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Quality of life and eating attitudes of health care students

Qualidade de vida e atitudes alimentares de graduandos da área da saúde

Calidad de vida y actitudes alimentarias de estudiantes universitarios del área de la salud

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ABSTRACT

Objective: To assess the quality of life and eating attitudes of health care students of the undergraduate programs of a public university. **Method:** Observational, cross-sectional, and quantitative study performed in a federal university. Three questionnaires were used for data collection: a socio-demographic and academic, the WHOQOL-BREF and the Eating Attitudes Test (EAT-26). **Result:** 399 students participated in this study, most women, average age of 22 years, average scores of EAT-26 of 15.12 and quality-of-life averages above 60 points in all domains. The students of the undergraduate program in Nutrition presented more inappropriate eating attitudes than other health care students; as the age evolves, vulnerability to inadequate eating attitudes increases; and the family income influenced negatively the quality of life in Physical and Social domains. **Conclusions:** Inadequate eating attitude diminishes the quality of life of health care students in all domains of the WHOOQOL-BREF.
Descriptors: Quality of Life; Eating Behavior; Eating and Food Intake Disorders; Health Care Students; Universities.

RESUMO

Objetivo: Avaliar a qualidade de vida e as atitudes alimentares de graduandos dos cursos da saúde de uma universidade pública. **Método**: Estudo observacional, transversal, quantitativo, realizado em uma universidade federal. Foram utilizados três questionários para coleta de dados: um sociodemográfico e acadêmico, o WHOQOL-BREF e o Teste de Atitudes Alimentares (EAT-26). **Resultado:** Participaram do estudo 399 graduandos, maioria feminina, idade média de 22 anos, escores médios de EAT-26 de 15,12 e médias de qualidade de vida acima de 60 pontos em todos os domínios. Os graduandos do curso de Nutrição apresentaram atitudes alimentares mais inadequadas que os de outros cursos da saúde; à medida que evolui a idade, a vulnerabilidade às atitudes alimentares inadequadas aumenta; e a renda familiar influenciou negativamente a qualidade de vida nos domínios Físico e Social. **Conclusões:** A atitude alimentar inadequada diminui a qualidade de vida dos graduandos da saúde em todos os domínios do WHOOQOL-BREF.
Descritores: Qualidade de Vida; Comportamento Alimentar; Transtornos da Alimentação e da Ingestão de Alimentos; Estudantes de Ciências da Saúde; Universidades.

RESUMEN

Objetivo: Evaluar la calidad de vida y las actitudes alimentarias de estudiantes universitarios de los cursos de la salud de una universidad pública. **Método**: Estudio observacional, transversal, cuantitativo, realizado en una universidad federal. Se utilizaron tres cuestionarios para recolección de datos: uno sociodemográfico y académico, el WHOQOL-BREF y el Test de Actitudes Alimentarias (EAT-26). **Resultado:** Participaron en el estudio 399 estudiantes universitarios, la mayoría mujeres, edad media de 22 años, puntuaciones medias de EAT-26 de 15,12 y medias de calidad de vida por encima de 60 puntos en todos los dominios. Los estudiantes universitarios del curso de Nutrición presentaron actitudes alimentarias más inadecuadas que los de otros cursos de la salud; a medida que evoluciona la edad, la vulnerabilidad a las actitudes alimentarias inadecuadas aumenta; y la renta familiar

influenció de manera negativa la calidad de vida en los dominios Físico y Social. **Conclusiones:** La actitud alimentaria inadecuada disminuye la calidad de vida de los estudiantes universitarios de la salud en todos los dominios del WHOOQOL-BREF.
Descriptores: Calidad de Vida; Comportamiento Alimentario; Trastornos de la Alimentación y de la Ingestión de Alimentos; Estudiantes de Ciencias de la Salud; Universidades.

