
Social representation of obesity: an analysis with students of middle and university education

Representação social da obesidade: análise com estudantes do ensino médio e universitários

Representaciones sociales de la obesidad: un análisis con estudiantes de la enseñanza media y universitarios

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Abstract: The objective of this study was to analyze and compare the social representations elaborated by high school and university students about obesity. The study enrolled 200 high school students from public and private schools and 200 university students from João Pessoa, Brazil. The instruments used were a sociodemographic questionnaire analyzed through descriptive statistics performed at SPSS software and a Free Word Association Test with “obesity” as the stimulus, analyzed through prototypic analysis at Iramuteq software. The analysis revealed common elements of the central core of these representations that shows an unifactorial conception regarding the causes of obesity, relating it mainly to poor nutrition and without considering the psychosocial aspects related to the phenomenon, which can lead to blame and prejudice. This study means to stimulate interventions that present accurate information about obesity, to clarify its multifactoriality and to reduce prejudice toward obese people.

Keywords: social representations; obesity; prototypical analysis

Resumo: O objetivo deste estudo foi analisar e comparar as representações sociais elaboradas por estudantes do ensino médio e universitários frente à obesidade. Participaram do estudo 200 estudantes do ensino médio de escolas públicas e privadas e 200 universitários de universidade de João Pessoa, Brasil. Os instrumentos utilizados foram: questionário sociodemográfico, analisado através de estatísticas descritivas realizadas no software SPSS e Técnica de Associação Livre de Palavras a partir do estímulo “obesidade”, analisado por meio de análise prototípica no software Iramuteq. A análise revelou elementos comuns nos núcleos centrais dessas representações que evidenciam uma concepção unifatorial em relação às causas da obesidade, relacionando-a principalmente à má alimentação, sem considerar consistentemente os aspectos psicossociais associados, o que pode levar à culpabilização e ao preconceito. Espera-se com este trabalho estimular estudos futuros e intervenções que apresentem informações acuradas sobre a obesidade e possam diminuir o preconceito em relação às pessoas obesas.

Palavras-chave: representações sociais; obesidade; análise prototípica



Resumen: El objetivo de este estudio fue analizar y comparar las representaciones sociales elaboradas por estudiantes de la enseñanza media y universitarios frente a la obesidad. Participaron del estudio 200 estudiantes de educación secundaria de escuelas públicas y privadas y 200 universitarios de universidad de João Pessoa, Brasil. Los instrumentos utilizados fueron: cuestionario sociodemográfico analizado a través de estadísticas descriptivas realizadas en el software SPSS y Técnica de Asociación Libre de Palabras con el estímulo "obesidad", analizado por medio de análisis prototípico en el software Iramuteq. El análisis reveló elementos comunes en los núcleos centrales de esas representaciones que evidencian una concepción unifactorial en relación a las causas de la obesidad, asociándola principalmente con la mala alimentación, sin considerar consistentemente los aspectos psicosociales relacionados, lo que puede llevar a culpabilización y al prejuicio. Se espera con este estudio estimular intervenciones que puedan esclarecer sobre la multifactorialidad del fenómeno y disminuir el prejuicio existente.

Palabras clave: representaciones sociales; obesidad; análisis prototípico

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Currently, obesity is conceptualized as an “abnormal or excessive accumulation of fat that causes damage to the health of individuals” (World Health Organization, 2018a, p.1) and, for its health consequences, is considered a disease. The recognition of obesity as a disease was established in 1948 by the World Health Organization (WHO) when it was included in the International Classification of Diseases (James, 2009). One of the main instruments for the diagnosis of obesity is the Body Mass Index (BMI), whose calculation considers weight and height to generate an index that is comparable to recommended parameters. According to the WHO, a BMI that is above 30 kg/m², it is an indication of obesity (World Health Organization, 2018b). According to Santos (2008), this index is not sensitive enough to differentiate what is a disease and what is characteristic, because it cannot incorporate the multiplicity of body morphologies and existing physical biotypes. However, we recognize that there is a need to establish diagnostic criteria for obesity that serve, above all, the purpose of care and treatment of the condition and the BMI has been an important tool in this regard, even if it is not perfect. However, we emphasize the need to develop more sensitive diagnostic criteria for obesity.

