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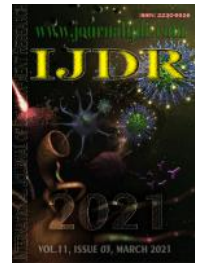
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REVIEW ARTICLE

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## PERCEPTIONS ON THE RELATIONSHIP BETWEEN OBESITY AND COVID-19

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### ABSTRACT

Obesity is one of the risk factors for Covid-19. However, long before the pandemic, this was already considered a public health problem. In Brazil there are more than 20 million obese individuals, with 56% of the population being overweight. The rapid growth in the number of cases has also been of concern to public health authorities. With the isolation due to the covid-19 pandemic the population was faced with uncertainties bringing anxiety and consequently bad habits that favor weight gain. Thus, it is important to assess people's perception of obesity as a risk factor for covid-19. After the application of a form (opinion poll) it can be seen that there are still people who are unaware of this relationship, including the care with covid-19. Thus, our results suggest that more accurate strategies should be developed for effective health promotion.

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## INTRODUCTION

According to the Ministry of Health (BRASIL, 2020), Covid-19 is a disease caused by the transmission of a new coronavirus, SARS-CoV-2, first identified in the city of Wuhan, China, in December 2019. This disease can manifest asymptotically or with few symptoms to severe conditions, with occurrences such as cough, fever, runny nose, sore throat, difficulty breathing, loss of smell and altered taste, tiredness, gastrointestinal disorders and decreased appetite they are among those commonly presented in cases of people infected by the virus (BRASIL, 2020). The virus that causes the disease can spread through direct, indirect or close contact with infected people, and the contagion occurs through secretions such as saliva and respiratory secretions, where individuals who are in close contact can also be infected when such

secretions come into contact with mucous membranes in the eyes, nose and mouth (BRASIL, 2020). Elderly people with cardiovascular diseases such as hypertension, heart disease and stroke, as well as cancer, diabetes and chronic respiratory diseases are among the risk group and may develop more severe cases of Covid-19, according to the Pan American Health Organization (PAHO, 2020). As Almeida (et al. 2020), initial observations regarding the emergence of Covid-19, determined that the presence of some diseases, such as those already mentioned, could be included as risk factors due to their natural severity, but with a significant worsening from of the virus infection, obesity being one of them, because it is related to the complications caused by the contagion by the virus that causes Covid, being more present in the deaths of young people than of the elderly. According to the World Health Organization (WHO), obesity is the excess of body fat

that can bring detriment to health, and the method used for its assessment and classification is BMI, body mass index, where a relationship is made between the subject's height and weight (SAÚDE BRASIL, 2020). In its most severe phase, obesity is defined by a BMI of 40kg / m<sup>2</sup>, which worries specialists, as it is seen that excess abdominal fat harms the lungs and hinders them from expanding correctly, being a strong aggravating factor. In the health of patients diagnosed with SARS-Cov-2 (SUCENA, 2020). According to information from the World Health Organization (WHO), this comorbidity is now considered a public health problem of a worldwide epidemic level that affects both developing and developed countries. According to the Brazilian Association for the Study of Obesity and Metabolic Syndrome (ABESO), it is believed that by 2025 there will be approximately 2.3 billion overweight people and 700 million obese people with a BMI above 30kg / m<sup>2</sup>. Simonet (et al. 2020) mentioned by Almeida (et al. 2020) points out the predominance of obese patients who needed to undergo mechanical ventilation.

The patients' BMI were analyzed; therefore, those who had more than 35 kg / m<sup>2</sup> needed this mechanical intervention to aid breathing. Due to the action of the coronavirus, the exchange areas are reduced, causing it to have a greater magnitude. thus impairing pulmonary hematosis. In addition, abdominal adiposity, by means of the diaphragm, represses the movements of the muscles of the respiratory system, causing less oxygen saturation. In view of this, obese patients have low lung volume, which worsens their clinical case (ALMEIDA et al., 2020). In addition, Almeida (et al. 2020) argues that obese patients who are infected with the new corona virus acquire immune defense that is related to inflammatory processes, normally occurring in a controlled way so that the host organism of the virus does not become harm. However, in some cases, there is an uncontrolled process called a cytokine storm that causes tissue damage and changes several organic functions, especially the respiratory areas. In this sense, it is important to assess people's perception of obesity as a risk factor for Covid-19. According to data from the Pan American Health Organization (PAHO, 2020), 60,534,526 cases of Covid-19 were confirmed worldwide and a total of 1,426,101 deaths until November 27, 2020, where such numbers increase with each passing day. Thus, this study aimed to verify the population's perception of the relationship of obesity as a risk factor for Covid-19 through a form via opinion poll.

