo (Universidade Federal de São Paulo - UNIFESP) were invited to attend.

Data collection was performed from February to April of 2016, in a reserved space, after orientation and consent of the participants who completed a questionnaire with data such as sex, age and year of study. Two other instruments were administered: Eating Attitude Test (EAT-26) for assessment of the presence of risk for the development of ED, and the Body Shape Questionnaire (BSQ) to evaluate body image perception. After the interview, weight and height were verified for calculation of the body mass index (BMI), with classification according to the Ministry of Health.⁽¹³⁾

The EAT is used to track individuals who are susceptible to developing anorexia or bulimia nervosa, and is an index of the severity of typical concerns, such as intending to lose weight and fear of gaining weight. The short version is a Likert scale with 26 items, ranging from 0 to 78 points, considering a risky eating behavior score equivalent to 21 points; in a validation study, the EAT presented internal consistency of 0.80 by Cronbach's alpha.⁽¹⁴⁾

The BSQ is a Likert scale that includes 34 items that can total 204 points; it enables the measurement of the preoccupation with weight and body

shape, classified as: none (less than or equal to 80), mild (between 81 and 110), moderate (between 111 and 140), severe (greater than or equal to 140). Thus, the higher the score the greater the concern, and, it is believed that preoccupation with body image can influence patterns and habits of life; additionally, in a psychometric evaluation study, the BSQ presented an internal consistency index of 0.96 by Cronbach's alpha.⁽¹⁵⁾

To characterize the sample, descriptive statistics were used. The SPSS 22.0 software database was used for statistical analysis, and the frequency was obtained from the compiled data. The correlation between the two instruments used, EAT and BSQ, was also analyzed. Finally, the parametric tests of Pearson correlation and linear regression was applied to identify, in the sample characteristics, the potential factors associated with the EAT and BSQ results.

Ethical aspects were respected, and the study was registered as CAAE 46595715.1.0000.5505 and the opinion of approval 1.192.261/2015 of the Committee of Ethics in Research UNIFESP

Results

A total of 120 undergraduate students (35.8%) participated in the study, including 30 students from each undergraduate year, totaling: 27% of students from the first, 34% from the second, 50% from the third, and 39.5% from the fourth year. Of these, 84.2% had a mean of 21.9 (+/-4.2) years, and a mean BMI of 23.3 (+/-4.5).

Among the 120 participants, 30 (25%) presented a risk factor for the development of ED, according to the results of the EAT, mainly the students from the first and third year from the course, who also included the students with lower age range.

Regarding the BMI, 58.3% of the sample presented a score within the normal range, 10.8% had low weight, 23.3% were overweight, 5.1% were classified as obesity I, and 2.5% as obesity II.

The BSQ analysis demonstrated that 45.8% of the sample, that is, 55 students, stated some appre-

hension regarding body image. In the classes, 50% from the first and fourth years had some concern about body image, as well as 60% from the third year, and 23.3% from the second year. Of the students worried about body image, 54.5%, (30 students) also presented risky eating behavior.

The descriptive presentation of the results and the statistical analysis did not show significant differences between the variables evaluated and the instruments used, except for the variable age, as presented in table 1. Therefore, students from the first and third years had a greater concentration of students between the ages of 18 and 21, the age group at risk for the development of eating disorders.

Table 1. Distribution of variables according the educational year

Characteristics	4 th year Class of 74	3 rd year Class of 75	2 nd year Class of 76	1 st year Class of 77	Total	Comp. Class <i>p</i>
Age						0.000
Min - Max	20 -48	19 - 29	18 - 30	18 - 40	18 - 48	
Mean (SD)	23.6 (5.4)	21.7 (2.3)	22.2 (3.6)	20.1 (4.1)	21.9 (4.2)	
Sex						0.36
Male n(%)	3 (10)	3 (10)	6 (20)	7 (23.3)	19 (15.8)	
Female n(%)	27 (90)	27 (90)	24 (80)	23 (76.3)	101 (84.2)	
Weight						0.31
Min - Max	42 - 91	36 - 90	42 - 101	41 - 101	36 - 101	
Mean (SD)	63.0 (13.4)	59.6 (11.6)	63.6 (15.8)	65.3 (15.0)	62.9 (14.0)	
BMI						0.57
Min - Max	17 - 38	17 - 29	16 - 38	18 - 32	16 - 38	
Mean (SD)	23.6 (4.9)	22.8 (3.4)	23.1 (5.4)	23.7 (4.0)	23.3 (4.5)	

No significant difference was identified between the scores on the instrument and the risk classification between the classes, but a simple positive correlation was found between the EAT and BSQ instruments ($p < 0.001$), that is, the risk for eating behavior was present in 20 (66.7%) students of the 30 (100%) who presented risky eating behavior (Table 1).