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INTRODUCTION

Food and nutrition must be appropriate to the biological and social aspects of people and to comply with food needs, considering culture, race, gender, ethnicity, financial condition, social and cultural dimensions of the act of eating. And, yet, healthy eating is to feed the body, mind, and spirit, going beyond the simple life support[1].

Eating attitudes involve the relationship with food – for example, eating in response to emotions[2]. Abnormal eating attitudes include several related symptoms and characterized three main types of eating disorders, namely: anorexia nervosa, bulimia nervosa and binge eating[3].

Anorexia nervosa is defined as a psychiatric disorder, characterized by diagnostic criteria related to: the restriction of caloric intake considering the needs; the inability to maintain a proper and healthy weight regarding age and gender; the intense fear of gaining weight or getting fat; the non-recognition of the severity of underweight; and the beginning of symptoms occurring usually in adolescence or young adult[4].

The person with bulimia nervosa presents recurrent episodes of binge eating – which can be understood as "ingestion in a determined time of a quantity of food definitely larger than most individuals would eat in the same time in similar circumstances" – combined with the feeling of lack of control over the situation. The inappropriate compensatory behaviors to not gain weight are self-induced vomiting, misuse of laxatives and diuretics, fasting or excessive exercise, being that binge eating and compensatory behaviors occur at least once per week for three months[4].

Binge eating disorder is characterized by recurrent episodes of binge eating combined with the feeling of lack of control over eating during the episode. Binge eating episodes are associated with three (or more) aspects: eating too fast; eating until you feel painfully full; eating too much in the absence of hunger; eating alone because you were ashamed of how much you were eating; and feeling depressed or very guilty right after[4].

In many cases, eating disorders occur along with other psychiatric disorders such as anxiety, panic attacks, obsessive-compulsive disorder (OCD), and problems with alcohol and drugs abuse[4].

The prevalence of eating disorders varies depending on the group studied, being important the one found in health sciences students, which seems to be higher in comparison to other academic groups[5].

Eating habits can be influenced by entrance into academic life[6]. In addition, eating attitudes unfavorable to health contribute to possible risks of development of eating disorders in undergraduate students[7-8].

Health care students have more understanding about the importance of adopting healthy lifestyle habits, however, it seems that they do not put into practice in their lives the knowledge acquired in the undergraduate programs[9]. Thus, the quality of life of this population, mostly young and in latent professional formation process, could be signaling weakness in terms of physical living condition[10].

During this period of academic life, it is possible to envision factors that influence the morbidities, often confirmed only in aging, but that could be identified as young people. This allows means to prevent them, minimizes the damage to health, and promotes healthy habits[11].

The existence of these inappropriate attitudes among college students can be related to several factors, such as the rapid change in lifestyle and eating habits[3], along with feelings such as fear, angst, insecurity and anxiety in students when the academic routine begins[12].

Food and healthy nutrition are considered factors that promote and protect health and quality of life – basic requirements of human rights[13].

According to the World Health Organization (WHO), quality of life may be defined as "individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns"[6]. As for health, it is "a state of complete physical, mental, and social well-being", not just the absence of disease[14].

The needs of prevention, promotion, or recovery of state of health and quality of life of human beings will be professional responsibilities of health care students in the future. In this sense, the factors that can facilitate the disposition of this population to the learning, especially regarding the positive perceptions about quality of life, arouse concerns of research[10].

OBJECTIVE

To assess the quality of life and eating attitudes of health care students of undergraduate programs of a public university in the interior of Minas Gerais State.

METHOD

Ethical aspects

This study is part of a project developed by the research group "Adulthood and Health" entitled "Promotion and protection of physical and mental health of undergraduate students." It was approved in September 2015 by the Research Ethics Committee (REC) from UFTM to meet the requirements of the Resolution 466/12 of the National Health Council.

Study design, location and period

Observational, cross-sectional and quantitative study, conducted in a public university in Minas Gerais, BR, and whose data collection took place in the second half of 2016.

