



University Food Environments: Perceptions of Nutrition Students from a Higher Education Institution

Ambientes alimentares universitários: percepções de estudantes de Nutrição de uma instituição de ensino superior

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Abstract

Objective: To analyze the perception of Nutrition students on the food environment in a higher education institution of Rio de Janeiro. *Methodology:* A qualitative study was carried out adopting focus groups, where 18 to 30 years old students from integral and evening courses were invited to participate. Thematic analysis was used with analytical categories of the empirical material: “Characterization of the university food environment”; “What is a university food environment?”; “Potentialities and constraints of the university food environment”; and “The role of the educational institution in promoting a healthy university food environment”. *Results:* Fifteen undergraduate students of both genders participated in three focus groups, presenting an average age of 24 years. The research refers to the period between 2010 and 2015. The participants highlighted characteristics of the food environment, indicating improvements regarding the supply of drinking water and food options, since joining the course. They emphasized the options of feeding in the surrounding area; however, they highlighted that these options are very expensive. The study did not intend to analyze the university food environment, but it presents a brief characterization of the same, regarding the availability, accessibility, variety and cost of food. *Discussion:* Studies show that the university food environment is not yet capable of promoting health in terms of the availability of adequate and healthy food. The university restaurant is considered a potential promoter of access to adequate and healthy food. *Conclusion:* It was possible to perceive the importance that the food environment has in the determination of the feeding

habits of the students, being able to constrain or favor healthy eating practices.

Keywords: Food Habits. Feeding Behavior. Universities.

Resumo

Objetivo: Analisar a percepção dos estudantes de Nutrição sobre o ambiente alimentar em uma instituição de ensino superior do Rio de Janeiro. *Metodologia:* Foi realizado um estudo qualitativo adotando grupos focais, sendo convidados estudantes de 18 a 30 anos dos cursos integral e noturno. Utilizou-se análise temática com categorias analíticas do material empírico: “caracterização do ambiente alimentar universitário”, “o que é ambiente alimentar universitário?”, “potencialidades e constrangimentos do ambiente alimentar universitário” e “o papel da instituição de ensino na promoção de um ambiente alimentar universitário saudável”. *Resultados:* Participaram um total de 15 estudantes de graduação, de ambos os sexos, distribuídos em três grupos focais, com média de idade de 24 anos. A pesquisa refere-se ao período entre 2010 e 2015. Os participantes ressaltaram características do ambiente alimentar, indicando melhorias em relação à oferta de água potável e de opções de alimentação desde seu ingresso. Destacaram as opções de alimentação no entorno, ressaltando, no entanto, que são muito caras. O estudo não pretendeu analisar o ambiente alimentar universitário, mas apresenta uma breve caracterização do mesmo, no que tange à disponibilidade de alimentos, acessibilidade, variedade e custo. *Discussão:* Estudos revelam que o ambiente alimentar universitário ainda não é capaz de promover saúde, no que diz respeito à disponibilidade de alimentos adequados e saudáveis. O restaurante universitário é considerado um potencial promotor do acesso à alimentação adequada e salutar. *Conclusões:* Foi possível perceber a importância que o ambiente alimentar tem na determinação das práticas alimentares dos estudantes, podendo constranger ou favorecer práticas alimentares saudáveis.

Palavras-chave: Hábitos Alimentares. Comportamento Alimentar. Universidades.

Introduction

The relationship between environmental determinants and outcomes in eating practices has been more discussed in the literature in the last decade.¹⁻⁶ Studies have sought to analyze aspects related to the food environment and its influence on food practices, such as accessibility, availability, quality, variety and cost of food.¹⁻⁸ Glanz⁹ stresses that the discussion on food environments in the field of public health is recent in the literature. The author reveals that organizational environments - such as schools, workplaces, universities, hospitals - may play an even more important role in promoting healthy eating practices when compared to regular physical activity practice since, in general, such environments have food services, but spaces for practicing physical activities are not common.