Obesity has a global prevalence that increases gradually each year and has almost tripled since 1975 (World Health Organization, 2018c). The report of the WHO on the profile of countries about non-communicable diseases this year shows that the majority of the world population lives in countries where overweight and obesity kill more people than being underweight (World Health Organization, 2018d). This report shows that between 2000 and 2016, obesity rates showed a steady increase in all WHO regions (WHO Region in Africa; WHO Region of the Americas; WHO Eastern Mediterranean Region; WHO European Region; WHO Southeast Asia Region and the WHO Western Pacific Region), as well as in all income groups, with the global prevalence

increasing from 9 % in 2000 to 13 % in 2016 (World Health Organization, 2018d).

A study points out that the biggest increase in relation to the prevalence of obesity happened in the Region of the Americas, going from 20 % in 2000 to 29 % of the population in 2016 (Abarca-Gómez et al., 2017). In Brazil, in 2016, obesity reached 19 % of men and 26 % of women over 18 years of age and in total, 22 % of the Brazilian population was obese this year (World Health Organization, 2018d). This same report provides a projection of the change in obesity rates for 2025 in Brazil and reveals that the incidence is expected to increase by about 4 % for men and 5 % for women.

Nascimento (2008) points out that there is a recognition that obesity can be caused by factors of the most diverse instances, however, even science still emphasizes in its studies the organic and individual aspects, anchored in a biomedical angle, in despite of the psychosocial causes of obesity (Araújo, Freitas, Pena, & Garcia, 2016). In this sense, a predominant unifactorial perspective is maintained in relation to the study of the causes of the disease. These ideas read obesity through the Flexnerian paradigm. This model has an exclusively biological perspective of disease, with denial of the social determinants of health, encouraging a reductionist approach to knowledge (Almeida, 2010). This speech stimulates beliefs that obesity is caused exclusively by poor diet and physical inactivity, without considering other causes or even factors that affect these instances. Such a model has shown itself to be insufficient to think about integrated care for people with obesity, as warns Araújo (2017). The belief about the unifactorial nature of obesity ends up encouraging attitudes of blaming the obese since poor diet and physical inactivity are issues that are, at first sight, controllable by each individual. The implications of this belief are closely linked to prejudice and often appear with negative stereotypes. However, it is worth emphasizing that the current conception of obesity is the result of a historical trajectory permeated with multiple meanings.

The very concept of obesity as a disease is recent, once, since the emergence of our species until the first decades of the twentieth century, one of humanity's greatest challenges was the scarcity of food. This serious problem led, at the time, to the connotation that fat was good and that corpulence and an increase in "meat" were desirable (Eknoyan, 2006). Thus, for most of the history of mankind, the representation regarding the accumulation of fat was positive. Only in the middle of the 19th century obesity started to be recognized as a cause of damage to health (Gilman, 2008); from then on, the representation of fat excess starts to become negative. Part of this change is due to the rise of the Industrial Revolution, because the need of the major economic powers to increase the number of people with a standard body for work (Caballero, 2007). In this way, with the exhausting work routines, characteristic of this period, the obese body starts to be considered unsuitable for work and obesity begins to be associated with negative moral values. Nascimento (2007), points out that Christian ideology also contributed to this association, which caused the fat bodies (formerly indicators of prosperity) to be banned and associated with illicit enrichment, excesses and lack of moderation.

Only in the last century did the concept of obesity as a disease with well-defined pathological consequences appear (Eknoyan, 2006) and diagnostic criteria unrelated to aesthetics began to be developed. Even with more scientific criteria in relation to the concept and diagnosis of obesity, the conceptions related to a moral condemnation of it multiply. At the same time, a new model emerges: thinness as a condition of beauty that gained historical strength in the early twentieth century and continues to the present day (Mattos & Luz, 2009). This modification of the roles and meanings of fat and thinness contributes to the current conjuncture of the Social Representations of obesity, including their concepts and practices linked to these.

Social representations are a form of knowledge, socially elaborated and shared, which have a practical objective and contribute to the construction of a reality common to a social group (Jodelet, 2001). Thus, social representations emerge from communication and information dissemination processes in society and are submitted to changes that new information can provide.

