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NUTRITIONISTS PERCEPTION ON THE QUANTIFICATION OF FOOD CONSUMPTION REPORTED BY INDIVIDUALS WITH OBESITY

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ABSTRACT

Aim: To assess the perception of nutritionists on the quantification of food consumption reported by individuals with obesity. Materials and Methods: Qualitative study conducted with nutritionists between 2019 and 2020. Content analysis was performed using data from three focus groups and employing the thematic analysis technique. Results: The study highlighted four factors that may affect food consumption reporting. 1) Feelings of individuals with obesity; 2) Relationship between the professional nutritionist and the individual with obesity; 3) Aspects that hinder food quantification; and 4) Aspects that facilitate food quantification. Discussion: Firstly, the study aids in identifying the essential skills required for training nutritionists, particularly in relation to assessing food consumption, which is often undocumented. Secondly, it emphasizes the significance of nutritionists paying close attention to the emotions expressed by individuals with obesity while quantifying their food consumption, ensuring the demonstration of empathy when needed. Thirdly, it highlights the need for nutritionists to remain vigilant regarding the potential deliberate misrepresentation of food quantities among individuals with obesity who are seeking approval for bariatric surgery. Lastly, it acknowledges the value of previous experiences of individuals with obesity in adhering to diets and undergoing nutritional assessments as influential factors in facilitating dietary assessments. Conclusions: This study adds knowledge about the perception of nutritionists on the food quantification of individuals with obesity, which may be aid in more accurate and reliable assessment of food intake.

Key words: Obesity. Diet. Interview. Qualitative research.

RESUMO

Percepção de nutricionistas sobre a quantificação do consumo alimentar relatado por indivíduos com obesidade

Objetivo: Avaliar a percepção de nutricionistas sobre a quantificação do consumo alimentar relatado por indivíduos com obesidade. Materiais e Métodos: Estudo qualitativo conduzido com nutricionistas entre 2019 e 2020. A análise de conteúdo foi realizada usando dados de três grupos focais e empregando a técnica de análise temática. Resultados: O estudo destacou quatro fatores que podem afetar o relato do consumo alimentar. 1) Sentimentos de indivíduos com obesidade; 2) Relacionamento entre o nutricionista profissional e o indivíduo com obesidade; 3) Aspectos que dificultam a quantificação de alimentos; e 4) Aspectos que facilitam a quantificação de alimentos. Discussão: Primeiramente, o estudo ajudou a identificar as habilidades essenciais necessárias para a formação de nutricionistas, especialmente em relação à avaliação do consumo alimentar, que frequentemente não é documentado. Em segundo lugar, enfatizou a importância de os nutricionistas prestarem muita atenção às emoções expressas por indivíduos com obesidade ao quantificar o consumo alimentar, garantindo a demonstração de empatia quando necessário. Em terceiro lugar, destaca a necessidade de os nutricionistas permanecerem atentos à possível má representação deliberada das quantidades de alimentos entre indivíduos com obesidade que buscam aprovação para cirurgia bariátrica. Por fim, reconhece o valor das experiências anteriores de indivíduos com obesidade em seguir dietas e passar por avaliações nutricionais como fatores influentes para facilitar as avaliações dietéticas. Conclusão: Este estudo adiciona conhecimento sobre a percepção dos nutricionistas em relação à quantificação alimentar de indivíduos com obesidade, o que pode auxiliar em uma avaliação mais precisa e confiável do consumo alimentar.

Palavras-chave: Obesidade. Dieta. Entrevista. Pesquisa qualitativa.

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INTRODUCTION

Estimates indicate that approximately 2 billion individuals worldwide are overweight or obese (Swinburn e colaboradores, 2019).

According to the World Health Organization (WHO), by 2035, this estimate will solely pertain to individuals with obesity (WHO, 2000).

The increasing prevalence of obesity and its numerous complications can be attributed to multifactorial causes, including genetics, physiology, economics, psychology, social factors, culture, and the environment (Caterson e colaboradores, 2019; Swinburn e colaboradores, 2019; WHO, 2000).

