


Remote teaching and eating disorders in nursing students during the Covid-19 pandemic

 <https://doi.org/10.56238/emerrelcovid19-032>

Ingrid de Carvalho Oliveira

Student in Nutrition at the University of Pernambuco Campus Petrolina.

Mirian Lopes de Souza

Student in Nutrition at the University of Pernambuco Campus Petrolina.

Cristhiane Maria Bazílio de Omena Messias

Doctor of Science. Professor of the Nutrition Course at the University of Pernambuco, Campus Petrolina.
E-mail: cristhiane.omena@upe.br

Marianne Louise Marinho Mendes

Ph.D. in Food Science and Technology. Professor of the Nutrition Course at the University of Pernambuco Campus Petrolina.

ABSTRACT

The context of the pandemic and the implementation of the remote teaching model brought changes to the usual lifestyle of most students. And in this way, inadequate eating behavior made nursing students susceptible to psychological eating disorders. Objective: to analyze the influence of remote teaching on the prevalence of the development of eating disorders (EDs) associated with image distortion in nursing students during the pandemic. Methodology: This is an observational, cross-sectional quantitative study

with university students of the nursing course at the University of Pernambuco, located in the city of Petrolina, who were interviewed voluntarily in person. Eating behavior and image distortion were investigated using the Eating Disorder Examination Questionnaire (EDE-Q) and Silhouette Matching Task (STM) instruments, respectively. In addition, other data were collected from a sociodemographic questionnaire to verify the profile of the participants. Results: It was found that 92% of the evaluated students changed their eating habits after the pandemic, the majority being female. And that 48% of the students had positive results for the risk of developing ATs, and of these, 91% claim an increase in the frequency of key AT behaviors after experiencing remote teaching. Furthermore, it was observed that 85% of university students in the nursing course had alterations in their perception of body image. Conclusion: The statistical observational analysis carried out demonstrates that remote teaching implemented during the stress phase of the COVID-19 pandemic, influenced the increased risk of developing EDs and body dissatisfaction in students, reaffirming the need for preventive measures and awareness regarding the adoption of new teaching models. This emphasizes the importance of further studies on this issue.

Keywords: Eating behavior, distance learning, COVID-19.

1 INTRODUCTION

Science classifies the pandemic as a phase in which a new disease spreads across different continents being transmitted from person to person. Thus, in Brazil in 2020 it was no different since there was the spread of a severe acute respiratory infection caused by the SARS-CoV-2 coronavirus, popularly known as COVID-19 (Ele & Deng, 2020; Ventura et al., 2021).

In this way, since the beginning of the pandemic outbreak, there has been a great concern of the population, in the face of a deadly disease, which spread easily in various regions of the world.

Given a new situation, in which there were no strategic plans ready to be applied, there was the implementation of containment and social distancing measures, where commercial places, leisure

spaces, schools, and universities were closed, causing the entire population to change their usual routine to adapt to a new way of living (Freitas, Napimoga & Donalisio, 2020).

As a means of preventing the disease, the World Health Organization recommended to governments the so-called Non-pharmacological Interventions (NPI), with individual, environmental, and community reach, including measures such as hand washing, use of masks, and, with greater weight, social isolation. As a result, people began to practice less physical activity, more time in front of screens, increased consumption of ultra-processed foods and worsened mental status due to greater social restrictions due to viral dissemination (Sunde, 2021).

In this context, on March 17, 2020, Ordinance No. 343 of the Ministry of Education began replacing face-to-face classes with remote online classes throughout the entire education network for an indefinite period, depending on the duration of the COVID-19 pandemic. (Santana et al., 2021). And, given this circumstance, distance learning stood out, as it served as one of the educational tools in the evidenced context (Barreto & Rocha, 2020).

Educational institutions, both private and public, applied the emergency remote teaching model in order not to interrupt the pre-established flow. This meant that digital technologies were seen as great allies in the teaching-learning process at all levels of education, from elementary to higher education (Rondini, Pedro & Duarte, 2020). Thus, the implementation of this modality generated greater vulnerability in students to the development of psychological alterations, mainly due to chronic stress, lack of study management, strenuous workload, weariness, and a feeling of low performance in classes. In addition, eating behavior is directly related to the emotional state, which is responsible for the process of choice and quantity of food eaten (Magalhães, 2021).

Given this, WHO shows that the impact of the COVID-19 pandemic on people's mental health is extremely worrying. This risk becomes evident, above all, in the student population, since the interruption of classes in some universities created a climate of stress (Sunde, 2021). And, the changes in everyday life, associated with the material, social, economic, and psychological conditions of the university public to adapt to the new scenario, printed expressive anguish, generating possible mental suffering and changes in the sleep pattern and consequently in the eating profile, which may impact the quality of life (Santana et al., 2021).

In addition, it is clear that the context of the pandemic increased concerns about health and physical fitness during confinement, and these conditions served as a precipitating factor for the development of eating disorders (ED) in vulnerable individuals related to sociocultural and psychological aspects, also contributing to body image distortion (Fernandes-Aranda et al., 2020).