The linear regression enabled the identification of a significant association between risky eating behavior (EAT) and the BMI, showing that 18 (60%) students of the 30 (100%) presenting risky eating behavior also presented a BMI alteration, body weight above normal (Chart 1). The linear regression presented a significant association between preoccupation with the body image (BSQ) and year in the course, especially for those from the third and fourth years, as demonstrated in chart 1.

Chart 1. Distribution of the sample by age, BMI, and risk results on the EAT

Age	BMI	EAT	BSQ	Age	BMI	EAT	BSQ
4 th year, class of 74				2 nd year, class of 76			
21	23.82	27	Moderate	18	37.66 obesity II	29	
34	23.42	20	Mild	24	32.71 obesity II	31	
23	23.56	43	Severe	18	28.72 overweight	26	Severe
21	26.72 overweight	24	Moderate	19	15.97 low weight	28	
22	19.36	39	Severe	26	23.2	27	Mild
24	38.03 obesity II	32	Severe	22	22.04	30	
3 rd year, class of 75				1 st year, class of 77			
19	25.63 overweight	29	Severe	19	30.61 obesity I	40	Mild
19	25.64 overweight	30	Mild	24	29.35 overweight	29	Mild
21	26.6 overweight	22	Mild	20	21.87	23	
21	25.78 overweight	28	Mild	19	19.82	25	
21	27.35 overweight	22	Moderate	22	24.74	26	
23	20.55	24	Severe	18	26.44 overweight	22	
22	16.89 low weight	45	Mild	20	25.93 overweight	22	Mild
21	25.77 overweight	35	Mild	18	19.88	21	
21	27.68 overweight	40	Severe	18	31.53 obesity I	22	

Discussion

The study shows that nursing undergraduate students are concerned with their body image, and more than half of them also present risky eating behavior, which may be translated into a greater risk for the development of eating disorders.

The results should be evaluated not only to consider the issues related to eating disorders, but mainly as factors that already constitute a form of suffering, if we understand body image as an aspect of importance for self-esteem of the individual. This was shown in a study with 471 adolescents, which identified 62.8% with low self-esteem, 23.2% preoccupied with body image, and 21.7% with risky eating behavior for developing eating disorders.^(16,17)

In the sample, 45.8% of the students presented some preoccupation with body image. These findings are similar, with the results of 47% of 300 students of a nutrition course in Brazil; they are higher than the result of a study conducted in Juiz

de For a, with 30.71% of 276 women and 19.59% of 311 men in the sample of 587 students from several different university courses. A study conducted in Santa Catarina with university students from different courses that used a scale showing silhouettes to evaluate their body image, found that 77.9% of the sample showed dissatisfaction with their body image, a much higher index than that found in our study. Our findings make it possible to reflect on how dissatisfaction with body image frequently occurs.^(9,10,11)

Concern about body image and weight occur independently of the state of eutrophy, as found in this study. This can be a factor of suffering due to social and media pressures, associated with the living conditions of the students, with emphasis on students from public universities who, at present, have the possibility of attending higher education institutions far from their families, through competition by an electronic enrollment system and use of scores obtained during high school evaluation.^(3,8)

Regarding eating behavior, this study showed that 25% of the sample of 120 students presented changes in eating behavior as a risk for the development eating disorder, this was similar to a study conducted in southern Brazil, with university students attending health courses, which identified 22.4% of a sample of 214 students exhibiting the same behavior.⁽¹⁸⁾

In a study performed with 2483 university students across all regions of Brazil, variations in EAT scores between 23.7% and 30.1% were identified, as a frequency of risky eating behavior for ED, confirming that this phenomenon is widespread in the national territory; these values are similar to the data obtained in our research.⁽¹⁹⁾