Within this multifaceted framework, the imbalance between excessive energy intake and reduced energy expenditure plays a significant role in its development, underscoring the importance of evaluating and monitoring food consumption as a critical step in diagnosing and treating obesity (Dao e colaboradores, 2019; WHO, 2000).

However, reliably assessing the food consumption of individuals and populations, as well as their relationship with health conditions, has become a complex and increasingly essential task (Waterworth e colaboradores, 2022; Willet, 2013).

Food consumption assessment is typically carried out through food surveys using Food Records, Food Frequency Questionnaires and 24-hour dietary recalls, which rely on individuals self-reporting their intake (Willet, 2013). Nevertheless, the accuracy of self-reported intake is a major source of error when quantifying the size of food portions consumed, leading to potential underestimation or overestimation of food intake (Castro-Quezada e colaboradores, 2015).

The scientific literature suggests that the self-reported food intake in individuals with obesity is underestimated (Mcnitt e colaboradores, 2022; Pietilainen e colaboradores, 2010; Subar e colaboradores, 2003).

Additionally, some studies suggest that food mis quantification in individuals with obesity may be associated with other factors, such as body image dissatisfaction, negative experiences with weight reduction, specific types of foods, anxiety and fear of negative evaluations, and gender (Abbot e colaboradores, 2008; Asbeck e colaboradores, 2002; Mcnitt e colaboradores, 2022; Novotny e colaboradores, 2003; Tanaka e colaboradores, 2020; Tooze e colaboradores, 2004). Although these quantitative studies revealed possible relationships between the underestimation of food consumption and obesity, they did not explore the nature and cause of these findings.

Furthermore, it is recognized that dietitians and nutritionists are experts in methodologies that quantify food consumption (FAO, 2018), and they play a fundamental role in the prevention and management of obesity (Abbott, Parretti, Greenfield, 2021; Jung e colaboradores, 2015).

It is also emphasized that nutritionists are professionals who can gain a comprehensive understanding of their patients' eating behaviour (Wehling, Lusher, 2019), considering other factors that influence body weight in their assessments, such as lifestyle, cultural and socioeconomic factors (Jortberg e colaboradores, 2015).

Thus, this study aimed to comprehend the perception of nutritionists regarding the quantification of food consumption among individuals with obesity.

MATERIALS AND METHODS

A qualitative study was developed in. Three Focus Groups (FGs) were conducted with nutritionists who were familiar with the evaluation of food consumption in individuals with obesity. The study was approved by the Research Ethics Committee in the Health Sciences Division of the of the Federal University of Paraná, under the number 363.816, according to the Normative Ordinance no. 466/2012 of the National Health Council. All of the participants provided their informed consent.

Nutritionists were recruited through a convenience sample and were contacted through e-mail, in person, or telephone calls. Participants were eligible if they had a minimum experience of six months with the assessment of food consumption in individuals with obesity and were working in the Metropolitan Region of. Out of 85 nutritionists contacted, 17 showed interest to participate in the study: seven in the first, four in the second and six in the third focus group, which were held between August 2019 and January 2020. Focus groups were conducted until data saturation was achieved (Onwuegbuzie, 2011). At the third group, we assumed an additional focus group would not provide significant new information.

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The focus group was moderated by one researcher (LMG, Nutritionist, female, MSc) and two observers (LBS, Nutritionist, female, MSc; and LOP, Nutritionist, female, BSc). The moderator was responsible for facilitating all focus groups while one observer took notes on the participants´ statements, and the other observer took notes on non-verbal communication.

The researchers knew some of the participants but did not have a close relationship with them. Participants´ knowledge of the interviewer was restricted to the aims of the study. The focus groups were recorded using a camera and an audio recorder, with participants' permission.

Based on two testing focus groups with other nutritionists from the university, guiding questions and sub-questions (Table 1) were improved before the official focus group. The questions were designed to promote open and free dialogue, as well as to gather the nutritionists' perspectives on the research topic.