Given this, EDs are classified as psychiatric illnesses identified by significant changes in eating behavior and weight control and body image, which can cause emotional and clinical damage

(Timerman, 2021). And in this context, the inadequate eating habit tends to increase in stressful situations, which makes these students prone to the emergence of EDs. Since EDs have a multifactorial etiology, which is influenced by family experience, the sociocultural environment and behavioral aspects. These being the factors responsible for the installation and maintenance of this pathology (Siqueira et al., 2020).

Allied to this, body image is the perception that the being has of himself, since it is a set that encompasses the consciousness and social relations of the individual himself in an integral way (Francisco et al., 2019). This vision is associated with information, thoughts, feelings and actions related to the body, such as weight, muscularity, aging, appearance pressures or even comparisons with the other. Thus, although body perception is something complex and personal, many times, due to psychological disorders, image distortion can occur. And thus, body image displeasure is one of the risk behaviors for the evolution of EDs, which associates these two factors (Souza, Katibe & Dias, 2019; Mclean & Paxton, 2019).

The COVID-19 pandemic and the suspension of face-to-face classes and consequently the implementation of remote teaching, which despite being important, triggered greater discomfort and risk of developing pathologies, including those associated with food, inappropriate eating behavior around students susceptible to developing EDs (Silva & Rosa, 2021; Martins, 2018).

That said, Nursing undergraduates were subject to intense psycho-emotional changes, since with the pandemic scenario, many volunteered to provide support and care to those suspected or infected by COVID-19. In addition, studies indicate that such students tend to present, regardless of their nutritional status, risk behavior for the development of eating disorders and high concern for their body image (Franzoi & Cauduro, 2020; Mazzaia & Santos, 2018), since that generally, health students are in direct contact with fundamentals and discussions related to body care, being exposed to an environment of excessive information about health.

In addition, when dealing with health education remotely, they were susceptible to situations of stress and a feeling of low use of classes in the academic environment. This led to significant changes in eating behavior, risk of eating disorders and, consequently, body image dissatisfaction (Mazzaia & Santos, 2018; Baixinho & Ferreira, 2021). Therefore, it is important to develop integrated nutritional support actions to prevent both eating and psychological disorders in the face of changes in the usual academic routine (Oliveira et al., 2017; Padovani et al., 2014).

Because of the above, the objective of the present study was to observe the influence of remote teaching on the prevalence of the development of eating disorders associated with image distortion in nursing students during the COVID-19 pandemic.

2 METHODOLOGICAL PROCEDURES

2.1 STUDY CHARACTERISTICS

The present work was an observational, cross-sectional study with a quantitative basis on the influence of remote teaching on the prevalence of the development of eating disorders associated with image distortion of nursing students during the COVID-19 pandemic in a public educational institution., the University of Pernambuco, located in the municipality of Petrolina.

The research instruments were applied after approval by the Research Ethics Committee of the University of Pernambuco under Opinion number: 5,668,736, and signatures of the participants in the Term of Free and Informed Consent (TCLE) for voluntary participation in the study.

2.2 SAMPLE

The research took place with a maximum of volunteers who were regularly enrolled in the nursing course, aged 18 years or older, of both sexes, female and male, and who, perhaps, had experienced the remote teaching period during the COVID-19 pandemic. COVID-19. Thus, it comprised a total of 52 volunteers, taking into account that, to determine the prevalence of eating disorders in nursing students, it was appropriate to have at least a minimum sample size of 46 students for adequate results, according to the sample calculation performed.

Thus, the Survey System online software was used for sample calculation, based on the formula for a finite population, considering a prevalence of 18.4% of the occurrence of EDs in university students, with a confidence level of 95%, for an acceptable margin of error of 5%, with both plus and minus standard deviation. There was no refusal to participate.

2.3 OBSERVATIONAL APPROACH

Data collection was carried out by completing a structured questionnaire and applied in person in November 2022. The form contained instructions on how to answer each of the questions, being subdivided into: a sociodemographic questionnaire (Rocha et al., 2021), to collect information such as academic period, gender, income, race, mental aspects, self-reported weight and height, and student perception of the influence of the pandemic on their diet; an adapted questionnaire based on the Eating Disorder Examination Questionnaire (EDE-Q) instrument (Fairburn & Beglin, 1994) and a body image assessment test Silhouette Matching Task (STM) (Carvalho et al., 2020), to analyze the participant's perception of corporate.

The EDE-Q instrument was used to identify the key behaviors that are present in individuals with eating disorders for the last month. In this adapted version, the EDE-Q consists of 27 items evaluated on a Likert scale that can vary from 0 to 6 (Correia, 2021), classifying the AT into four

subscales related to dietary restriction; preoccupation with food intake; preoccupation with physical appearance and preoccupation with weight. Furthermore, some of the items present in the questionnaire are not related to the mentioned subscales but inform about key behaviors present in an individual with an eating disorder. The score for each subscale is global and provides an average of the degree of severity of the eating disorder whenever equal to or above 4.