The concept of obesity proposed by the WHO as “abnormal or excessive accumulation of fat that causes damage to the health of individuals” (World Health Organization, 2018a, p.1), is part of what Moscovici (2009) calls the reified universe of social representations. It is in this universe that the sciences can, so to speak, “impose their authority on the thought and experience of each individual and decide, in each particular case, what is true and what is not” (Moscovici, 2009, p. 50). In the consensual universe, society is seen as a group of people who are equal and free and where each one has the possibility to speak on behalf of the group and through the expression of each other's opinions, social representations are also built (Moscovici, 2009). Knowledge often migrates from the reified to the consensual universe and changes along this path. It is important to note that, although apparently neutral, the WHO concept does not deal with the multifactorial nature of the causes of obesity. The lack of this information in the concept of obesity, which is probably one of the most widespread elements in the reified universe on the subject, can negatively impact representations because this absence can reach the consensual universe in a way to mischaracterize obesity, defining it as a phenomenon that does not have several causes.

In the already mentioned classic concept of Jodelet on social representations, this aspect is clear, since social representations “contribute to the construction of a reality common to a social group” (Jodelet, 2001, p. 36). This leads us to the reflection that social representations guide the practice of groups regarding obesity, at the same time that they participate in the construction of reality in relation to the disease. In this sense, if the social representations of groups toward obesity have a strong negative content, the representation will contribute to the construction of an increasingly hostile reality in relation to obesity and the individuals who experience this condition.

Investigate the social representations of obesity can help to understand the reality that has been built around the phenomenon in different social groups. Two of us are particularly interested in this work: those of high school students and university students. We ask ourselves if the social representations regarding obesity will be profoundly different between these groups since it is assumed that university students will have a more direct access to the reified universe of the theme, while high school students will have a greater insertion in the consensual universe of the phenomenon. To answer this question, the general objective of this study is to know and compare social representations of obesity among university students and high school students through the structural approach to social representations proposed by Abric (2003). In this approach, the elements of a representation (information, beliefs, opinions and attitudes) are hierarchized and are organized in a central core, which gathers the most shared elements of a representation, and which is surrounded by peripheral elements, less consensual but which incorporate the new elements of representation (Allain & Nascimento-Schulze, 2009), which can help us to understand what is most shared in the representations of each group, as well as what appears of new in these representations. We expect that this study will contribute to the understanding of social representations of obesity as well as to encourage the elaboration of future investigations on the theme that can advance regarding the understanding of this phenomenon. It is also expected that this study contributes to the construction and implementation of more effective prevention and intervention programs against obesity, developed in order to fill the gaps and correct the possible distortions found in the representations on the theme.

Method

Type of investigation

This was an exploratory and descriptive study, with a cross-section and a non-probabilistic sample sorted by convenience.

Participants

The research was conducted in public and private schools that had high school in João Pessoa and in a university with the highest number of students in the state in the same city. Participated in the study 200 high school students from schools in João Pessoa (PB), as well as 200 university students from the same city.

The sample of high school students was mostly female (57.5 %), aged between 14 and 20 years old and mean of 16 years old (31.9 %) ($SD = 1.18$), attending the 3rd year of high school (36.6 %) and studied in public schools (58.5 %).

The sample of university students was composed of 200 subjects, mostly women 153 (76.5 %), aged between 18 and 29 years (78.5 %), mean of 26 years (8.7 %) $SD = 8, 23$, from the Human Sciences area (46 %).

Instruments

Instruments used were: the Free Word Association Test and a sociodemographic questionnaire. In this technique, the researcher explains to the participants that he will present a stimulus and guides the participants to list which are the first words that come to mind about the stimulus. Coutinho and Bú (2017), explain that the stimuli can be verbal, such as words or expressions, non-verbal (figures or photographs), and also video or sound materials, however it is important that they are previously defined according to the representational object that if you want to investigate. It is important for the researcher to indicate the number of words requested from the participant, which normally vary between three and five, as well as informing that the answers should be given as soon as possible, as time can affect the accuracy of the answers. We recommend reading Coutinho and Bú (2017) for a better understanding of the Free Word Association Test and its relationship with the Theory of Social Representations. In our study, participants were asked to write the first five words that came to mind when they heard the word obesity (stimulus).

Data analysis procedures

The sociodemographic questionnaire was analyzed using descriptive statistics performed on the software. IBM SPSS 23. The data from the Free Word Association Test were analyzed using the prototypical analysis performed on the software for qualitative data Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires (Iramuteq). Regarding the data treatment, which is a process prior to the analysis by the software, we follow the process of lemmatization as suggested by Wachelke and Wolter (2011), who emphasize that it is the most indicated treatment considering Abric's structural approach (2003).