There was no specific sequence for the nutritionists to answer the questions, but the moderator ensured that everyone had the opportunity to participate effectively in the conversation. Sub-questions were asked based on the responses to the main questions.

Table 1- Guiding questions and sub-questions of the focus group.

#	Questions and sub-questions
1	When thinking about the report of food consumption of an individual with obesity, what is the first thought that comes to your mind?
1.1	What kind of reactions individuals with obesity demonstrate during the assessment of food consumption?
1.2	What reasons may have led individuals with obesity to these reactions?
2	In your opinion, can individuals with obesity quantify what they consume?
2.1	Do you think that individuals with obesity have difficulty quantifying what they consume? Why?
2.2	Do you think that individuals with obesity easily quantify what they consume? Why?
3	In your opinion, does their food quantification differ according to the type of food or drink or according to the method of preparation?
3.1	What can lead individuals with obesity to underestimate the amount of food consumed?
3.2	What can lead individuals with obesity to overestimate the amount of food consumed?
4	What visual resources do you use to aid individuals with obesity to report their intake?
4.1	How do visual resources contribute to the quantification of foods reported by individuals with obesity?
4.2	How do visual resources may hamper the quantification of foods reported by individuals with obesity?

The focus groups took place in a university room, where participants were seated in a circular arrangement around a table to encourage open discussion. Only participants and researchers were allowed in the room. Prior to starting the focus group, the nutritionists filled out a form that asked about their background, work location, and their experience, including the type and duration of their work with individuals with obesity.

The recorded contents obtained from the focus groups were transcribed in full, underwent a double transcription, and were compared for possible corrections. Participant names were not linked to their responses to maintain anonymity.

All data were analysed by content analysis using the thematic analysis technique, as proposed by Bardin (2016). The content analysis consists of exploring the content of messages using a set of analytical techniques to allow knowledge to be inferred, as follows: 1) pre-analysis, 2) exploration of the material and 3) treatment of the results, inference and interpretation.

The pre-analysis step was based on free-floating reading. This step involved the initial contact with the transcribed documents, allowing for the formulation of hypotheses

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and/or objectives for content analysis. The material was selected based on its relevance to the objectives and guided the preparation and interpretation of the material. This phase can be considered organizational as it establishes a work scheme to assist in the creation of analysis categories and support the final interpretation (Bardin, 2016), and it involved pre-defining themes based on the questions of the food groups.

The exploration stage included the definition of three main aspects: 1) the unit of analysis, which refers to the portion of text associated with the content; 2) the context unit, representing the key elements necessary for understanding and coding the units of analysis; 3) the themes, which represent the meaning of units after the text was analysis (Bardin, 2016).

An example is provided in Table 2 to demonstrate how data from the focus groups were organized. First, the unit of analysis (speech excerpts) was identified and then linked to a context unit (key elements), which subsequently led to the identification of a theme.

Table 2 - Exploration phase example.

Units of analysis (Speech excerpts)	Context Units (Key elements)	Units of meaning (themes)
"The individuals with obesity do not have this perception of high consumption, right?! So often they do not notice the snacks, they do not notice, these escapes, at these times of the day. This self-perception is missing (...)" (Focus group 2).	Nutritionist's view on the lack of perception of individuals with obesity about the small meals eaten throughout the day.	Hindering factors of food quantification
"In some cases, they (individuals with obesity) cannot estimate. For them it was a small piece of cake, ain't it?! But what is this small size? Sometimes they don't even know what is small" (Focus group 3).	Nutritionist's view on the difficulty of an individual living with obesity perceiving the portion size	

The final stage of analysis involved the treatment, inference, and interpretation of the organized data. This stage included condensing and highlighting information for analysis, resulting in inferential interpretations (Bardin, 2016).

It is important to note that the material from the focus groups was considered to reflect the perceptions of the group as a whole, rather than that of specific individuals (O. Nyumba e colaboradores, 2018).