Another instrument used was the SMT, which aims to assess the degree of image perception and/or satisfaction of the individual with their body shape. It consists of a scale with nine figures of silhouettes that vary from the figure corresponding to extreme thinness (n° 1) to obesity (n° 9) in which, the subject is oriented to choose one of the silhouettes that most correspond to his current body shape and another one that refers to the desired silhouette. Thus, an analysis of the result is made by the difference between the image they perceive as their current one and the one they would like to have, in which when the difference results in a negative value it is indicative of an “underweight” perception, while when it reflects a positive number indicates “overweight” (Carvalho et al., 2020).

2.4 DATA ANALYSIS

For tabulation of results, databases were created in Microsoft Office Excel 2016 and BioEstat software version 5.0 for descriptive analysis of data, to verify frequencies, as well as means and standard deviation related to the prevalence of each behavioral data exposed by the studied population through the chosen research instruments. For analysis and comparison between groups, OddsRatio (OR) and Confidence Interval (CI) 95% were calculated.

3 RESULTS AND DISCUSSION

52 nursing students who had experienced remote teaching participated in this research voluntarily, with an average age of participants of 21 years, ranging from 19 to 31 years. It is possible to observe, in Table 1, the main sociodemographic characteristics of the evaluated university students.

Table 1: Main sociodemographic characteristics of UPE nursing students, 2023.

Variable	n ^o	(%)
Gender		
Female	45	86,5
Male	7	13,5
Race/color		
White	22	42,3
Black	05	9,6
Brown	23	44,2
Yellow	2	3,8
Family income		
700-1200	12	23
1600-2600	20	38,4
3000-4500	09	17,3
5200-9200	11	21,1

Source: Research authors, 2023.

A higher percentage of female students can be seen in the analyzed group, since the student population, especially in nursing courses, is mostly made up of women (Fonseca et al., 2019). And, according to data from the Federal Nursing Council (COFEN), 85% of women make up the nursing workforce in Brazil (COFEN, 2023), since historically it is an area occupied mostly by this gender, and currently there is still a trend of feminization of nurses (Macedo, 2019).

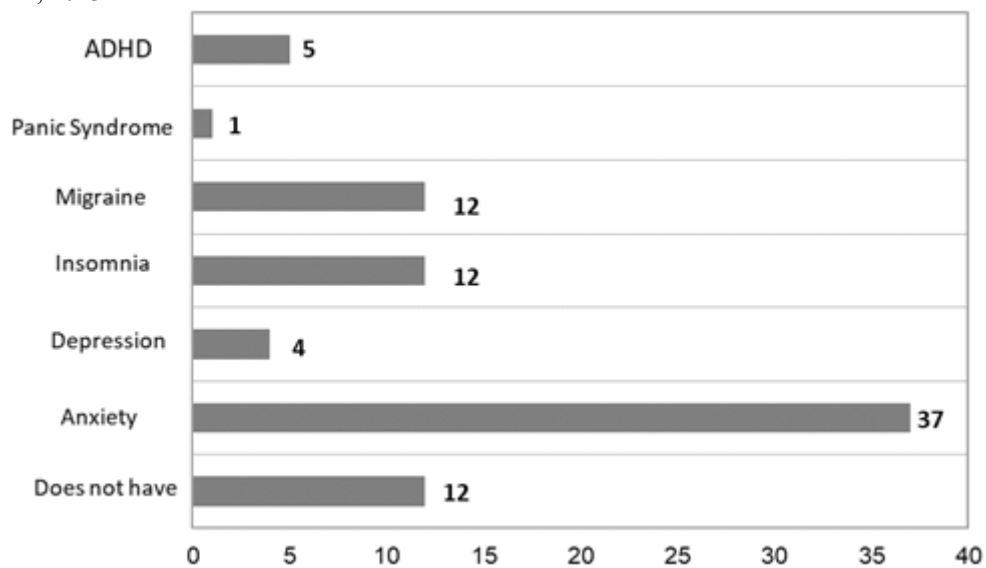
Allied with this, still in a study carried out by Macedo (2019) at a Brazilian university with 707 students, it was found that among the students, the largest group of students who were enrolled, attended the nursing course and were female, a finding similar to the present study.

It is also verified that, about the economic class, about 61.5% (n=32) of the participants belong to the lower middle class, since the family income is up to R\$2,900.00 (IBGE, 2022), and 53.8% (n=28) report being black or brown, which confirms that higher education is an important promoter of social inclusion, expansion of opportunities and access to education for different social groups (Macedo, 2019).

Still in the first instrument, two questions were asked about the health of the students to help outline a profile of these individuals, namely: “Do you believe that the pandemic affected your diet?” and “Do you have any of these illnesses or symptoms related to mental aspects?”. It was also advised that the symptomatology was stated by the participant according to a proven medical diagnosis.

Regarding the first question, 92% (n=48) of the students indicated that they believed that the pandemic had affected their diet, while 8% (n=4) stated that the COVID-19 outbreak had no impact on their eating habits. Using the second question, Graph 1 can be created, in which the occurrence of mental illnesses or symptoms self-reported by students is observed.

Graph 1 – Distribution of the number of nursing students who self-reported having one or more symptoms related to mental aspects, Petrolina, 2023.