Prototypical analysis is a technique developed specifically by the field of study of social representations that aims to identify the representational structure from the criteria of frequency and Average Importance (AI) attributed to the words associated with a stimulus in a free evocation test (Wachelke & Wolter, 2011). In the prototypical analysis, in the first zone is the central core (upper left), with the words that have high frequency and low Average Importance (those that were most readily evoked) appear, these would be the probable indicators of the central core of a representation (Camargo & Justo, 2016). The peripheral elements are: the first periphery (second zone), second periphery (third zone) and contrasting elements zone (fourth zone). The words present in these zones have progressively lower frequencies (they were less evoked elements) and higher AI, which means that these elements were not so readily evoked.

Ethical procedures

This study was carried out respecting the ethical standards required internationally and considering the ethical aspects according to the rules applicable to research in Human and Social Sciences in accordance with Brazilian Resolution No. 510/16 (Resolution No. 510, 2016). The project was submitted to and approved by the Research Ethics Committee of the Federal University of Paraíba (Brazil), number CAAE 63923317.1.0000.5188.

Results

The weight and height informed by the participants were used to describe the sample's BMI in order to better understand the groups from which the social representations of this study emerged. In the sample of university students, 15% of participants were underweight ($M = 16.72$; $SD = 1.32$) and 39.5 % of participants were of normal weight ($M = 21.38$; $SD = 1.77$). In the overweight range, we had a total of 44 % of participants, of which 25.5 % were in the pre-obesity range ($M = 27.14$; $SD = 1.31$); 11 % were in the BMI range for obesity I ($M = 32.22$; $SD = 1.41$); 3.5 % participants in the obesity range II ($M = 36.84$; $SD = 1.08$) and 4 % participants in the obesity range III ($M = 44.86$; $SD = 5.41$). In the sample of high school students, 19 % of participants were underweight ($M = 16.49$; $SD = 3.01$). Most of the sample (56 %) had normal weight ($M = 21.33$; $SD = 1.81$). A total of 14 % of the participants were overweight, of which 12 % were in the pre-obesity range ($M = 27.32$; $SD = 1.26$). Still in the overweight range, 1.5 % of the participants were in the BMI range for obesity I ($M = 32.98$; $SD = 0.78$) and 1 participant (0.5 % of the sample) with obesity III and BMI of 53.28.

Thus, while the sample of high school students is predominantly composed of thin people (56 %), the sample of university students is mostly overweight (44 %). This difference in belonging can impact representations about obesity.

In university students, the mean frequency of evocations was 16.85, while the minimum frequency of evocations for inclusion in the chart was 5, which corresponds to 2.5 % of the total participants in this sample. In high school students, the mean frequency of evocations was 18.52, and the minimum frequency for inclusion in Table was of 5 (2.5 % of the total participants in this sample). The cutoff point for frequency between high and low frequency zones was to have higher frequency than the mean of the frequencies of the forms included in the analysis, $F = 16.85$ for university students and $F = 18.52$ for high school students. The AI was 2.81 for university students and 2.69 for high school students. The cut-off point of the AI was 3 for the two samples (order corresponding to the midpoint of the response possibilities of the evocation task). The analysis tables were cut at the time of 8 evocations from the second periphery zone to facilitate the visualization and discussion of the data.

Table 1.

Prototypical analysis - social representation of obesity by high school students

Central Core			First Periphery		
F \geq 18,52 Average Importance < 2,69			F \geq 18,52 Average Importance \geq 2,69		
Evocations	F	Average Importance	Evocations	F	Average Importance
Food	95	2,1	Weight	46	2,7
Fat	75	2,3	Prejudice	45	2,9
Fat Person	58	1,4	Disease	44	2,7
			Sedentary lifestyle	25	3,3
			Difficulties	20	3,5
Contrasting Elements Zone			Second periphery		
F < 18,52 Average Importance < 2,69			F < 18,52 Average Importance \geq 2,69		
Evocations	F	Average Importance	Evocations	F	Average Importance
Gluttony	5	2,6	<i>Bullying</i>	18	3,1
			Health	17	2,9
			Physical exercise	11	3,2
			Whale	10	3,1
			Scale	10	3,8
			Hungry	9	3,8
			Alimentation	9	2,7
			Belly	9	3,7
			Diabetes	9	3,3
			Ugly	8	3,1

Table 2.