The results related to EAT presented in the mentioned study are lower than 45.5% of the sample of 189 female medical students, for whom results showed a risk of developing binge eating disorder, when associated with the Bulimic Investigatory Test, Edinburgh (BITE).⁽¹²⁾

A correlation between EAT scores and altered BMI above the normality indexes was identified in this study, which would be expected in an attempt to control body weight; however, this was

not found among Indian nursing students who presented changes in BMI, but not in the EAT indexes.^(20,21)

Indian nursing students presented correlations between BMI and BSQ⁽²¹⁾ and, in the sample studied, the correlation of the BSQ result was related to the EAT and the year in the course. The year in school of the students did not present a correlation with BSQ scores in a cross-sectional study performed with undergraduate university nutrition students in Fortaleza,⁽⁹⁾ different from that observed in this study.

The students in the first and third years of nursing school showed a higher frequency of changes in eating behavior and, according to the literature, the lower age range,^(6,7,10,11) which may make students more exposed to feelings of dissatisfaction with body image, as identified in the statistical analysis.

Nursing students, mostly females, were integrated into a context of strong social pressure, in which healthy habits and body appearance, within the society's standards, need to be maintained,⁽²¹⁾ which makes them a risk group for the development of eating disorders.⁽¹⁷⁾

The alterations found in risky eating behavior, and in regard to the preoccupation with body image, was also identified in studies conducted with university students of different courses; this was true not only in Brazil,^(7,9,12,21,22) which highlights the importance of studies on risk factors for the development of eating disorders, especially in young girls and adolescents.^(8-12,17)

The prevalence of these risk behaviors has increased in recent decades, which coincides with the emergence of new concepts of beauty that are being strongly disseminated by the media.^{17,23)} On the other hand, the same media that suggests "thinness" as the perfect beauty pattern, influences the intake of high-calorie foods, leading adolescents to adopt risk behaviors to fit the "right" standards and achieve the perfect pattern of beauty.⁽⁸⁾

Body weight influences risk factors for eating disorders, and studies show that changes in BMI can generate dissatisfaction with body image, which is considered the main triggering agent for risk behavior related to eating disorders.^(8,9)

It is important to study eating disorders and their triggering factors, so that educational actions can be developed that enable the prevention and early identification of these problems.⁽⁸⁾

The limitation of this study is the fact that it included only nursing students, which compromises generalization. Further studies with students from different courses are suggested, from public and private universities, including with a more expressive integration of male participants. Longitudinal studies are also suggested to obtain information regarding the evolution or non-existence of risk scores for EAT and BSQ during the undergraduate program.

The contribution of this study to nursing is raising the alarm on the risk of eating disorders in students, and it enables the development of prevention of projects in mental health and in health promotion, aiming to strengthen students through stimulation of self-esteem and critical thinking.

Conclusion

The present study shows that nursing undergraduates are very concerned about their body image, which is independent of the eutrophic state. The majority of students who presented dissatisfaction with body image also had a BMI alteration, with weight above normal, and risky eating behavior for development of an eating disorder, demonstrated by the simple positive correlation between the BSQ and EAT, and a significant association between the EAT and BMI. Younger students were more exposed according to statistical analysis. Considering the multifactorial etiology of eating disorders, research should focus on development of prevention techniques that stimulate the positive concept of self-image and encourage the development of critical thinking about image patterns, and media and social impositions.

Collaborations

Mazzaia MC and Santos RMC contributed to the study design, analysis, data interpretation, article writing, and final approval of the version to be published.