Source: research authors. ADHD = attention deficit hyperactivity disorder.

Given this, it appears that among nursing students, 77% (n=40) of the sample reported having one or more symptoms related to mental aspects. Noting that the pandemic generated significant impacts on the physical and mental health of individuals, which can cause feelings of fear, anxiety, uncertainty and concern (Verticchio et al., 2020). Allied to this, it is known that the mind can directly influence the usual diet by regulating serotonin concentrations, generating comfort and acting as a way to treat the stress experienced (Totorra & Derrickson, 2012).

With, another fact observed is that the tension and social isolation due to COVID-19 directly influenced the food consumption of students, since they are susceptible to acquiring irregular eating habits (Souza et al., 2021).

In a study by Oliveira (2021), for example, carried out with 407 students from a university center in the city of Teresópolis - RJ, it was demonstrated that there was more time spent on screens, due to the implementation of the remote teaching model, and also had an increase in consumption of ultra-processed foods and a decrease in the intake of minimally processed and/or in natural foods. It is possible to note that, during this pandemic period, there was a tendency for changes in the eating behavior of university students, as observed in this study, since students also experienced remote teaching and reported changes in their usual diet during the pandemic period.

Thus, from Table 2, it is possible to see the characteristics regarding the age and BMI variables of the studied population, with the values that were obtained from the database. Being analyzed a homogeneity of the sample regarding the BMI of thinness and a greater variety of data regarding the nutritional status of overweight.

Table 2: Characterization of UPE nursing students regarding age and BMI, Petrolina, 2023.

Variables	Average	DP	Min.	Max.	Amplitude	Variance	Coef. of variance
Age	21	2,8	19	31	12	8,2	13,7
BMI Thinness	17,3	1,2	15,4	17,7	2,3	1	7,1
BMI Eutrophy	22	1,6	19,3	24,4	5,1	2,5	7,3
BMI Overweight	30,9	4,8	25,3	40	14,7	22,3	15,7

Source: Research authors, 2023. BMI = Body Mass Index

Thus, regarding nutritional status, it was observed that 38% (n=20) of students were overweight. Allied with this, the changes in eating habits experienced during the pandemic period and the greater tendency towards sedentary behavior in the face of academic demands, also associated with prolonged sitting, can directly affect unhealthy food choices, and thus, the increase of physical inactivity and caloric intake can contribute to changes in the lipid profile of students (Cruz-Sánchez et al., 2016).

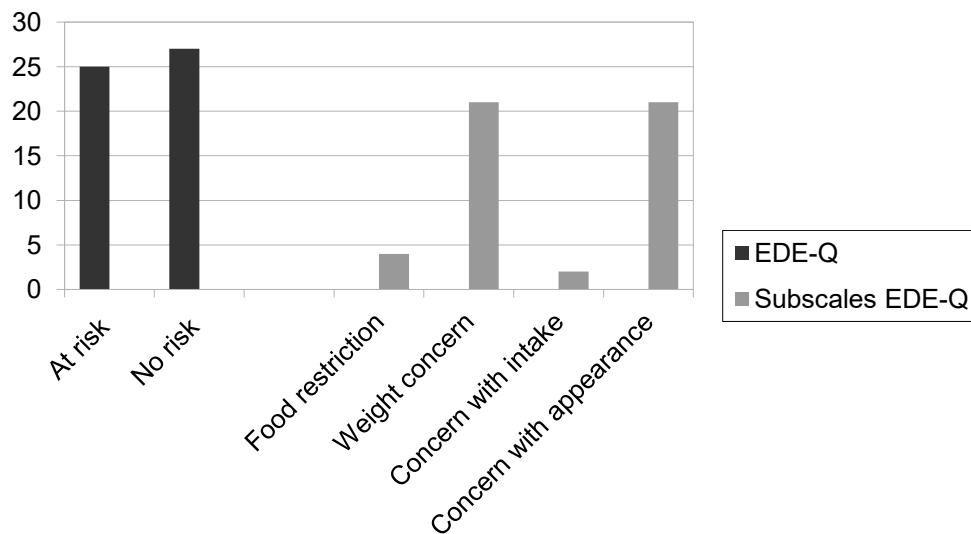
A similar finding was found by Macedo et al (2019) in their study, which found that nursing students at a university in Salvador - BA, stood out with 29.06% being overweight, mainly due to the low level of exercise physical activity and high sitting time, which makes it necessary to encourage a healthy lifestyle in academic education (Macedo et al., 2019).

In this way, it is also possible to observe through Graph 2 with the EDE-Q, in which 48% (n=25) of the sample presented a score greater than or equal to parameter 4, which is indicative of the presence of risk for the development of TA (Fairburn & Beglin, 1994).

Since studies have already shown that students in the health area are more susceptible to developing ED risks, since most courses in this area tend to suffer from social pressures, concerning healthy habits and good body appearance linked to the concept of health, and this type of present concern can directly influence changes in eating behavior (Barboza et al., 2022).