Upon entering university, many students are faced with the need to respond to food demands on their own. The inexperience of thinking about their own diet, associated to lifestyle, cultural, socioeconomic and psychological aspects, as well as academic circumstances, can contribute to inadequate food choices.¹⁰ Often, the university space itself does not provide a supportive eating environment for foods considered more appropriate.¹¹

In Brazil, research on food environments, especially organizational ones (such as university space), are still incipient. In this context, the objective of the present study was to analyze the perception of students of the Nutrition Course on the university food environment of a federal public institution of higher education in the State of Rio de Janeiro.

Methods

The research project was sent to the Research Ethics Committee of the Universidade Federal do Estado do Rio de Janeiro (Federal University of the State of Rio de Janeiro - CAAE: 43417115.6.0000.5285), being approved by the Opinion N° 1.071.973, in the year 2015. A qualitative study was carried out with focus groups. The academic unit locus of the study offers two undergraduate courses in Nutrition, offered in the integral and evening period.

Through the social network, electronic address and posters posted at the institution, all the students of the course, of both genders and between the ages of 18 and 30, were invited to participate. The perspective was to achieve the plurality of focus group composition. In this way, the participation of students of the integral and evening courses was stimulated, due to the hypothesis that they could present different perceptions regarding the university food environment. Likewise, the aim was to encourage the participation of incoming students and also the students who were completing the course. In order to contextualize the students' speech, information was collected on the age, with whom they live (if they live alone, with the family, among others),

activities developed (if they work and study; study and perform internship), course (integral or evening period), year of admission to university and current period of the course. Fieldwork was carried out between May and June 2015.

The realization of the focus groups adopted the guidelines of Neto et al.¹² and Minayo.¹³ According to Minayo,¹³ the focus group values the interaction between the participants and the collective construction of opinions and arguments. The technique was applied through a previously planned script, in a non-directive environment, under the coordination of a moderator capable of getting the participation of all. The script included questions about how participants ate while at university, whether they take food and / or home preparation or buy it at university, whether there are spaces for storing food and eating at the institution, which are the options of establishments that market food and / or preparations, positive and negative points of feeding on *campus*, if there have been changes in the food environment since joining the course, among others.

In addition to the moderator, another team researcher participated in order to make an initial record of the participants' contributions. The contributions were recorded in LG Optimus E989 device and later transcribed for analysis by the researchers, with no identification of any of the students. After the transcription and revision of the material, a thematic analysis was performed according to Bardin,¹⁴ considering analytical categories created from the empirical material, namely: "Characterization of the university food environment"; "What is a university food environment?"; "potentialities and constraints of the university food environment" and "the role of the educational institution in promoting a healthy university food environment".

Results

Three focus groups were held, each lasting one hour, with the participation of five students in each one, of whom 12 were female and 3 were male. Although the groups were held in the afternoon and evening shifts in order to achieve greater adherence, only three students of the evening course participated. However, despite the majority of the students enrolled in the integral course, all of them had already taken disciplines in integral and evening courses, experiencing the possibilities and constraints of feeding in the university space of each shift. The mean age was 24 ± 1.2 years. Only two students were not interns at the moment, which indicates that most of their activities are carried out on the *campuses*. Despite different periods, all of them were already close to completing the Nutrition course, 13 of them having joined the university in 2010. Therefore, the time period of the study refers to the period from 2010 to 2015. Almost half of the students (46.7%) lived with their father and / or mother, 20.0% with other relatives, 13.3% with other students, 13.3% lived alone and 6.7% lived with friends.

The following are the results related to the analytical categories: "Characterization of the

university food environment”; “What is a university food environment?”; “potentialities and constraints of the university food environment” and “the role of the educational institution in promoting a healthy university food environment”.

Brief characterization of the university food environment

It was considered necessary to characterize, even in an incipient way, the food environment to which the students refer. It was not intended to exhaust this characterization, but to offer a subsidy for the interpretation of the results, focusing on the places that are used by students of Nutrition. The characterization of the institutional food environment was carried out based on a previous survey carried out by students of the Nutrition course^a and on the focus groups conducted in this research.