Population or sample: inclusion and exclusion criteria

The population of this study consisted of health care students, in areas such as: Biomedicine, Physical Education, Nursing, Physical Therapy, Occupational Therapy, Nutrition, and Medicine. Those who were on leave, withdraw, or locked the undergraduate program were excluded. We included regularly enrolled students, aged 18 years or more, totaling 1,996 subjects.

We performed the procedure of simple random sample with replacement using the software Statistical Package for the Social Sciences (SPSS) version 21.0, in Portuguese, 2012. Of the 1,996 undergraduate students, 590 were drawn at random.

The calculation of sample size considered a coefficient of determination $R^2 = 0.02$ in a model of multiple linear regression, with four predictors, with significance level or type I error of $\alpha = 0.05$ and type II error $\beta = 0.2$, resulting, therefore, in *a priori* statistical power of 80%. Using the application Power Analysis and Sample Size (PASS), version 2002, with the values previously described, we obtained a minimum sample size of n = 590. Considering 15% of sample replacement (refuse to participate, did not return the questionnaire, incomplete filling of the instrument, withdraw or abandonment of the undergraduate program), the final number of interviews was 695. The dependent variable was the Psychological domain of the WHOQOL-BREF scale. Of the 590 students drawn at random, 399 participated in the study, leading to a sample loss of 191 subjects (absence, license, withdraw or abandonment of the undergraduate programs, refuse to participate in the study and non-return of data collection instrument).

Study protocol

Data were collected with the use of an instrument with three questionnaires, being one socio-demographic and academic developed by the researchers themselves. We assessed the quality of life using the WHOQOL-BREF, which was translated and validated in 2000 for use in Brazil. It consists of 26 questions, of which the first two are general perceptions: the first, on quality of life; the second, on satisfaction with health; and the others were divided into four domains – Physical, Psychological, Social Relations, and Environment[15].

The scores are performed with the use of Likert-type scale, from 1 to 5 points[16], staggered in a positive direction: the closer to 100 the averages are, the better the quality of life in that domain[15].

The scores of each domain were multiplied by 4, to leave them with 100 points, compared to the WHOQOL-100; for this, we used the syntax provided by the WHOQOL group.

Eating attitude was measured by the Eating Attitudes Test (EAT-26), which is an abbreviated version of EAT-40, of 1982[17]. The result of the test is the sum of the responses, characterized by a Likert-type scale[16]. All the 26 questions of the test present 6 response options: always (3 points); many times (2 points); sometimes (1 point); rarely, almost never, and never (0 point). The question number 25 is an exception, because it presents points in reverse order, so that responses with "always," "often," and "sometimes" are not punctuated, i.e., they receive 0, and responses with "rarely," "almost never," and "never" are punctuated with 1, 2, and 3 respectively[18-20].

EAT-26 is a valid psychometric test[19], which aims to measure the frequency of food restriction, binge eating, purgative behaviors, and pressure of the environment for food intake[20]. It was translated and validated in Brazil by Bighetti and others in 2004 to the female population, in a study with 365 female teenagers in the city of Ribeirão Preto, SP, BR[19].

The questionnaire is composed of three subscales: Diet; Bulimia and concern with food; and Oral control.

For this study with health care students, the total scores were considered in a quantitative way, which can vary from 0 to 78 points, so that, the higher the total score, the greater the risk for developing eating disorders.

Analysis of the results and statistics

Univariate analysis of categorical variables was conducted, which included absolute and relative frequencies, whereas the quantitative variables were summarized with the use of measures of central tendency (mean and median) and dispersion (range and standard deviation). The bivariate analysis of the EAT-26 scores included t test for dichotomous predictors, Spearman's correlations for ordinal quantitative variables (monthly household income and period of the undergraduate program) and Pearson's correlations for quantitative variable (age); and the multiple linear regression included the simultaneous influence of socio-demographic and academic predictors, and the secondary outcome (EAT-26). The variable "undergraduate program" was dichotomized in Nutrition and others, for linear regression analysis.