Mazzaia et al. (2018) observed in their study that 25% of the 120 nursing students analyzed, even with eutrophy, were at risk for developing ED with the presence of changes in eating behavior, which may be a factor that encourages a feeling of belonging in students. body dissatisfaction (Mazzaia & Santos, 2018). Furthermore, it is still possible to observe in Table 3 the percentage of students who presented some type of key behavior that indicates the presence of ED, according to the EDE-Q.

Graph 2: percentage distribution of students who tested positive for the subscales according to the ede-q, petrolina, 2023.



Source: Research authors, 2023. EDE-Q= Eating Disorder Examination Questionnaire.

Table 3: Distribution of students who showed one or more key ED behaviors after remote teaching, Petrolina, 2023. (n=25)

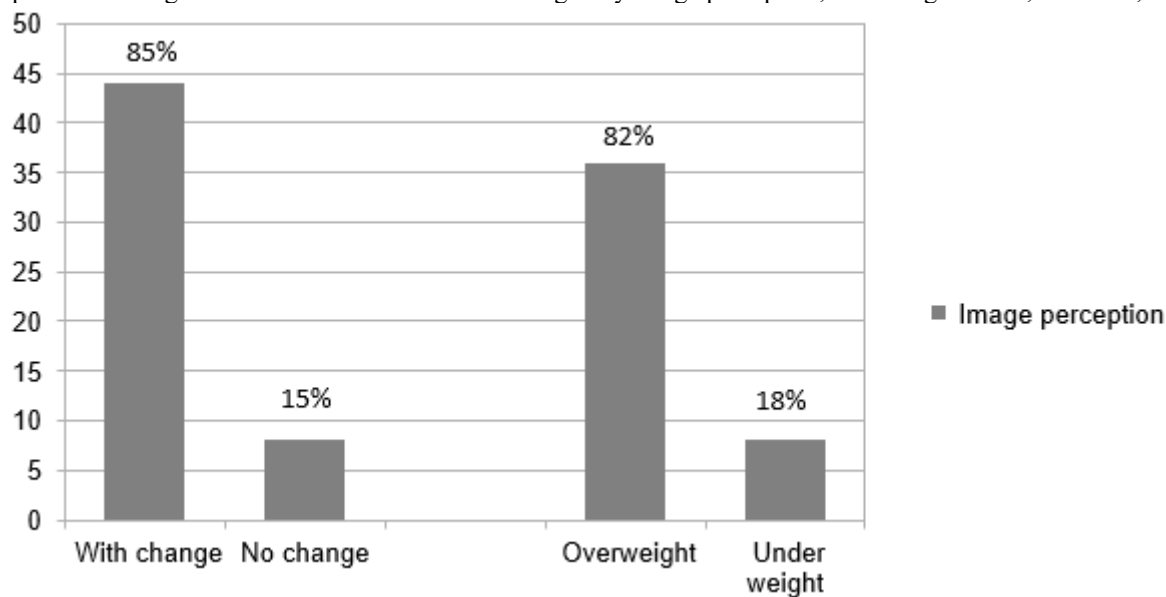
Key behavior	n°	%
Lost control of power	23	92
Felt guilty when eating	21	84
Vomited as a way to control weight and appearance	2	8
Excessive physical exercise as a means of controlling weight and appearance	15	60
Made use of laxatives as a way to control weight and appearance	4	16
ate excessively	21	84

Source: Research authors, 2023. TA: Eating Disorder.

About the SMT instrument, it was observed that 85% (n=44) had an alteration in the image perception for both "overweight" and "underweight", while 15% (n=8) did not present distortion of self-image. Also analyzing that among those who are dissatisfied, 82% report seeing themselves as "overweight" and 18% as "underweight", as shown in Graph 3. This reflects that, in this study, most of the student from nurses were dissatisfied with their body appearance. Similar to the study by Maniglia et al (2021), which found that 80% of nursing students were unhappy with their physical body appearance.

Thus, it is noted that the feeling of body satisfaction is not only related to having a body within the personal standard desire but also to the pleasure of feeling good with the body aesthetics obtained (Maniglia et al., 2021). However, the cult of the perfect body can silently promote image distortion by treating the body as a desired commodity, which puts individual characteristics in the background (Silva, 2018).

Graph 3: Percentage distribution of students concerning body image perception, according to SMT, Petrolina, 2023.



Source: Research authors, 2023. SMT = Silhouette Matching Task or Body Image Assessment Test.

Thus, when associating self-image dissatisfaction with the students' nutritional status, as can be seen in Table 4, it appears that 67% of thin students demonstrate body dissatisfaction, while 33% are satisfied. To eutrophic students, it was analyzed that 82.7% of the sample said they were dissatisfied, while 17.2% did not present body dissatisfaction. So, among overweight students, 85% are unhappy with their body appearance, and 15% say they are satisfied.

The data reveal that the highest percentage of students who are dissatisfied with their body appearance are overweight, although the largest number of students are in a eutrophic state. A similar finding was found by Silva et al (2019), who, when using the same STM instrument, and when analyzing the prevalence of body dissatisfaction in 348 university students, found that it was also higher in overweight students, when compared to those with eutrophy according to the BMI, in addition, also found that in women, the chances of occurrence of dissatisfaction due to overweight were 12.5 times higher when compared to those with EN of eutrophy (Silva et al., 2019).