The locus institution of this study is composed of seven *campuses*, located in a dispersed way in the municipality of Rio de Janeiro, three of them very close together. Each *campus* presents distinct characteristics in relation to the university food environment. For the purposes of this study, three specific *campuses* will be described, chosen for being attended by students of Nutrition, and that we will characterize as *campus* A, B and C, so named in order not to favor the identification.

The *campus* A is the space in which the Nutrition student spends most of his/her training. Currently, it has a commercial restaurant with a subsidized price for the academic community, which offers small and large meals (the latter in *self-service* mode). Machines for the sale of industrialized beverages, coffee and cookies are also available. The reprographic service also offers some quick snack options, usually made by the students themselves and made available for sale in this space. The building of the School of Nutrition has a living room for students, in which it is possible to store, heat and eat meals. It is also worth mentioning the proximity of this *campus* to another institution of higher education, which offers establishments for small and large meals, being commonly frequented by students of Nutrition. Although it is not a place where Nutrition students have academic activities, it is worth mentioning the proximity of *campus* A with two others (one in which the School Restaurant was later inaugurated and the other with a *trailer* of snacks). In addition, there are options of commercial points in the outdoor area of the *campuses*, such as shopping malls, convenience stores, among others.

The B *campus* is the place where students spend more time at the start of the course. Currently,

a Survey carried out in the framework of the discussions of CALU – Grupo Colaborativo de Estudos sobre Ambiente Alimentar Universitário (CALU - Collaborative Group on Studies on the Food Environment University), collective created in 2014 and made up of researchers from UFRJ (Fundão and Macacé *Campuses*), UNIRIO, UFF and UERJ. Volunteer students visited the institution's campuses in order to identify main characteristics of the commercial food establishments of each one.

there is a self-service commercial restaurant offering small and large meals, as well as points of sale of sweets, cookies and drinks. This *campus* does not provide a storage location for students who bring home meals. Third-party microwave and refrigerators are used for this purpose. In addition, there is no place to dine. There are shops and restaurants in the surrounding area.

Yet, in the *C campus*, students only attend practical classes and the supervised internship in clinical nutrition. It has a dining room, however this is only allowed for companions, residents and employees. There is a place with a refrigerator where it is possible to store the meal. There is also a microwave that can be used by the student. However, it belongs to another undergraduate course, according to the reports of the focus groups. In the surroundings, there are several types of restaurants, as well as commercial establishments that serve meals, supermarket, snack bars and bakeries.

What is a university food environment?

When questioned about what they understood by the term ‘university food environment’, most students reported the physical availability of food in any space where it is possible to purchase food and / or make meals, being easily accessible from the location of the university, not limited to the university *campus*, as can be seen in the following report.

***What’s around.** We will enjoy what is around us. If you think about the campus of our building, we have only one option, except for the photocopy shop where there are cookies and sweets. But if you cover this [referring to what’s around], then you’ll already have the university next door, which offers more options, or the shopping mall. Other than that, you have to walk a little more, so it ends up leaving the comfortable ray* (Student 7, highlights made by us).

In other words, they identified that the surrounding area composes the university food environment, not just *campuses*. This initial understanding was enriched by the students themselves, who highlighted other factors, such as the ambience of the dining spaces, referring to the lighting, the colors used in the cafeteria, the odors, the space available for meals, the financial cost food and the need of implementing the university restaurant, and the possible interference of the institution’s School of Nutrition.

Potentialities and constraints of the university food environment

The students reported having unhealthy food, in their opinion, especially in small meals, consuming high amounts of industrialized beverages, sweets and cookies, and because of the low supply in the university environment of foods considered healthy, such as fruits.