Throughout the results section, verbatim quotes are used to illustrate the thematic findings of the focus groups. At last, all items from the Consolidated Criteria for Reporting Qualitative Research checklist have been reported (Tong, Sainsbury, Craig, 2007).

RESULTS

The nutritionists actively participated in the focus group discussions. The duration of the first, second, and third food groups was 58, 42, and 85 minutes, respectively. Nonverbal communication revealed interactions, agreements, and disagreements among the participants, which were taken into consideration during the interpretation of the results.

Seventeen female nutritionists participated in the focus groups (Table 3). The participants had a median age of 33 years and a median of two years of previous work experience with individuals with obesity, ranging from 6 months to 18 years. They worked in various settings, including private clinics and public health assistance.

Thematic analysis of the focus groups resulted in four themes of analysis: 1) Feelings of individuals with obesity; 2) Relationship between the nutritionist and the individual with obesity; 3) Hindering factors of food quantification; 4) Facilitating factors of food quantification, which are described and exemplified hereafter.

In all three focus groups, nutritionists discussed their observations of feelings experienced by individuals with obesity during

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the process of quantifying food intake. These feelings included shame, guilt, anxiety, and fear.

Table 3 - Characteristics of nutritionists in each focal group of the study.

Focal group	Age	Sex	Total clinical experience	Type of clinical experience
1	40	Women	14 y[a] and 5 m[b]	Clinical public practice with individuals and group sessions
1	29	Women	1 y	Clinical private practice including pre/post-bariatric surgery patients
1	33	Women	2 y	Clinical practice involving pre-bariatric surgery patients and outpatient nephrology clinic care
1	38	Women	10 y	Clinical practices in both public and private settings, including individual and group sessions.
1	41	Women	4 y	Clinical private practice with individuals and group sessions
1	33	Women	2 y and 4 m	Clinical private practice with individuals and group sessions
1	29	Women	1 y and 5 m	Clinical practices in both public and private settings, including individual and group sessions.
2	46	Women	18 y	Clinical public practice with individuals and group sessions
2	32	Women	6 y	Clinical private practice with individuals
2	30	Women	2 y	Clinical public practice with individuals
2	36	Women	4 y	Clinical private practice with individuals
3	35	Women	15 y	Clinical private practice with individuals and group sessions
3	29	Women	1 y and 3 m	Clinical private practice with individuals and group sessions
3	29	Women	6 m	Clinical private practice including pre/post-bariatric surgery patients
3	29	Women	2 y	Clinical public practice with individuals and group sessions
3	35	Women	5 y	Clinical public practice with individuals and group sessions
3	36	Women	6 m	Clinical private practice with individuals

[a]year [b]months

"They come feeling shame or guilt, afraid to talk about quantity." (Focus Group 1).
"The biggest difficulty (in quantifying) is that it usually leads to self-blame, especially when it's a quantity that they perceive as inadequate. It usually leads to self-blame." (Focus Group 2)

Nutritionists also recognized that both individuals with obesity and themselves might have preconceived judgments regarding food consumption quantification. Additionally, it was noted that individuals with obesity often feel the need to apologize and justify their food intake.

"Our own and their judgment, because they know it's something they shouldn't admit to us. They know, right? (in quotes), that they shouldn't be eating." (Focus Group 3)

"It's a moment of great anxiety when they try to quantify. They try to make this moment pass quickly, right?!" (Focus Group 1)

"They apologize right from the start." (Focus Group 1)

The feelings reported by nutritionists can also be considered an aspect that hampers the dietary quantification of individuals with obesity and may become a possible subcategory of the third theme. However, we chose to address it as a separate theme in this manuscript considering its importance to the complex personal and social aspects related to this thematic.

In the first and last focus groups, nutritionists highlighted that the professional's empathy makes it easier for individuals with obesity to talk about their food consumption and help to break possible barriers at the time of food quantification.