Prototypical analysis - social representation of obesity by university students

Central Core			First Periphery		
F \geq 16,85 Average Importance < 2,81			F \geq 16,85 Average Importance \geq 2,81		
Evocations	F	Average Importance	Evocations	F	Average Importance
Disease	84	2,4	Prejudice	36	2,9
Fat	67	1,7	Sedentary lifestyle	28	3,4
Fat Person	58	1,3	Alimentation	24	3,1
Food	45	2,8	Ugly	18	3,1
Health	42	2,7	Anxiety	17	3,5
Weight	27	2,6			
Contrasting Elements Zone			Second Periphery		
F < 16,85 Average Importance < 2,81			F < 16,85 Average Importance \geq 2,81		
Evocations	F	Average Importance	Evocations	F	Average Importance
Problem	12	2,5	Difficulty	14	3,4
Health Problems	6	2,7	Depression	13	3,5
Cholesterol	6	2,8	Excess	12	3,2
Fatphobia	5	2,8	Diet	12	3,8
High blood pressure	5	2,8	Low self esteem	12	3,3
			Sadness	11	3,5
			Diabetes	11	3,5
			<i>Bullying</i>	10	4
			Compulsion	9	3,3
			Shame	9	3,7

Table 1 presents the evocations of high school students toward obesity, while Table 2 shows the evocations of university students regarding the theme. In the first zone (upper left) of each table, there is the area of the central core representation of each group. Regarding the central core zone of the two groups, three elements are common: the terms “food”, “fat” and “fat person”. It is in these elements that obesity becomes concrete for these groups, where it is objectified. Objectification is the process of transforming an idea, concept or opinion into something concrete (Franco, 2004). The word “food” present in the central core indicates that obesity is materialized for these groups in food, or even in poor diet (either due to excess food or because they are high-calorie foods), as well as in “fat”, which points to the WHO's definition of obesity as obesity, which defines it as an “abnormal or excessive accumulation of fat” (World Health Organization, 2018a, p.1). Finally, also in the central core of the representation of these two groups is the term “fat person”, which points to an objectification of the phenomenon also in the obese person, in the fat body.

Still in the central core of representations of university students, the word “weight” appears, which also appears as the most frequent and readily evoked word in the first periphery to the representations of high school students. This term refers to the increase in body mass that accompanies obesity and is related to the increase in BMI, currently one of the main criteria for the diagnosis of obesity. This term present with high frequency in both groups demonstrates that

weight is also an important objectification in this representation, in weight obesity becomes concrete for these subjects.

The main difference between the central cores of these two representations is that for university students, obesity is anchored mainly in the disease, while for high school students it is mainly objectified at food. Anchoring is the phenomenon where we use the information that we have, in this case, the disease, to then think about other objects, in this case, obesity. Another important point is the emergence of the word “health” in the central core of the representation of university students. This anchoring may indicate that obesity is also thought from the point of view of health, probably due to its impairment, which also refers to the WHO concept of obesity that says that obesity is an excessive accumulation of fat that “causes damage to the health of individuals” (World Health Organization, 2018a, p.1).

Regarding to the peripheral elements, it is worth noting that sedentary lifestyle appears in the first periphery in the representations of the two groups and physical exercise appears in the second periphery from the representation of high school students. The data are largely consistent with the study by Collipal and Godoy (2015). In this study conducted with a sample of 200 students, including pre-university and university students from Occupational Therapy, Nursing and Nutrition courses. The results of these research indicate that, for all students, the terms with high semantic value in relation to the concept of obesity are: illness, food, fat, problem and physical inactivity. The authors point out that students recognize obesity as a disease and its causes are, in general, associated with inadequate food intake and a sedentary lifestyle (Collipal & Godoy, 2015).

The word prejudice appears in the first periphery and the word “bullying” in the second periphery from the two groups, which indicates the recognition that people with obesity are oftenly targets of prejudice in society. In the second periphery of the two groups, psychological components appeared that can be associated with the consequences of prejudice or can be related to the psychological causes of obesity that begin to appear in the representation. Some of these terms are: “depression”, “low self-esteem”, “sadness”, “uncontrol”, “suffering” and “anguish”.