Thus, based on the results obtained in the OddsRatio calculation, it is also possible to observe, in Table 4, that nursing students with obesity were 15.2 times more likely to develop EDs when compared to eutrophic students, according to EDE-Q.

According to the SMT, the sample of overweight university students is more likely to present changes in image perception than eutrophic students. This reveals that in both studies, the prevalence of dissatisfaction was present in more than half of the percentage of students, which may be related to nutritional status. Since the desire for a so-called perfect body can help in the implantation of image disorders, in which the factor that is most associated with this fact is the nutritional status of the

individual, and in addition, according to the studies, a higher prevalence in overweight people (Alcantara-Silva et al., 2021).

Table 4: Distribution of the number and percentage of students who were at risk for developing ED and altering their body image associated with nutritional status, Petrolina, 2023.

Instrument	Nutritional status			
	Thinness n° (%)	Eutrophy n° (%)	Overweight n° (%)	Obesity n° (%)
EDE-Q				
At risk	1 (33)	10 (34,4)	6 (54,5)	8 (88,9)
No risk	2 (67)	19 (65,5)	5 (45,4)	1 (11,1)
OR (95% IC)	0,63 (0,06-6,91)	1,00	2,28 (0,55-9,36)	15,2 (1,65-139,31)
SMT				
With the alteration of image perception	2 (67)	24 (82,7))	9 (81,9)	8 (88,9)
No change in image perception	1 (33)	5 (17,2)	2 (18,1)	1 (11,1)
OR (95% IC)	0,42 (0,03-5,53)	1,00	0,93 (0,15-5,72)	1,66 (0,17-16,48)

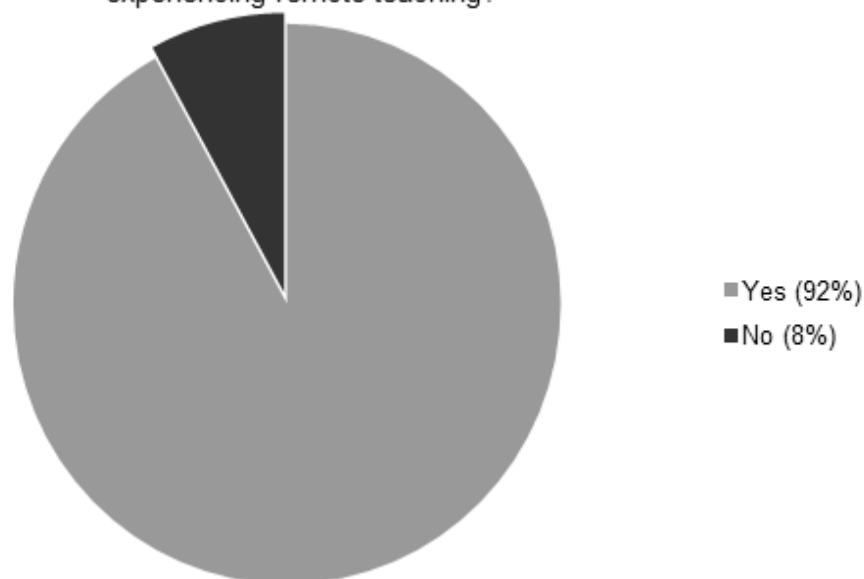
Source: Research authors, 2023. EDE-Q= Eating Disorder Examination Questionnaire, SMT= Silhouette Matching Task or Body Image Assessment Test.

Thus, from the data obtained, it is analyzed that 52% of university students do not have any risk factor for the development of ED, since they did not classify positively for EDE-Q. However, in Graph 4, it is possible to see that among the 48% who are at risk, when asked, 92% claim that there was an increase in the frequency of key behaviors for the presence of ED after experiencing remote teaching, while 9% reported not perceive changes in the frequency of episodes after the teaching model implemented during the COVID-19 pandemic.

This is a strong indication that the implementation of remote teaching influenced the eating behavior of these students. Since nursing undergraduates tend to present, regardless of their nutritional status, risk behavior for the development of eating disorders and high concern for their body image (Franzoi & Cauduro, 2020; Mazzaia & Santos, 2018). And besides, it is verified from the descriptive analysis of this study, that the data collaborate for this affirmation.

Graph 4: Percentage of responses from nursing students regarding the increase in the frequency of key AT behaviors after experiencing remote teaching, Petrolina, 2023.

Do you believe that the frequency of these behaviors increased after experiencing remote teaching?



Source: Research authors, 2023.

It is worth noting that the present study had some limitations, such as the use of BMI calculated from the height and weight values reported by the participants, since the reporting of these measurements may be underestimated or/and overestimated, in addition, it was not evaluated. the students' body composition to establish a more accurate diagnosis with analysis of adipose tissue and muscle mass. Since the dynamics implemented for data collection and the limited availability of time for university students did not allow for precise anthropometric measurement. Furthermore, despite the importance of the results obtained, this study was limited to a single institution, not encompassing the entire portion of nursing students who may have experienced remote teaching.