References

1. World Health Organization. Health for the world's adolescents. A second chance in the decade 2014 [Internet]. [cited 2016 Mar 8]. Available from: <http://apps.who.int/adolescent/second-decade/>
2. Jerez-Mendoza M, Oyarzo-Barría C. Estrés académico en estudiantes del Departamento de Salud de la Universidad de Los Lagos Osorno. *Rev Chil Neuro Psiquiatr.* 2015; 53(3):149-57.
3. Lameu JN, Salazar TL, Souza, WF. Prevalência de sintomas de stress entre graduandos de uma universidade pública. *Psicol Edu Online.* 2016; 42:13-22.
4. Gama CA, Campos RT, Ferre AL. Saúde mental e vulnerabilidade social: a direção do tratamento. *Rev Lat Am Psicopatol Fundam.* 2014;17(1):69-84.
5. Vítolo MR, Bortolini GA, Horta RL. Prevalência de compulsão alimentar entre universitárias de diferentes áreas de estudo. *Rev Psiquiatr RGS.* 2006;28(1):20-6.
6. Bitencourt LJ, Almeida RA. Transtornos alimentares: patologia ou estilo de vida? *Psic e Soc.* 2013; 25(1):220-9.
7. Pike KM, Dunne PE. The rise of eating disorders in Asia: a review. *J Eating Disord.* 2015;3:33.
8. Fortes LS, Filgueiras JF, Oliveira FC, Almeida SS, Ferreira ME. Modelo etiológico dos comportamentos de risco para os transtornos alimentares em adolescentes brasileiros do sexo feminino. *Cad Saúde Pública.* 2016; 32(4):1-11.
9. Bandeira YE, Mendes AL, Cavalcante AC, Arruda SP. Avaliação da imagem corporal de estudantes do curso de Nutrição de um centro universitário particular de Fortaleza. *J Bras Psiquiatr.* 2016 ; 65(2):168-73.
10. Carvalho HB, Filgueiras JF, Neves CM, Coelho FD, Ferreira ME. Checagem corporal, atitude alimentar inadequada e insatisfação com a imagem corporal de jovens universitários. *J Bras Psiquiatr.* 2013; 62(2): 108-14.
11. Martins CR, Gordia AP, Silva DA, Quadros TM, Ferrari EP, Teixeira DM et al. Insatisfação com a imagem corporal e fatores associados em universitários. *Estud Ppsicol (Natal).* 2012;17(2):241-6. .
12. Bosi ML, Nogueira JA, Uchimura KY, Luiz RR, Godoy MG. Comportamento alimentar e imagem corporal entre estudantes de medicina. *Rev Bras Educ Med.* 2014; 38(2):243-52.
13. Atenção Primária à Saúde. Cálculo do índice de massa corpórea [Internet]. São Paulo: BVS; s.d. [citado 2016 Fev 1]. Disponível em: <http://aps.bvs.br/apps/calculadoras/?page=6>
14. Gross J, Rosen JC, Leitenberg H, Willmuth ME. Validity of the eating attitudes test and the eating disorders inventory in bulimia nervosa. *J Consul Clin Psychol.* 1985; 54 875-6.
15. Conti MA, Cordás TA, Latorre MR. A study of the validity and reliability of the Brazilian version of the Body Shape Questionnaire (BSQ) among adolescents. *Rev Bras Saude Mater Infant.* 2009;9(3):331-8.
16. Leonidas C, Santos MA. Imagem corporal e hábitos alimentares na anorexia nervosa: uma revisão integrativa da literatura. *Psicol Reflex Crit.* 2012; 25(3): 550-8.
17. Fortes LS, Meireles JF, Neves CM, Almeida SS, Ferreira ME. Autoestima, insatisfação corporal e internalização do ideal de magreza influenciam os comportamentos de risco para transtornos alimentares? *Rev Nutr.* 2015;28(3):253-64.

18. Pereira LN, Trevisol FS, Quevedo J, Jornada LK. Eating disorders among health science students at a university in southern Brazil. *Rev Psiquiatr RGS*. 2011; 33(1):14-9.
19. Alvarenga MS, Scagliusi FB, Philippi ST. Comportamento de risco para transtorno alimentar em universitárias brasileiras. *Rev Psiquiatr Clín*. 2011; 38(1):3-7.
20. Balhara YP, Yadav T, Arya K, Mathur S, Kataria DK. A cross-sectional study of body shape and eating attitude among Indian female healthcare students. *Int J Psychiatry Med*. 2012; 43(4):309-23.
21. Balhara YP, Mathur S, Kataria DK. Body shape and eating attitudes among female nursing students in India. *East Asian Arch Psychiatry*. 2012; 22(2):70-4.
22. Chandra PS, Abbas S, Palmer R. Are eating disorders a significant clinical issue in urban India? A survey among psychiatrists in Bangalore. *Int J Eat Disord*. 2011; 45(3):443-6.
23. Palma RF, Santos JE, Ribeiro RP. Evolução nutricional de pacientes com transtornos alimentares: experiência de 30 anos de um Hospital Universitário. *Rev Nutr*. 2013; 26(6):669-78.