When asked about factors that constrain opportunities for healthy eating in the university environment, students suggested changes in food and preparation choices, especially in small meals. The proposals include fruit juices, milk beaten with fruit and fruit salads in snacks, as well as the charge for the inauguration of the School Restaurant, which was subsequently definitively inaugurated. The students also pointed out that during the holidays and weekends, when the availability of foods considered healthy is greater, they have the opportunity to make more beneficial choices.

*I also always found it worse in the afternoon (...). If I want to eat a snack, **I'm going to eat a savory snack, or I'm going to eat a savory snack. There is no option**, or I'll have to eat an ice cream or a brownie; I do not have an option (Student 7, highlights made by us).*

The adversities encountered during the evening period were mentioned by the students due to the perception of lack of infrastructure in relation to feeding at the beginning of the course. The sense of lack of support for the evening course in relation to eating possibilities on *campus* was very marked among students. They reported that cookies, coffee and industrialized drinks machines were installed after students' claims, which did not solve the issue from the point of view of the availability of adequate and healthy food. In light of these suggestions, it is perceived that an important element to be improved in this food environment refers to the availability of food, according to the students.

It is worth noting the students' questioning about the schedule of the disciplines offered in the first periods of the course, since they need to move between *campuses* A and B to take classes and sometimes the time for doing so (and also to feed) is very short.

*In the first period, on Mondays, we had a class (...) from 10 a.m. to 12 p.m. on campus A, and a class at 1 p.m. on campus B, and the bus left at 12:20 p.m. from here. And it was not even from here, it left from [the other campus located on the same street as campus A]. That is, there was not enough time. **We had to swallow something**, and there was also the queue to eat, the queue to warm up food in the microwave here, which was only one (Student 5, highlights made by us).*

*(...) I remember that in the first period of the integral period course - I do not know if the schedule is still like this - the classes ended at noon here and at 1 p.m. we had to be on campus B. We had that to move, thus, **we could not have lunch**. So, **every day, in the first period, on Mondays, we had like a snack**; I do not know if the schedule continues like this. Then we asked the teacher to end the class 15 minutes earlier **to have time to eat a snack** and it happens a lot. Sometimes, we arrive and have to eat lunch during class, like buying food in the cafeteria, putting in the little thermic lunchbox and **having lunch in the classroom** (Student 4, highlights made by us).*

As a positive aspect of the university food environment, students reported important changes since they started the course, especially at *campus* A, such as the reopening of the cafeteria in this

place with a commercial restaurant of better quality than the previous one (according to the reports) and that is open during the night, which may benefit the students of the evening course. In the *campus* B, the students reported that there was a cafeteria that provided meals on plates. Currently, it is *self-service*, where students report having greater variety and power of choice. However, on this *campus* the establishments do not remain open on the night shift. On both *campuses* (A and B), many changes were identified by the students themselves, not only in relation to food and meal options, but also on the access to drinking water (more sources of drinking water were made available at the institution). The improvements that have been made to the students' classroom at *campus* A have also been cited, as now there is more equipment to heat meals.

The role of the educational institution in promoting a healthy university food environment

In the opinion of the students, there is a need to approach the Nutrition School to the School Restaurant, although they seem to be unaware that there was already an approach at the time of this research, i.e., a teacher of the Nutrition School who was assigned to act in the management of the Restaurant. From the reports of the interviewees, it is perceived a need of the students in relation to what they consider to be the role of the academic unit in the promotion of a healthy eating environment in the university.

You know, I will compare the Nutrition School to a smoker doctor, while the patient cannot smoke, the doctor cannot smoke. Today, the School works like this. (...) We cannot say that the environment makes people in the Nutrition School, because we do not have an adequate environment to feed ourselves (...). How can I say 'when you are going to have your meal, prefer a quiet environment' if we ourselves do not practice it here at the university? (Student 10, highlights made by us).

(...) Every time I read about a complaint about the university restaurant, I feel ashamed. Because we have a Nutrition School here (Student 2, highlights made by us).