4 FINAL CONSIDERATIONS

From the applied cross-sectional observational study, it was possible to consider the relationship between the development of risk of EDs and body dissatisfaction in the period of the COVID-19 pandemic associated with the experience in the remote teaching modality by nursing students. In addition, a profile of university students with a prevalence of females, brown race, and lower middle class was verified. It is observed that there was a change in the eating behavior of the participants during the evidenced period, which is strongly associated with the lifestyle adopted due to the high academic demand and the stress witnessed.

Thus, it is noticeable that the pandemic and the measures adopted, such as the implementation of remote teaching, had a strong influence on aspects related to eating behavior in nursing students, bringing about changes in eating habits and an increase in the frequency of key ED behaviors in most

of the students. students. In addition, it was possible to analyze that most students had body image dissatisfaction. In which the difficulties faced, given the context presented, can directly reflect on the negative effects on food and lifestyle.

Thus, it is important that, when implementing changes in the academic routine, institutions act towards preventive and careful planning with biopsychosocial assistance associated with health care, aimed at eating and psychological disorders. Still, counting on the help of qualified professionals who can pass on knowledge and guidance on proper eating behavior.

Furthermore, more studies are needed to be related to the main causes of eating disorders and body dissatisfaction and with factors that address the issue of the development of eating disorders to demystify the concepts that involve physical and mental well-being in the face of stressful situations. It is suggested, therefore, that this study can positively assist in future research associated with this topic.

REFERENCES

- Baixinho, c.l.; ferreira, o.r. Ser estudante de enfermagem em tempos de covid-19. Revista de enfermagem, lisboa, v.25, [s.n.p.], 2021.
- Barboza, v. A. Et al., avaliação do risco de desenvolvimento de transtornos alimentares em estudantes de nutrição de uma instituição de ensino superior de cachoeirinha. Anais da xvi mostra de iniciação científica do cesuca. [s.v], n.16, p.674-682, rio grande do sul, 2022.
- Barreto, a. C. F.; rocha, d. S. Covid 19 e educação: resistências, desafios e (im)possibilidades. Revista encantar. V. 2, [s.n.], p. 01-11, 2020.
- Brasil, ministério da saúde. Painel coronavírus [internet]. Brasília: ministério da saúde; 2020 [citado 2023 março 16]. Disponível em: <https://covid.saude.gov.br/>
- Carvalho, g. X. De et al., insatisfação com a imagem corporal e fatores associados em adolescentes. Revista ciência & saúde coletiva. V. 25, n. 7, p. 2769- 2782, 2020.
- Conselho federal de enfermagem. Perfil da enfermagem no brasil. Brasília, 2021. Disponível em: <<http://www.cofen.gov.br>> acesso em: 13 de mar. 2023.
- Correia, m. I. S. Validação do eating disorder examination questionnaire (ede-q) para a população bariátrica portuguesa. Universidade de minho, braga, 2021
- Cruz-sánchez e. Et al., factores de riesgo cardiovascular en estudiantes de enfermería de una universidad pública. Enfermería universitaria. V.13, n.4, p.226-232, ciudad de méxico, 2016.
- Ele, f.; deng, y. Li, w. Coronavirus doença 2019: o que sabemos? Journal of medical virology. V.92, [s.n.], p. 719- 725, 2020.
- Fairburn, c.; beglin, s. Assessment of eating disorders: interview or selfreport questionnaire? International journal of eating disorders, v. 16, [s.n.], p. 363-370, 1994.
- Fernández-aranda, f. Et al., "covid-19 e implicações para distúrbios alimentares". Revisão de transtornos alimentares europeus: a revista da associação 19 de transtornos alimentares. V. 28, n.3, p. 239-245, 2020.
- Fonseca, r. S. Et al. O perfil sociodemográfico dos estudantes universitários: estudo descritivo - correlacional entre uma universidade portuguesa e brasileira. Revista educação em foco, minas gerais, v. 23, n.1, p. 341–366, 2019.
- Francisco, t. R. Et al., distorção de imagem em universitários. Revista universitária umc, v.4, n.3, [s.p.], 2019.
- Franzoi, m. A. H.; cauduro, f. L. F. Atuação de estudantes de enfermagem 17 na pandemia de covid-19. Revista cogitare enfermagem. V. 25, [s.n.], p. 2176- 9733 2020.
- Freitas, a. R. R.; napimoga, m.; donalisio, m. R. Assessing the severity of covid-19. Journal epidemiology and health services. V. 29, n. 2, e2020119, 2020.

Ibge - instituto brasileiro de geografia e estatística. Censo brasileiro de 2022. Rio de janeiro: ibge, 2022.

Macedo, r. M. Resistência e resignação: narrativas de gênero na escolha por enfermagem e pedagogia. Revista cadernos de pesquisa. V. 49, n. 172, p. 54-76, são paulo, 2019.

Macedo t. T. Et al., perfil alimentar, clínico e padrão de atividade física em ingressantes universitários de enfermagem. Revista cubana de enfermería. V. 35, n. 1, [s.p.], 2019.