"The bond facilitates this quantification (...), professional empathy is very important, you know?! So, the individual can tell the truth because just quantifying doesn't mean anything, right?! They can quantify by lying about what they are eating. But quantifying while telling the truth really requires a relationship with the patient." (Focus Group 1).

"Nothing is a rule for everyone, right?! That's why we have to treat each individual according to their uniqueness, right?! Each person is different; some will have an easier time quantifying, while others won't." (Focus Group 3).

Also, in the third focus group, nutritionists pointed out the importance of evaluating aspects of each individual at the time of quantification and dietary counselling, such as routine and food preferences.

In all focus groups, nutritionists mentioned that individuals' previous experiences with other health professionals and/or other nutritionists may hamper their quantification of the dietary intake. The various information available in the media also interferes with the view that the individual with obesity has on their dietary intake, which also seems to interfere with the quantification.

"The interaction with other health professionals greatly influences their perspective on their own food. I often have patients who come and say that another professional told them to completely avoid carbohydrates, claiming it's the root of the problem. However, when you delve deeper into their eating habits, you may find that, for example, they consume eight litres of oil per month at home. Yet, they arrive with preconceived blame solely targeting carbohydrates..." (Focus Group 1).

Another difficulty mentioned in the three FGs was related to the lack of perception of these individuals about the contribution of snacking carried out throughout the day.

"The individual doesn't have a perception of their high consumption, you know?! So often, they don't notice the snacking or these little indulgences throughout the day. There's a lack of self-perception..." (Focus Group 2).

Nutritionists also mentioned that it is common for individuals with obesity, who seek to perform bariatric surgery, omit information about their food consumption. This is done to get the approval of nutritionists to undergo the surgery.

"For instance, with bariatric patients that I assist, they have to go through me, and they need my approval. They try to say what they think I want to hear to get my approval... They attempt to conceal or fabricate information that they believe will be deemed acceptable" (Focus Group 1).

Nutritionists also reported that the underestimation and overestimation in the food quantification by individuals with obesity depend on the type of food and/or food preparations.

"Sometimes they overestimate to please us, you know?! For example, they might say, 'I ate fruit' because they know fruits are considered good and healthy... But the intention is to please, to demonstrate motivation" (Focus Group 3).

Previous experience of obese individuals in carrying out diets and having nutritional assessments seems to help them to report more reliably the sizes of food portions consumed.

"Some patients have dieted so extensively in their lives that they know the volume of a cup, the size, and how many grams a portion of meat weighs. There's an advantage to that, as some patients have already been trained in Weight

Watchers, point counting diets, and they know." (Focus Group 1).

In the first focus group, nutritionists reported that quantifying food consumption of industrialized products was easy for obese individuals. This was related to the availability of these foods in pre-quantified packages.

"One aspect that significantly influences quantification is the increased consumption of ultra-processed foods. Quantification became easier for these foods because it's simpler to say 'I ate a pack, I consumed half a pack, I drank a can of soda, a liter.' Everything is already quantified, you know?!" (Focus Group 1).

Furthermore, in the third focus group, nutritionists reported that individuals with obesity can report the dietary portions of foods they think are wrong, due to the sense of guilt generated by consuming these foods.

"When they consume something, they consider 'wrong,' they can easily quantify it. They will remember eating a whole chocolate bar, and they will recall the exact size of it. Why? Because they feel guilty about it, and that memory stays with them. Pizza, for example. If they ate a whole pizza in a day, they will remember, they will remember." (Focus Group 3).

Finally, nutritionists mentioned that the use of mobile applications and visual resources, such as photos of food portions, also contribute to the quantification of food consumption.

"Visual aids help provide a more realistic perception of the quantity. Some individuals like to send a photo of their dish, and that also helps because it allows me to provide better guidance. It feels more tangible than just saying, 'I think it's three spoons.'" (Focus Group 2).

DISCUSSION

This research builds upon previous quantitative studies, providing context and explanations about the errors present in the food quantification of individuals with obesity.