The students also affirm the importance of the School Restaurant as a field of teaching, research and extension projects, highlighting it as a potential field of practice and a place for internship.

(...) It would not be hard to put us there, you know? We do volunteer internship for private restaurants, right? [possibly referring to the compulsory internships] (...) It is free, we do free internship for a private institution, but we do not do it for free to help ours (...) (Student 9, highlights made by us).

Few students reported having eaten in the School Restaurant. One of the possible reasons is that many of them were already in the final periods of the curriculum, attending campus A - near the place where the School Restaurant is allocated - less frequently.

Discussion

For Zuccolotto,² the concept of the food environment involves the dimension of food access, which would include quantity, type, location, accessibility to food trade and the dimension of availability, where the characteristics of the food found in such places are considered, such as the price, the variety and the quality.

To contextualize the food environment and issues affecting food choices, Story et al.¹⁵ constructed a theoretical model that indicates different levels of intervention for public policies, from the individual factors to the macro level. The authors point out that individual factors include knowledge, behaviors, biological and demographic factors, but that, besides these issues, the social, physical and macro environments also influence eating practices. Thus, eating practices do not depend exclusively on individual choices, but are affected by several factors that escape the individual's desire or governability.

Concerning the social environment, the authors¹⁵ indicate that interaction with other people and the community in which they live could affect eating practices in relation to issues, such as social support and established norms, for example. As for the physical environment, the authors cite the various spaces where people feed or purchase food, which, in turn, determine the availability of food. The authors point out that, despite its indirect influence, the environment at the macro level strongly affects what people eat, such as public policies that affect the mode of production, distribution and the price of food.

Swinburn et al.¹⁶ also developed a theoretical model for identifying interventions in the environment, called ANGELO (Analysis Grid for Environments Linked to Obesity), which unfolds the environment into two dimensions according to its size (micro and macro) and types (physical, economic, political and sociocultural). According to the characteristics of the environment, it can be recognized as an obesogenic or leptogenic environment, depending on the factors that influence food consumption and the practice of physical activity.

Some of the factors signaled by students throughout the focus groups in the present study relate to the physical type of the analytical model proposed by the authors,¹⁶ in which they include “what is available” in terms of food, involving not only what is visible, as well as less tangible factors, such as access to information. In this model, the economic type refers to the cost related to food, which is strongly influenced by the cost of the food chain and the national and individual income. As for the political environment, the authors refer to the rules related to diet and physical activity, such as laws, public policies (formal and informal) and institutional rules, such as schools. Finally, the sociocultural environment refers to community and / or social attitudes, beliefs and values related to food and physical activity.

Among the students' speeches obtained in the focus groups of this study, it was possible

to perceive other elements related to the university food environment besides the physical environment, as proposed by the authors. For example, issues related to the high price of food / meals (economic) and the implementation of the university restaurant and the role of the Nutrition School (political). Therefore, although students initially focused on food availability as an element that characterizes the university food environment, they were able to indicate other issues that make up such a conceptual arrangement.

Another important point to be noted is the students' view of their own nutrition when they mostly rated it as unhealthy. This view demonstrates the students' perception of what is considered healthy and unhealthy food, which can be strongly guided by a biomedical perspective on feeding, which Pollan¹⁷ would characterize by the term "nutritionism", that is, a reductionist approach to feeding focusing only on the caloric and nutritional content of food. This view polarizes food into healthy (and therefore allowed) foods, and unhealthy foods (which would be banned). Ratified by a still hegemonic strand of Nutrition science, this view may be even more present among students in this area of knowledge.