Evidence of prejudice appears mainly through the negative stereotype ugly, which appears in the first periphery to the representation of university students and in the second periphery from the representation of high school students. However, it is important to mention that these indications both in relation to university students and in relation to high school students only appeared in the second periphery because the analysis only considers words with a high frequency to compose the picture. However, both in relation to university students and students, an immense number of negative stereotypes and offensive words in relation to the obese emerged, but which, in isolation, appeared with a low frequency.

The contrasting elements zone groups the less frequent and later evoked elements, however, it indicates the elements that are upcoming in the representations. For high school students the term “gluttony” appears in this area while for university students the words “problem”, “health problems”, “cholesterol”, “fat personphobia” and “high blood pressure” stand out in the contrasting elements zone.

Discussion

The findings show that there are central elements of the social representation of obesity that are widely shared even in groups with different insertions (school and university) and different belongings toward the object (the sample of high school students is composed predominantly with thin people (56 %), while the sample of university students is mostly overweight (44 %)). In our study, these terms are “food”, “fat” and “fat person”, which indicate that obesity is represented mainly as an excessive accumulation of fat, caused by poor diet and it becomes apparent in the fat body, in the obese person.

Thus, obesity is largely objectified at these elements shared between the central core of the two representations. As mentioned, the element fat refers directly to the WHO concept of obesity, which means that part of knowledge can migrate from the reified to the consensual universe. However, this change does not happen in a neutral way, without movements. On the contrary, Moscovici in his study of how a scientific theory (psychoanalysis) migrated to the consensual universe, observed that while certain elements were widely shared, others were forgotten, especially those that contained content not considered appropriate for the time, but that were central elements of the theory, such as the concept of libido (Jesuino, 2011). It is interesting to note that this gap, emphasized by Moscovici, causes a distortion of the original content. Thus, even well-established scientific theories are subject to changes in the process of transforming knowledge into social representations. In this way, we understand that scientific knowledge changes in the process of appropriation by the common sense and these changes can result in new meanings, which modify the way a certain object is perceived and treated.

This phenomenon also happens with the representation of obesity. While the fat element is widely shared and is in line with both the WHO concept and what is spread within the reified universe of representation about obesity, an even more consensual element emerges, but it is not highlighted in these fields: a single factor in relation to the causes of obesity. Thus, the data reveal that the representation of obesity for university students and high school students is still mainly anchored in organic causes, with an attribution of obesity only to internal factors, mainly linked to poor diet and physical inactivity. This shared core can refer to a hegemonic representation of obesity, which are representations that can be shared by most members of a highly structured group (a nation, a party, etc.) and sometimes between groups, and implicitly prevail in practices symbolic, appearing to be uniform and coercive (Cabecinhas, Lima, & Chaves, 2006). However, the hegemonic representations, despite being more stable over time, also change.

The historical path of the theme's representations tells us about it. As already mentioned, the most consensual representations about obesity have been different. Historical and social factors, such as the Industrial Revolution and the association stimulated by the Christian ideology between sin and obesity, caused obesity to be seen in a progressively more negative way and the obese person increasingly blamed. At the same time that it is morally condemned, the prevalence of obesity increases significantly in Western society. One of the factors that can contribute to this increase is the fact that the current production system requires more time for work-related activities; in this way, time becomes scarce and something to be saved. Speed and practicality end up being prioritized in terms of food choice and exercise. Industrialized foods, almost prepared, become an option that meets the demand of the time economy; on the other hand, these ultra-processed foods usually have low nutritional value and high caloric value. Also, to meet the current demand for saving time, fast food is strengthened and includes not only the traditional food chains, but also food trucks and similar options, which bring ready meals stores closer to consumers and for even more affordable prices. Prices are also a big appeal; in many countries fast food is much cheaper than slow food (of higher quality, less caloric and that takes longer to prepare). The weight of the financial factor in food is also an important social issue linked to obesity that is often overlooked and one of the reasons why the condition is present in all social classes. Before, it was thought that obesity happened mainly among the richest due to the abundance of food; however, more and more, people with lower incomes are becoming obese because foods such as breads, pasta and fast food are easier to afford despite causing long-term health damages.