The significance level used was $p \leq 0.05$.

RESULTS

There was greater participation of Medical students (29.6%) and less adhesion of the undergraduate program in Physical Education (5.3%), Table 1.

In this study, there was greater female participation (72.4%) with predominance (67.2%) of subjects between 20 and 24 years and modal age of 22.37 years. Approximately half (51.6%) of the sample had household income of 2 to 10 minimum wages.

The total scores of the EAT-26 had amplitude of 1 to 49 points, average of 15.12, and standard deviation of 10.01.

Table 1 – Distribution of health care students in Uberaba, Minas Gerais, Brazil, 2017

Variables	Participants	
	n	%
Undergraduate program		
Biomedicine	55	13.8
Physical Education	21	5.3
Nursing	77	19.3
Physical Therapy	62	15.5
Medicine	118	29.6
Nutrition	35	8.8
Occupational Therapy	31	7.8
Total	399	100

Table 2 – Correlation between scores of the EAT-26 with age, family income, and period of health care students in the Federal University of Triângulo Mineiro, Uberaba, Minas Gerais, Brazil, 2017

Variables	Scores of the EAT-26	
	R	*p* value
Age	0.145	0.004*
Household income	0.048	0.343**
Period	0.229	**< 0.001****

*Note: *Pearson's correlation coefficient; ** Spearman's correlation coefficient*

Table 3 – Measures of Centrality and dispersion of the scores of the domains of quality of life (WHOQOL-BREF) of the health care students in Uberaba, Minas Gerais, Brazil, 2017

WHOQOL-BREF Domains	Minimum	Maximum	Median	Mean	Standard Deviation	α*
Physical	14.29	100.00	67.85	65.82	15.01	0.78
Psychological	8.33	95.93	62.50	63.27	14.93	0.77
Social	8.33	100.00	75.00	71.30	17.78	0.70
Environment	28.13	96.88	62.50	62.44	12.81	0.72

*Note: *Measure of internal consistency (Cronbach's alpha).*

Table 4 – Linear regression between the scores of the EAT-26 and the variables "sex," "undergraduate program," "age," and "monthly family income" of the health care students in Uberaba, Minas Gerais, Brazil, 2017

Variables	Scores of the EAT-26	
	β	*p*
Sex	0.08	0.09
Undergraduate program	0.10	0.03
Age	0.14	0.004
Monthly household income	-0.10	0.04

The correlation between the scores of the EAT-26 with age and period of undergraduate program (Table 2) was considered weak and positive, with statistically significant difference, indicating that the greater the age and the academic period, more inappropriate is the eating behavior.

According to Table 3, we calculated the internal consistency of the WHOQOL-BREF using Cronbach's alpha coefficient for each domain and it presented satisfactory values that indicate good reliability of the answers of the participants. The highest average was obtained in the Social domain (71.30) and the lowest, in the Environment domain (62.44).

According to Table 4, it was observed that the variable "sex" did not report itself as statistically significant, demonstrating that there is no difference between eating attitudes of men and women in the academic period. The variable "undergraduate program" presented positive β (0.10) and statistical significance (p = 0.03), showing that students of the undergraduate program in Nutrition present more inadequate eating attitudes, so that they are more exposed to the risk of eating disorder than the other health care students of the university of this study.

The variable "age" presented positive β (0.14) and statistical significance (p = 0.004), indicating that, the greater the age, the higher the scores of the EAT-26, that is, the more the age increases, more inappropriate becomes the eating behavior and the greater the risk of developing eating disorder.

The negative value of β (- 0.10) for the variable "monthly household income" (p = 0.04) indicated that the lower the household income, the higher the score of the EAT-26, implying more inappropriate eating behavior.

According to Table 5, the household income showed statistically significant difference in the Physical (p = 0.009) and Social (p = 0.03) domains, with positive β (0.10 and 0.13, respectively) in both domains. These findings indicate that the quality of life of the participants of this study in these domains is better the greater is their family income.