However, it should be pointed out that it was not the purpose of this study to deepen this discussion among students. In this sense, discussing the meanings of "healthy eating" and "unhealthy eating", in the students' view from the focus groups carried out in this study, lacks elements for us to determine the influence of biomedical vision. They may have adopted other criteria to classify their own food as unhealthy, such as the fact that the food mentioned by them are often ultraprocessed, providing a negative impact not only on human health but also on the environment.¹⁸

It is also interesting to point out the lack of time, indicated by the students, to feed themselves. Feitosa et al.¹⁹ analyzed the eating habits of 718 students of different undergraduate courses at the Universidade Federal de Sergipe (Federal University of Sergipe). Among other issues, the results indicated a common habit among women to exchange meals for snacks, according to the students, justified by the university routine, which would affect the time to feed properly.¹⁹ Fonseca²⁰ comments that the rhythm of life has changed and that there has been a reordering of the time destined to the different activities, among them, feeding, cooking and commensality. This question appears clearly in the highlighted excerpts in which students seem to regard food as secondary or, given the more "urgent" commitments and difficulties imposed by the food environment ("queue to eat", "queue to warm up in microwave"), it can be substituted ("swallowing something", "every day in the first period, on Monday, it was like a snack") or adapted ("to put it in the thermic lunchbox and have lunch in the classroom").

Fitzgerald and Spaccarotella²¹ discuss the barriers of adopting a healthy lifestyle involving eating and regular physical activity. They used an ecological model to present these obstacles,

dividing them at different levels, such as intrapersonal, interpersonal, community / institutional and macro / public policies. In the intrapersonal, the model indicates the preferences, perceptions, motivations, knowledge, socioeconomic limitations, among other factors. At the interpersonal level, we considered social support, cultural issues, and availability of food in the home, among others. In relation to the community / institutional plan, the authors indicated, for example, the food environment at school, in the work spaces, socioeconomic characteristics, and portion size of food / preparations. Finally, at the macro level, they discussed public policies related to feeding, food prices, among others. Thus, the authors²¹ warn that eating choices and regular practice of physical activity do not depend solely on personal factors, such as desire and motivation.

Considering the different barriers pointed out by the authors,²¹ the promotion of healthy eating should be carried out by integrated actions of encouragement, support, protection and monitoring. The first ones (which are usually targeted by health professionals) are those that seek to stimulate the adoption of healthy practices by the population. However, the importance of articulating these measures of support and protection to these actions has been increasingly discussed in the academic literature, considering that food practices are influenced by multiple determinants other than exclusively knowledge about the nutritional value of food. In this sense, support measures are those involving actions that seek to facilitate healthy choices in already motivated individuals.²² For example, considering the object of this study, i.e., the university food environment, a measure of support could be the provision of healthy food and meals in commercial and university restaurants, or the provision of infrastructure for storage and heating of meals brought home by the students.

Many research involving university students is limited to assessing their eating and physical activity practice habits, body composition, health status, among other aspects.^{10,19,23-25} Therefore, no studies were found in the academic literature that sought to identify students' perceptions regarding the university food environment. However, a study carried out by Alves & Boog,²⁶ with the intention of analyzing subjective aspects of the feeding of university students residing in a student residence, brings important contributions to this discussion. For the authors, the students showed concern about becoming a provider, that is, about assuming certain responsibilities in self-care, such as preparing their own food. Home food, prepared mainly by the mother, is regarded as a healthy eating reference. Among the difficulties cited in the study, to be able to eat well, participants listed time, money, lack of knowledge about how to prepare food, and difficulty accessing products. The university restaurant was cited as essential so that they could feed themselves properly.

Pulz⁸ analyzed the university food environment of a public university in the south of Brazil. Differently from the university food environment of the snack bars, characterized by the students participating in the present study, the author observed a wide variety of foods and beverages. Similarly to that reported by students in the focus groups, none of the coffee shops marketed fruit *in natura*. However, the author states that half of the restaurants analyzed offered fruit *in natura*

as dessert for free. In our investigation, this aspect was presented as one of the biggest complaints made by the students in the focus groups, since they reported lacking healthier options, such as juices, milk beaten with fruits and fruits *in natura* or fruit salad.