Thus, on a daily basis the media emphasizes the role of poor diet and physical inactivity not only in obesity, but also in overweight and these factors are disclosed as being in total control of individuals. Social factors such as the value of healthy foods, their offer, preparation time, time and financial investment required to exercise are not considered. Psychological factors are also neglected: anxiety, depression, problems with self-esteem, impulse control disorders, among other

psychological factors, are rarely reported as a cause of obesity. The result of this process is that the information that the causes of obesity are completely controlled by the individual migrates to the common sense, therefore, he or she is blamed for his or her health condition. This unifactorial representation can lead to the blaming of the obese, as shown by the works of Araújo (2017), Justo (2016) and Gebara (2017).

In addition, this unifactorial representation in relation to the causes of obesity, in the case of university students who will work with the disease, can hinder the provision of adequate and effective treatment for obese individuals by creating blind spots in relation to the other causes of obesity (Teixeira, Pais-Ribeiro, & Costa Maia, 2012). In a systematic review by Teixeira et al. (2012) with health professionals that work with obesity, the data indicated a lack of appropriate understanding and adequate competence in relation to the treatment of the disease. The authors point out that this probably contributes to the development of ambivalent beliefs and negative attitudes towards obese individuals who were described in their study as unmotivated, lazy and without self-control.

In Araújo's research (2017) about the representational structures of obesity for university students in the health field (physical education, medicine, nutrition and psychology), the author found statements of discriminatory content supported by the supposed concern with the health of people under the condition of overweight. Araújo's research also revealed that the negative stereotypes found (failure, victimization, laziness, carelessness, among others) were affected by a strong moral and social burden, which is also true for our study. In research developed with university students who were taking a postgraduate health discipline (Medicine, Clinical Psychology or Psychiatric Residency), it was found that the weight bias is commonly observed in these students who report frustrations and stereotypes about the treatment of patients with obesity, which is likely to cause damage to the treatment of obese people offered by these professionals (Puhl, Luedicke & Grilo, 2014).

Our analyzes also revealed evidence of prejudice in these representations that appear, mainly, through negative stereotypes, many of which appeared in the data in quantity, but due to the variability of the terms used, these data were unable to individually reach the frequency necessary to appear within the framework of prototypical analysis, with the exception of the term "ugly". The negative stereotypes that circulate about obesity help to make obesity concrete, palpable, therefore, they objectify it. This objectification often brings obesity as someone lazy, without willpower, who is not attractive, unhappy, less active, less assertive, less athletic, less hardworking, less popular, less successful and less likely to find a romantic partner (Grant, Mizzi, & Anglim, 2016; Mussap, Manger, & Gold, 2016), data also found in our research. Such stereotypes have a negative impact on the social representations of obesity, affecting the reality of those who live with the disease.

The consequences of the prejudice experienced by this population also appear in our study, for example, through the term "shame" that also appears in the second periphery of both groups and seems to refer to the suffering faced by the obese because of the prejudice against the present obesity of society. The findings are consistent with the research by Collipal and Godoy (2015), where pre-university and university students highlight concepts of obesity as concepts of the social consequences of obesity, mentioning terms such as "anxiety", "depression", "shame" and "discrimination".

One of the only differences between the representations of the two groups is the anchoring of obesity in the term "disease", by the university students and the appearance of the word "health" in the central core of the representation of this group. This anchoring may indicate that for university students, obesity is also seen as a disease with repercussions for health, which is also related to the WHO concept. However, even seen as a disease, the elements of blame are practically the same as those seen in the representation of high school students, showing that the unifactorial perception in relation to the causes of obesity, probably, is more related to blame than to

representation as a disease or “not disease”. Another difference found, this more subtle, appears in the contrasting elements zone of the two groups. The relationship between the contrasting elements zone and the central core refers to the possibility of transition of social representations over time. In high school students, this transition does not seem to advance in relation to blaming the obese (since the only word that appears in this zone is the term “gluttony”), while in university students the transition appears to be more positive (although not perfect) with terms that refer to the repercussions of obesity for health (health problems, cholesterol and high blood pressure) and in the lives of these people (problem, fatphobia). This result seems to indicate that the expectation of a change in the representation of obesity is more distant than expected in high school students than in university students.