From the assessment of focus groups carried out with nutritionists, four relevant themes emerged: 1) Feelings of individuals with obesity; 2) Relationship between the professional nutritionist and the individual with obesity; 3) Hindering factors of food quantification; and 4) Facilitating factors of food quantification.

The feelings of guilt, shame, anxiety, and fear reported by individuals with obesity, as mentioned by nutritionists, may stem from various psychosocial factors such as food restriction, social expectations, depression, and fear of negative judgment (Castro-Quezada e colaboradores, 2015; Dias e colaboradores, 2017; Mcnitt e colaboradores, 2022).

The feeling of shame was also mentioned in the study of Scagliusi e colaboradores (2003), in which individuals with obesity themselves felt when quantifying their food consumption. It is known that overeating often coexists with emotional experiences and the development of obesity (Koski; Naukkarinen, 2017), which can lead to both metabolic and emotional stress. Such feelings can help explain the challenges faced by these individuals when disclosing their food consumption to the nutritionist.

Additionally, the persistent discrimination and social exclusion that these individuals face can explain the occurrence of such feelings, which may lead to the increased emotional suffering of individuals with obesity (Cook e colaboradores, 2019).

Consequently, the constant apologies and justifications for the amounts of food consumed may reflect their desire for approval and acceptance.

Demonstrating empathy during the dietary assessment has been suggested as a crucial factor in facilitating accurate reporting of food consumption by individuals with obesity. Utilizing a motivational and nonjudgmental language when discussing and explaining the causes of obesity can have a significant impact on obesity care and strengthen the bond between the healthcare professional and the individual with obesity (Abbott, Parretti, Greenfield, 2021; Caterson e colaboradores, 2019; Fruh, 2017).

Nutritionists who are mindful of these aspects can provide support and have a positive influence on the self-image of the individual with obesity (Abbott, Parretti, Greenfield, 2021; Jung e colaboradores, 2015), thereby fostering confidence in patients to report their food consumption as accurately as possible.

As such, we believe that nutritional assessments should not solely rely on

functional skills and theoretical knowledge, but also encompass interaction, communication, motivation, and patience (Fruh, 2017; Jung e colaboradores, 2015) to enhance the relationship between the nutritionist and the patient.

Furthermore, it has been observed that individuals' previous experiences with other health professionals and/or nutritionists can impact their perception of their own food consumption.

The various conflicting and inconsistent information from these sources can undermine individuals' understanding of portion sizes (Spence e colaboradores, 2013).

Consequently, there is a need to educate healthcare professionals about the intricacies involved in quantifying the food consumption of individuals with obesity. It should be emphasized, however, that in, conducting dietary assessments, planning and coordinating dietary studies, and participating in multidisciplinary teams related to food and nutrition are private activities reserved for nutritionists, whether in public or private settings (Brasil, 1991).

Nutritionists also highlighted that individuals with obesity often struggle to accurately perceive and quantify snacking episodes throughout the day. This can be attributed to various distractions in the food environment, such as television use, and lack of portion control (Spence e colaboradores, 2013).

Therefore, encouraging individuals to pay closer attention to their snacking habits and consumption between meals throughout the day is desirable for more precise food quantification.

According to the nutritionists, individuals with obesity who are considering bariatric surgery tend to withhold information about their food consumption. The motivations and expectations of these individuals regarding bariatric surgery typically stem from its potential efficacy in addressing the chronic condition of obesity, resulting in significant weight loss and improved quality of life (Cohn, Raman, Sui, 2019; Zarshenas e colaboradores, 2020).

For them, bariatric surgery represents an intervention that can help regain control over unhealthy eating habits and reduce appetite (Cohn, Raman, Sui, 2019).

Thus, these findings underscore the importance of evaluating and enhancing our understanding of the dietary quantification practices of individuals with obesity who are considering this surgical procedure.

Regarding the underestimation and overestimation of certain foods and preparations by individuals with obesity, existing literature suggests a general tendency for individuals to underestimate larger portions and overestimate smaller portions. This phenomenon is known as the flat slope effect (Nelson, Atkinson, Darbyshire, 1994).