The scores of the EAT-26 were statistically significant in the four domains of quality of life with negatives values of β. Thus, it was observed that inadequate eating attitude diminishes the quality of life of undergraduate students in physical, psychological, social, and environmental aspects.

DISCUSSION

In a study conducted in 9 Spanish universities with health sciences students, there was greater participation of undergraduate students in Nursing (63.6%) followed by Physical Therapy (22.7%), Medicine (11.4%), and Dietetics (2.3%), with female predominance (70.4%). The average age was of 21.35 years[21].

Table 5 – Linear regression between the scores of the domains of quality of life (WHOQOL-BREF: Physical, Psychological, Social, and Environment) with sex, age, monthly family income, and scores of the EAT-26 of health care students in Uberaba, Minas Gerais, Brazil, 2017

Variables	Physical Domain		Psychological Domain		Social Domain		Environment Domain	
	β	*p*	β	*p*	β	*p*	β	*p*
Sex	-0.03	0.58	-0.01	0.78	0.08	0.09	0.06	0.21
Age	0.001	0.98	0.02	0.56	-0.06	0.22	0.03	0.50
Household income	0.13	0.009	0.07	0.16	0.10	0.03	0.21	0.67
EAT-26	-0.16	0.001	-0.16	0.002	-0.15	0.002	-0.13	0.008

In southeast Asia, in a sample composed of undergraduate students in Nursing (49.8%), Radiography (26.6%), and Technology in Medical Analysis (23.7%), it was identified an average age of 20 years[22]. In northeastern Brazil, it was also found female prevalence (77.7%) and average age of 22 years[12].

Colombian undergraduate students in Physical Therapy, Medicine, Nutrition, Nursing, and Microbiology showed similar results, with 62.9% of women, average age of 20.6 years[23].

Findings of studies from Spain[21], Malaysia[22], Colombia[23], northeastern Brazil[12], and of research results with Chilean undergraduate students[24] corroborate the results of this research, with greater female population among health care students. As for data of a national research of 2014, it indicates that women are the most frequent students, regardless of the mode of teaching[25].

The age group among the population of the studies was very close, and the average ranged from 20 to 22 years, which ratifies the average of 22.37 obtained in this study and the modal age of 21 years published by the Higher Education Census[25].

In line with this study, we identified prevalent income ranges (40.2%) between 4 and 6 minimum wages[26]. In another study, 74.6% of the research subjects had income between 3 and 4 minimum wages[23], and it was identified that 68% of a sample of students of a public university responded that the available income was insufficient[27].

The stratification of family income varied greatly from study to study, but it was noticeable the importance of this variable for studies with students related to quality of life.

Regarding the scores of the EAT-26, very similar average (15.3) was found among undergraduate students in Physical Education from the interior of São Paulo State[7]. As for Nursing undergraduates in India, the average score was 7.9[28]. A study conducted in five regions of Brazil (North, Northeast, Central-West, Southeast, and South) showed that 26.1% of the sample of health care students had a risky behavior to developing eating disorders[2]; and, in Karachi (Pakistan), were found 22.75% of men and women in academic period at risk for developing these disorders[29].

Similar results were found in Nursing undergraduates, related to the highest average of quality of life in the Social domain (average of 74.3)[12]. And, in Medical students of the State University of Rio de Janeiro, the average in the Environment domain was 58.0[30], which confirm the data obtained in this study, the lowest average for the Environment domain.

In this study, no difference was observed between eating attitudes of men and women; In contrast, a significant difference was found ($p = 0.01$) in eating attitudes between the sexes[29]. And, also in the interior of Minas Gerais State, students from various fields of knowledge (Computer Science, Law, Civil and Electrical Engineering, Philosophy, Mathematics, Medicine, Physical Therapy, and Psychology) showed a significant difference ($p = 0.001$) between the male and female scores[31]. Such opposition findings were also confirmed by the American Psychiatric Association, in which women had higher prevalence of eating disorders[4].