Another interesting fact is that the representations were not fundamentally different between overweight people (with a BMI above 25 kg/m²) and thin people (BMI up to 24.9 kg/m²). Although theories such as Turner's, Brown and Tajfel's (1979) Theory of Social Comparison suggest that, in general, there is a tendency towards endogroup favoritism, where people tend to favor their own group over others even in terms of perception, this phenomenon did not happen in our study. In other words, overweight individuals did not have a more positive representation in relation to fat people, presenting, in the same way as many skinny people, numerous negative stereotypes in their representation toward obesity.

This phenomenon may have happened due to the more hegemonic character that the representation of obesity has presented in recent decades. As already mentioned, hegemonic representations can be strong enough to be shared between groups and prevail implicitly in symbolic practices (Cabecinhas et al., 2006). Thus, group membership may not have elicited so much difference in the social representations of obesity due to the high sharing of these representations consistently and with a certain uniformity, which is characteristic of hegemonic representations. Thus, when a representation is massively shared in media, by science, and in everyday discourses (as is the representation of obesity), even if the representation carries information and meanings that do not accurately correspond to reality and bring harmful content to certain groups, it is possible that members of the target groups end up sharing part of that discourse, as happened in our study. However, we emphasize that despite a certain stability in relation to hegemonic representations, we agree with Arruda (1998) when showing that in this type of representation there is also a struggle for territories whose demarcation is to be established. Thus, we bring that social representations are in constant movement and even those of a more hegemonic character can be modified depending on historical and social factors.

In this sense, we emphasize that our findings point to the existence of important factors regarding the causes of obesity that are not frequently investigated, such as the psychosocial causes of the phenomenon. This gap can interfere in the social representations that different groups build on obesity, because a single factor representation, excessively centered on the role of poor diet and physical inactivity, can tend to blame the individual and can be a trigger for the motivation of prejudice towards people who go through this situation. Our findings may provide information that can support the construction of public policies that promote interventions in the media and in formal education, both in schools and universities, on obesity and its causes. These interventions can favor the modification of the current representation of obesity and fat people, which can both help in the prevention and treatment of obesity and reduce prejudice against people who go through this situation.

The main difficulties encountered were the scarcity of other research in relation to the social representations of obesity and the difficulties in accessing the sample of adolescents due to the refusal of most schools to accept participating in the research. Among the limitations of the study, the main one is the non-generalization of data for other samples, however, we hope with this study to stimulate other works that deal with the social representations of obesity in other

groups, in addition we expect to contribute to the creation of public policies supported by an approach more complete and accurate of the phenomenon.

Final considerations

The study revealed that the core representation of obesity among university students and students shares common elements such as fat, fat, food. It is in these elements that obesity becomes concrete for these groups; it is in these elements that both university students and high school students objectify the obesity. Some of these elements, such as the term “fat”, are related to the definition of obesity propagated by the WHO. However, although the scientific definition of obesity is present in the representation, it should be noted that this definition does not point to the multiple causes of obesity or its psychosocial consequences. Correct this gap in the concept can positively impact the representation of obesity in different groups and can positively influence both the prevention and treatment of obesity by removing blind spots about its multiple causes and reduce prejudice against this group by decreasing the blaming in obesity.

The main difference between the central core of these two representations is that for university students, obesity is anchored mainly in disease (element with higher frequency and lower Average Importance) and in health. Perhaps greater access to information has influenced the central core of representations social of obesity leading university students to have a more accurate representation of the phenomenon in relation to illness. However, food or poor diet is still perceived as part of the central core of the representations of the two groups and sedentary lifestyle as part of the first periphery, which indicates that the social representations of obesity for the two groups are still markedly unifactorial, biological and linked to individual and “controllable” factors. This type of inaccurate belief about obesity can contribute to blaming the obese for their condition and increase the chance of prejudice. In this analysis, evidence of prejudice appears in the second periphery of the two groups through the negative stereotype ugly and with the stereotype whale in the high schooler’s representation.

We emphasize, however, that social representations are flexible and changeable, and that new information presented in a consistent manner can modify them. Thus, it is necessary to fight for the creation of public policies that promote interventions that emphasize the multifactorial character of obesity and focus on deconstructing the stereotypes that are often spread in relation to the obese in order to reduce prejudice against this group. These public policies need to reach the media, education and even science, by promoting research on the most neglected causes of obesity as well as studying aspects related to prejudice on this topic.

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