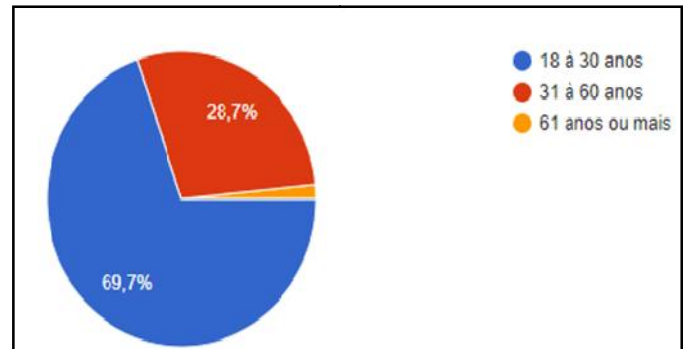
## MATERIALS AND METHODS

As part of the data collection activities for the discipline: Project Integrator of health courses at Santo Agostinho College in Montes Claros-MG, under the guidance of professor Daniela Fernanda de Freiras, a questionnaire was used using the "Google Form" tool (<https://docs.google.com/forms/u/1/?tgif=d>). For this, each course participating in the Integrator Project (Nursing, Pharmacy, Physiotherapy and Psychology) proposed ten questions each, totaling 40 questions that were assessed jointly with the whole class for data collection. Of these 40 questions, 14 questions (open and closed) were selected to contemplate the form in order to assess people's perception of obesity as a risk factor for Covid-19 (Annex 1). After the form was drafted, it was released as a link to be answered confidentially. 184 responses were obtained and subsequently analyzed.

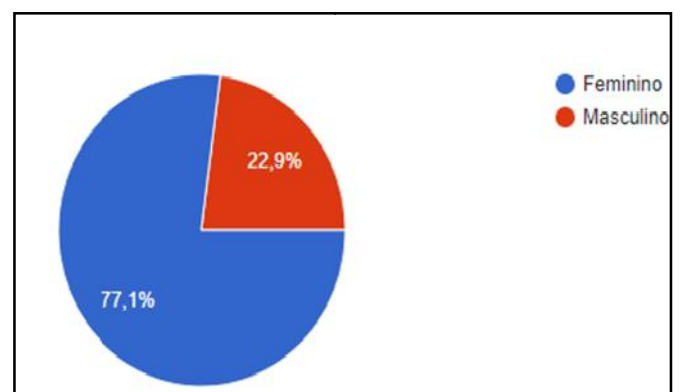
## RESULTS AND DISCUSSION

The form consisted of 14 questions, 10 of which were closed questions and 4 were open questions in order to assess participants' perception of the relationship between obesity as a risk factor for covid-19.