Regarding the results observed in this study, of higher risk of eating disorder in Nutrition Science students, additives results were found because higher levels of dietary restriction and binge eating were verified, which indicated an inadequate eating behavior in Portuguese undergraduate students in Nutrition of both sexes when compared with other fields of knowledge (Basic Education, History, Psychology, Dentistry, Medicine, Electrical Engineering, Art History, Political Science, Geography, and Architecture)[32]. In a Spanish university, undergraduate students in Nursing and Nutrition and Dietetics keep inadequate eating behavior[33]. Corroborating these findings, significant risk for developing eating disorders was identified among the participants of the undergraduate program in Nutrition, because 21.7% presented scores equal to or greater than 21 points in a university of the interior of Minas Gerais State[26].

Eating disorders mostly affect women between the ages of 12 and 35, age range in which most of the participants of this study is[4]. However, a frequency of 24% was identified (identical to the one found in this study with undergraduate students) of inadequate eating behaviors in adolescents of up to 15 years, with an increase of food restriction and purgative behaviors among girls with overweight/obesity[34].

A finding regarding monthly income and eating disorder in accordance with this research was identified in another study, because there was a higher likelihood of eating disorders in students whose parents earn less than one monthly minimum wage[35].

In linear regression performed with Medical students, it was identified, in line with our findings, influence of income in the Physical domain and, unlike the findings in this study, in Psychological and Environmental domains[30].

The fact of having severe eating disorder is associated with the greatest need for health care[36], being this need one aspect of the Environment domain of the WHOQOL-BREF.

Populations with eating disorders have levels of quality of life significantly lower in all areas, thus, the quality of life of these populations is an important point to set targets for clinical intervention while the definitive cure is not yet available[37]. Losses in the quality of life of individuals with eating disorders are higher when compared with healthy people or with other psychiatric disorders[38].

Study limitations

This study showed as limitations the cross-sectional design with unique approach, use of self-applicable questionnaires that depend on the commitment and the veracity of the respondent, scarcity of studies related to quality of life and eating attitudes to strengthen discussion, as well as sample loss (32%) higher than foreseen (15%) due to the adhesion of students to strike action at the end of the period of data collection.

Contributions to the fields of nursing, health, or public policies

This is an original study and we hope to contribute to arouse concerns and to promote the discussion of public policies related to higher education students. Performing academic and labor activities aimed at direct or indirect assistance to the community implies both contributing to the improvement of quality of life and health of the population and taking care of oneself to be able to do it for others.

Therefore, this study aimed to provoke reflection about the eating attitudes and quality of life of health care students, since the early identification of inadequate eating attitudes can contribute to the non-development of eating disorders and to the promotion of a better quality of life. The results of this study provided

new information related to the population researched, as well as corroborated the findings of other researches already performed.

We suggest that future studies be performed, extending the population researched and/or with other guidelines to contribute and better assess the trend of quality of life and eating attitudes among undergraduate students.

CONCLUSION

In this study, the sex did not lead to a difference of inadequate attitudes among health care students, contradicting most studies that claim a higher prevalence in women.

The students of the undergraduate program in Nutrition showed inadequate eating attitudes when compared to students of other health areas; thus, they were considered the most exposed to risk of eating disorders, which deserves attention because they will be professionals who will work with the prevention and promotion of healthy eating habits.

The fragility to develop eating disorder was shown to be greater with increasing age of the students, leading to reflection on the need to devote attention to these young people, not only in the period of entry into higher education, but also during the whole academic period.

Offering conditions of improvements to encourage the promotion of quality of life of low-income students must be discussed through educational public policies, because the lower the income, the lower the quality of life of undergraduate students.

The identification of eating behavior of health care students is needed to avoid possible psychiatric disorders related to food, since the quality of life of this population, in latent process of professional formation, was decreased by inadequate eating attitudes.

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