The supply of separately paid sweets and fruit *in natura* at no additional cost is seen by Pulz⁸ as a way of stimulating fruit consumption. The author believes that the lack of fruits *in natura* in the snack bars is a limiting factor to the fruit stimulation and intake in the university environment. As has been said, many university students spend their days in this environment, and the lack of healthier food supply makes it difficult for these individuals to meet the World Health Organization's recommendations for consumption. In addition, these students may end up opting for less healthy choices, as healthier choices are not available.

The *Dietary Guidelines for the Brazilian Population*,¹⁸ published in 2014, addresses the importance of the consumption of food *in natura* and minimally processed food, and the reduction of ultraprocessed food intake as an important step in delivering adequate and healthy feeding. The lack of natural fruit or pulp juices, and the wide variety of sugary beverages such as soft drinks, canned juices and ready-made sodas being sold in the cafeterias at the *campuses* frequented by Nutrition students, were indicated as one of the negative points resulting from the Pulz study.⁸

One of the negative points cited by students in the focus groups is the price of meals and how expensive it is to eat outside home, especially considering the area surrounding the educational institution where this study was conducted. One of the food options cited by students is a *shopping mall*, which is located just minutes from some *campuses*.

In the view of Pulz,⁸ the major influence of the environment on food preferences is due to the great limitation in terms of availability and access to healthy food and affordable quality options, because when the food environment is considered improper, it can discourage the consumption of fruits and vegetables and increase the incentive to consume less healthy options. Pulz⁸ related that foods with higher food and nutritional quality had higher prices when compared to lower quality options. The results found by the author in her study suggest that the quality of nutrition of university students may be compromised, since it was characterized a food environment with limitations, such as low supply of healthier products and, among students with financial limitations, this environment further reduced the options of choice, since products of better nutritional quality had higher prices.

The same situation was characterized by the students of Nutrition heard in this study. According to their reports, the food environments frequented by them do not offer healthier alternatives, variety and low-cost food. For Glanz,⁷ price and availability are the main factors of the food environment, and cost has been identified as the second main decision factor for food choices. Batalha et al.²⁷ note that food prices and socioeconomic status also influence purchasing decisions. However, these factors should not be considered as isolated variables for an interpretation of

consumer behavior.

Conclusion

As limitations of the present study, it should be emphasized that there was no participation of incoming students as desired. In addition, the expectation was to reach a larger number of students in the focus groups. Although the students' adherence to this research was unsatisfactory, it was not considered insufficient, since the saturation of contributions throughout the focus groups was perceived.

Although it was not the objective of this study to analyze the relationship between the university food environment and the students' eating habits, it is important to highlight that, after this research, the university School Restaurant was inaugurated, with nutritionists who have been hired to follow the routine of the establishment, and the participation of teachers in the management group, in addition to other sectors involved.

From the characterization of Nutrition students, it is possible to identify several barriers that the university food environment of the *campuses* that these students attend imposes on their possibility of feeding properly, with respect to accessibility, availability, quality, variety, adequate time and financial cost of food and meals. The students reported that the unavailability of healthy options for consumption in the university environment hinders the use of these foods. Although the present study did not evaluate the food consumption of students, the reports indicated a worrying situation regarding the consumption of processed beverages, sweets and cookies, for example. These poor dietary choices may be related to the development of some diseases, such as obesity, diabetes mellitus, systemic arterial hypertension and even cancer.

Finally, a healthy university food environment is essential to guarantee the human right to adequate food by this population group, in order to achieve Food and Nutrition Security. Although changes have been reported in this food environment throughout the course, with significant improvements, it is understood that changes are still necessary, adding actions to encourage, support, protect and monitor healthy and adequate nutrition in the university space.

Collaborators

Oliveira MC and Santos CRB participated in all stages of the work, from the design of the study to the analysis and dissemination of the results, including the preparation of the manuscript. do Nascimento HS and dos Santos IPG participated in the field work, as well as the analysis of the results and preparation of the manuscript.

Conflict of interest: The authors declare that there are no conflicts of interest.

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