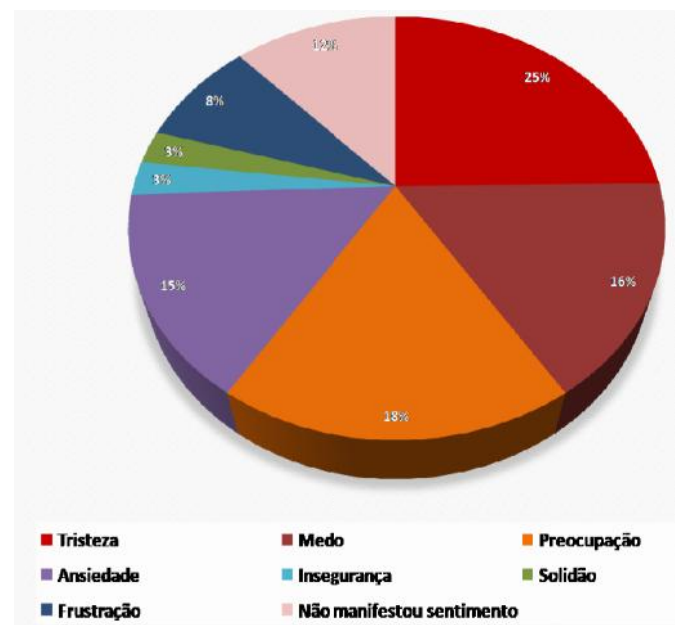
### Age range of participants



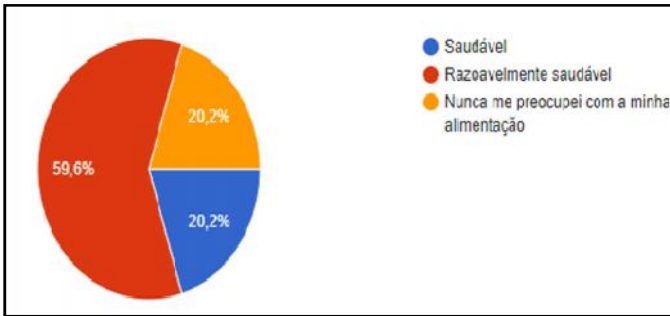
### Gender of participants



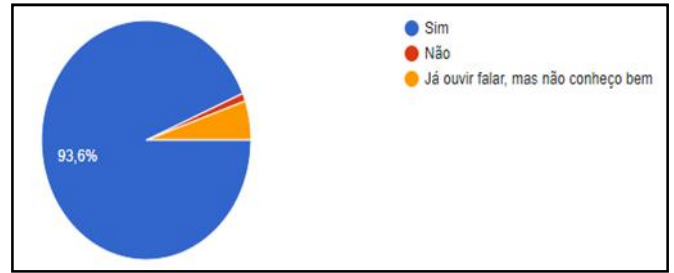
### What was your feeling when we had to "go into isolation"?



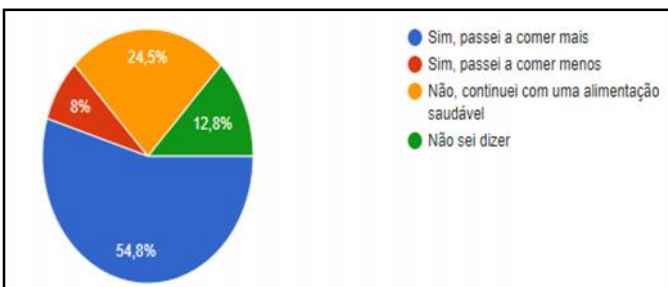
**Way to eat before the pandemic**



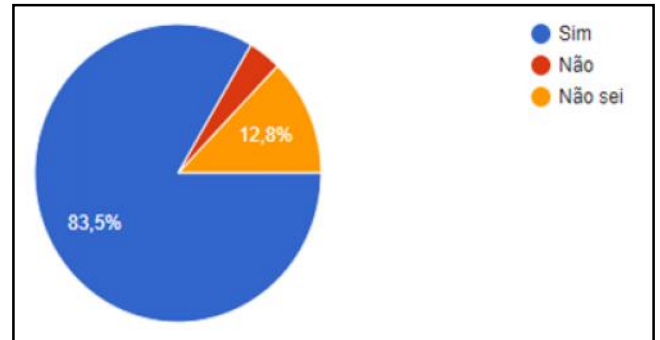
**You know Coronavirus disease, also known as Covid-19?**



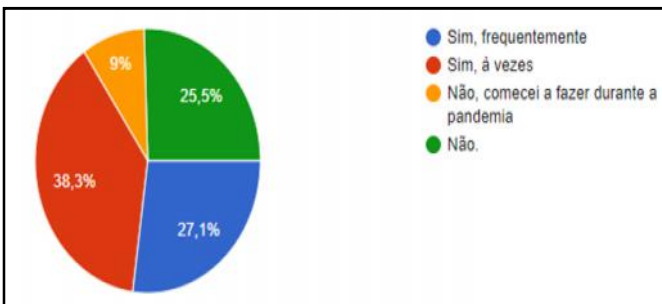
**Change in feeding routine in the pandemic**



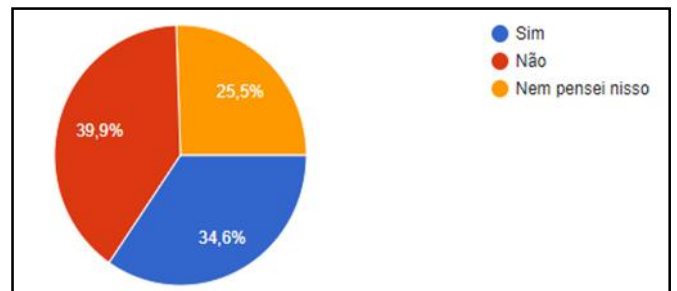
**Do you think the overweight person is more at risk with the coronavirus?**



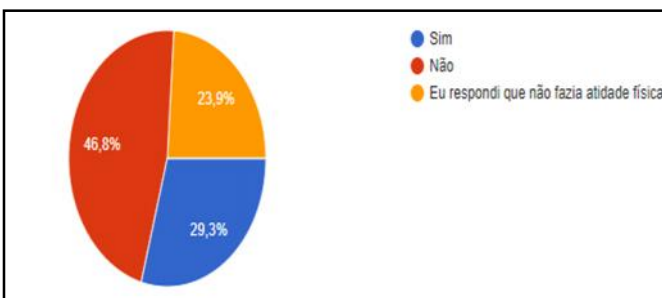
**Physical activity before the pandemic**