Similarly, our study revealed overestimation of foods perceived as healthy but consumed in smaller portions, and underestimation of foods considered unhealthy but consumed in larger quantities. Numerous quantitative studies have consistently demonstrated this association between underestimation of food consumption and obesity in individuals (Asbeck e colaboradores, 2002; Mcnitt e colaboradores, 2022; Novotny e colaboradores, 2003; Pietilainen e colaboradores, 2010).

It is suggested that these errors occur due to individuals' intention to demonstrate lower energy intake, either because they genuinely cannot recall their food consumption or because they wish to appear to be following a "healthy" diet (Castro-Quezada e colaboradores, 2015; Trijsburg e colaboradores, 2017).

On the other hand, nutritionists have noted that individuals with obesity find it easier to quantify their consumption of ultra-processed foods, as these products are often packaged in predetermined portions (Poti, Braga, Qin, 2017), which may end up contributing to the quantification of the portion consumed.

Furthermore, nutritionists have observed that individuals with obesity who have prior experiences with diets and nutritional guidelines tend to have better abilities to report and quantify their food consumption.

These individuals have likely undergone various deprivations and dieting practices throughout their lives (Dalmaso e colaboradores, 2019).

They are accustomed to paying attention to nutritional labels, types of preparations, specific foods, and quantities consumed, which can account for their improved quantification skills.

Additionally, nutritionists have reported that the utilization of mobile applications and visual resources can enhance the accuracy of food quantification.

Studies have demonstrated that visual aids such as photographs of food portions, household measurements, food replicas, and mobile applications can assist individuals in more accurately reporting the sizes of their food portions in the general population (Stumbo, 2013), regardless of their nutritional status.

The present study has limitations. First, this study did not verify the self-perception of individuals living with obesity. It would be interesting to compare in a single study whether the perceptions of individuals with obesity corroborate with the findings of the present study. However, this decision was made consciously by the authors in preparation for a future focus group involving individuals with obesity.

Secondly, the external validity of our findings to other populations may be questioned. Different countries may have variations in the skills and backgrounds of nutritionists/dietitians, leading to diverse experiences and perceptions when quantifying the food intake of individuals with obesity. Nevertheless, we believe that many other populations will recognize similar experiences and perceptions presented in our study.

The present study innovates to elucidate the reasons that lead individuals with obesity to quantify food portions with error, which hopefully can help to obtain more reliable food consumption data regarding this group of individuals.

It also confirms several aspects commonly observed in the quantification of food consumption among individuals living with obesity, which have not been extensively documented until now. Ultimately, we believe that this information will be beneficial for the training of future dietitians and nutritionists in conducting dietary assessments.

The manuscript yields the following implications for research and practice:

It aids in identifying the essential skills required for training nutritionists, particularly in relation to assessing food consumption, which is often undocumented.

It emphasizes the significance of nutritionists paying close attention to the emotions expressed by individuals with obesity while quantifying their food consumption, ensuring the demonstration of empathy when needed.

It highlights the need for nutritionists to remain vigilant regarding the potential deliberate misrepresentation of food quantities among individuals with obesity who are seeking approval for bariatric surgery.

It acknowledges the value of previous experiences of individuals with obesity in adhering to diets and undergoing nutritional assessments as influential factors in facilitating dietary assessments.

FUNDING INFORMATION

Financial support was granted by the following Brazilian Agencies: Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq; grant nº 441981/2014-3) and Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES, finance code 001).

CONFLICT OF INTEREST

None of the authors have a conflict of interest to disclose.

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ETHICAL APPROVAL

The study was approved by the Research Ethics Committee in the Health Sciences Division of the Federal University of Paraná, under the number 363.816, according to the Normative Ordinance no. 466/2012 of the National Health Council. All of the participants provided their informed consent.

Recebido para publicação em 30/04/2024
Aceito em 12/10/2024