Magalhães, r. C. S. Pandemia de covid-19, ensino remoto e a potencialização das desigualdades educacionais. Revista de história, ciências, saúde – manguinhos. V. 28, n. 4, p. 1263-1267, 2021.

Maniglia, f. P. Et al., avaliação da percepção e satisfação da imagem corporal de estudantes de enfermagem. Revista brasileira de obesidade, nutrição e emagrecimento, são paulo. V.15, n.95, p. 653-658, são paulo, 2021.

Martins, i. P. Frequência de comportamentos de risco para transtornos alimentares entre universitários. Trabalho de conclusão de curso, graduação em nutrição. Universidade federal de mato grosso, cuiabá, 2018.

Mazzaia m.c.; santos r.m. Fatores de risco para transtornos alimentares em graduandos de enfermagem. Acta paulista de enfermagem. V.31, n.5, p.456- 62, 2018.

Mclean, s. A.; paxton, s. J. Body image in the context of eating disorders. Psychiatric clinics of north america, v. 42, n. 1, p. 145–156, 2019.

Oliveira, m. F. C. Et al., prevalência de obesidade em adolescentes e jovens. Revista brasileira de obesidade, nutrição e emagrecimento. V. 14, n. 88, p. 811- 820, 2021.

Oliveira, n. Avaliação das mudanças no estilo de vida e consumo de alimentos de universitários durante a pandemia de covid-19. Revista da jornada de pesquisa e iniciação científica. V.7, n.11, p.132-143, rio de janeiro, 2021.

Oliveira, p. L. Et al. Insatisfação, checagem corporal e comportamentos de risco para transtornos alimentares em estudantes de cursos da saúde. Jornal brasileiro de psiquiatria. V. 66, n. 4, p. 216-220, 2017.

Padovani, r. C. Et al., vulnerabilidade e bem-estar psicológicos do estudante universitário. Revista brasileira de terapia cognitiva. V.10, n.1, p. 02-10, 2014.

Rocha, g.s. Et al., comportamento alimentar durante a pandemia. Universidade federal fluminense, rio de janeiro, 2021.

Rondini, c. A.; pedro, k. M.; duarte, c. Dos s. Pandemia do covid-19 e o ensino remoto emergencial: mudanças na práxis docente. Educação, editora universitária tiradentes. V. 10, n. 1, p. 41–57, 2020.

Santana, m. L. P. Et al., aspectos metodológicos e desafios da coorte online sobre comportamento alimentar e saúde mental de professores universitários e estudantes durante a pandemia covid-19. Revista pesquisa, sociedade e desenvolvimento. V. 10, n. 17, p.1 - 2, 2021.

Silva, I. P. R. Dá et al., insatisfação da imagem corporal e fatores associados: um estudo em jovens estudantes universitário. Instituto israelita de ensino e pesquisa albert einstein. V.17, n. 4, p. 1-7, são paulo, 2019.

Silva, g. L. Da. Influência da mídia sobre o comportamento alimentar e imagem corporal em universitários. Trabalho de conclusão de curso, graduação em nutrição. Universidade federal de pernambuco, vitória de santo antão, 2018.

Silva, s. M.; rosa, a. R. O impacto da covid-19 na saúde mental dos estudantes e o papel das instituições de ensino como fator de promoção e proteção. Revista práxis. V. 2, [s.n], p. 189–206, 2021.

Siqueira, a. B. R. Et al., confluências das relações familiares e transtornos alimentares: revisão integrativa da literatura. Departamento de psicologia da pontificia universidade católica do rio de janeiro, v. 32, n. 1, p. 123-149, 2020.

Souza, d. F. Et al., o impacto do confinamento domiciliar covid 19 no comportamento alimentar: uma revisão integrativa. Brazilian journal of development. Sergipe. V.7, n. 8, p.75807 -75819, 2021.

Souza, I. R. C.; katibe, n.; dias, d. A. M. A ocorrência de transtornos alimentares e distorção de imagem corporal em acadêmicos do curso de nutrição de uma faculdade particular de Brasília. Faculdade de ciências da educação e saúde, Brasília, 2019.

Sunde, r. M. Impactos da pandemia da covid-19 na saúde mental dos estudantes universitários. Revista programa de pós-graduação mestrado profissional em psicologia da universidade de santa Cruz do sul. V. 5, n. 2, p. 33- 46, 2021.

Timerman, f. Transtornos alimentares. Senac, são paulo, 2021.

Tortora g.j., derrickson b. Corpo humano: fundamentos de anatomia e fisiologia. 8ª ed. Porto alegre: artmed; 2012.

Ventura, d. F. L.; aith, f. M. A.; rached, d. H. A emergência do novo Coronavírus e a “lei de quarentena” no Brasil. Revista direito e práxis. V. 12, n. 01, p. 102-138, 2021.

Verticchio, d. F. Dos r.; verticchio, n. De m. Os impactos do isolamento social sobre as mudanças no comportamento alimentar e ganho de peso durante a pandemia do covid-19 em belo horizonte e região metropolitana, estado de minas gerais, Brasil. Journal research, society and development. V. 9, n. 9, p. E460997206, 2020.