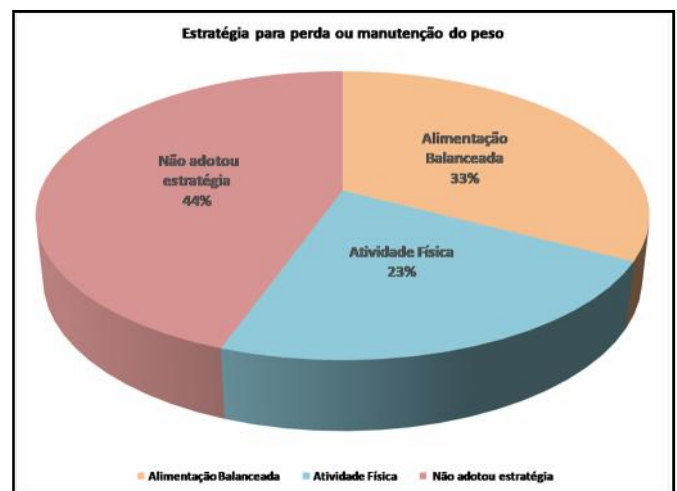
**Have you acquired a strategy for not gaining weight or for losing weight during the pandemic?**



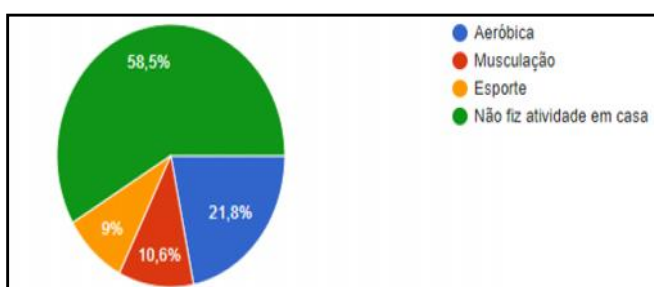
**Continued physical activity at home during the pandemic**



**If so. What was your strategy for weight loss or maintenance?**



**What physical activity were you able to do at home**



After applying the forms, 184 responses were obtained. The interviewees' average height and weight were 1.63 cm and 71.08 kg, respectively. For the item "strategy for weight loss or maintenance, 44% of respondents did not take measures or did anything to control BMI during the installation and as a

result of COVID - 19, which can be justified by the various fake news disseminated at the beginning of pandemic and adverse sensations acquired during isolation. As for the practice of physical activities, 23% of the individuals reported that they are adepts and that they continued exercising at home, attending gyms and practicing running and / or walking. Regarding weight stability through the adoption of a balanced diet, 33% adopted healthy habits and began to nourish themselves better, making more use of organic and whole products. Of the 184 people who responded to the survey, we see a predominance of 70.7% of people aged between 18 to 30 years, while 27.7% are people aged 31 to 60 years, while only 1.6 are over 60 years old, while 77.2% were women and 22.8% were men, with an average height of 1.63 and an average weight of 71.08. When addressing what food was like before the pandemic, more than half of the participants (59.8%) said it was reasonable or healthy, followed by 20.7% of people who responded to eating healthy, and 19.6% who never cared about their food. However, when asked if they noticed a change in the dietary routine in the pandemic, about 54.9% of people said they started to eat more, compared to just 24.5% who said they continued with a healthy diet, 12.5% did not know how to answer, while only 8.1% decreased the amount of food eaten. These results show us a possible picture of binge eating disorder (BED), characteristic of the abnormality of excessive food intake in short periods of time and, consequently, loss of control of food intake. It is known that being overweight or obese can cause various morbidities to humans, according to Del-Campo L.R.L. and Del-Ciampo L.A.

“Estimates show that overweight and obesity contribute annually to around 4 million deaths worldwide (7.1% of the total deaths) 9. In addition to the recognized related comorbidities, such as diabetes, high blood pressure and other cardiovascular diseases; obesity also leads to a reduction in total lung capacity (decreased functional residual capacity, expiratory residual volume), increased bronchial responsiveness (due to the loss of the bronchoprotective effect of deep inspiration) 10, decreased diaphragm incursion and elevated inflammatory cytokines<sup>11</sup>, making the respiratory system highly vulnerable to attack by viruses.” (Del-Ciampo, L.R.L. and Del-Ciampo, L.A. 2020, p. 2). The authors also point out that being overweight is related to the reduction of the immune response for some pathogens. Thus for the proper balance of bodily health, good nutrition is necessary, seeking adequate nutrition that increases the body's immunological efficacy, in order to be able to combat various diseases, such as Covid-19. Regarding the feelings when social isolation started, 12% of the participants did not report the feeling they manifested, but most of the participants (25%) mentioned feeling sad, followed by worry (18%), fear (16%), anxiety (15%), frustration (8%), insecurity and loneliness (3%). The question that remains is: what is the relationship of these feelings in the BED process?

Sarubbi (2003) reports that people with BED have some degree of difficulty in identifying what their physiological needs (hunger) are, in fact, their emotional needs, and thus, there is no genuine satiety in eating food, but a “escape valve” for their emotional differences and feelings of reduction of their anxieties. It was possible to notice that some participants were unaware that individuals with obesity have greater complications when infected with COVID-19, which may worsen the disease as they have a higher risk of developing

infections and also dying. Thus, the results of our study suggest the need for new information strategies for the population on the relationship between obesity and covid-19. Thus, it is important to actively promote health by health professionals.

## FINAL CONSIDERATIONS

It was observed that the majority of participants who answered the form had knowledge about the relationship of obesity as a risk factor for covid-19 and a small minority of participants were unaware of this relationship. It is important to highlight that health promotion consists of public health policies, plans and programs with actions aimed at preventing people from being exposed to conditioning factors and determinants of diseases, such as health education programs that aim to teach the population to take care of your health. Thus, there is a need for strategies that have a wider reach for the entire population.

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## ANNEX 1

## "De olho no peso durante o isolamento" - Uma pesquisa de opinião .

Esta é uma pesquisa de opinião voluntária e anônima.

Você está sendo convidado (a) a responder as questões da nossa pesquisa de opinião. Ela é simples rápida.

A pandemia do Coronavírus (SARS-CoV-2) colocou a nossa rotina do avesso e nos trouxe diversas mudanças que tem refletido nos hábitos, no trabalho, nas relações, no corpo e na mente. Mas já que não dá para evitar tudo isso, encontrar formas estratégicas de se adaptar pode ser uma excelente saída para manter a vida em equilíbrio.

Gostaríamos de saber sobre a sua rotina durante o período de isolamento e sobre o seu conhecimento em relação à obesidade e a covid-19.

\*Obrigatório

1. Qual é a sua faixa de idade? \*

Marcar apenas uma oval.

- 18 à 30 anos  
 31 à 60 anos  
 61 anos ou mais

2. Sexo \*

Marcar apenas uma oval.

- Feminino  
 Masculino

3. Qual a sua altura? (Pode ser um valor aproximado) \*

4. Qual o seu peso hoje? (Valor aproximado) \*

\_\_\_\_\_

5. Qual foi o seu sentimento quando tivemos que "entrar" em isolamento? \*

\_\_\_\_\_

6. Como era sua alimentação antes da pandemia? \*

Marcar apenas uma oval.

- Saudável  
 Razoavelmente saudável  
 Nunca me preocupe com a minha alimentação

7. Percebeu alguma mudança na rotina da alimentação na pandemia? \*

Marcar apenas uma oval.

- Sim, passei a comer mais  
 Sim, passei a comer menos  
 Não, continuei com uma alimentação saudável  
 Não sei dizer

8. Você fazia alguma atividade física antes da pandemia? \*

Marcar apenas uma oval.

- Sim, frequentemente  
 Sim, à vezes  
 Não, comeci a fazer durante a pandemia  
 Não.

9. Você que fazia atividade física antes da pandemia, continuou fazendo em casa? \*

Marcar apenas uma oval.

- Sim  
 Não  
 Eu respondi que não fazia atividade física

10. Que tipo de atividade física você conseguiu fazer em casa? \*

Marcar apenas uma oval.

- Aeróbica  
 Musculação  
 Esporte  
 Não fiz atividade em casa

11. Você conhece a doença do Coronavírus, também conhecida como Covid-19? \*

Marcar apenas uma oval.

- Sim  
 Não  
 Já ouvir falar, mas não conheço bem

12. Você acha que a pessoa acima do peso corre mais risco com o coronavírus? \*

Marcar apenas uma oval.

- Sim  
 Não  
 Não sei

13. Adquiriu alguma estratégia para não ganhar peso ou para perde peso durante a pandemia? \*

Marcar apenas uma oval.

- Sim  
 Não  
 Nem pensei nisso

14. Se sim. Qual foi a sua estratégia para perda ou manutenção do peso. \*