

Education, satisfaction and professional prospects of nutrition graduates of a federal university in the Brazilian northeast

Formação, satisfação e perspectivas profissionais de egressos nutricionistas de uma universidade federal do nordeste brasileiro

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Abstract

Objectives: To identify the degree of satisfaction of Nutrition graduates with their program and their profession. **Methodology:** Cross-sectional, descriptive research with a quantitative approach, whose data collection was based on the application of an online questionnaire. Categorical data were presented as absolute and relative frequencies; and the continuums, as average and standard deviation. **Results and discussion:** 57.3% (n = 129) of the total of graduates participated in the study since the opening of the course (2007). The field of Nutrition most cited by the graduates was Clinical Nutrition (41.9%), and 29.2% worked in their preferred field, with 41.5% of them in Clinical Nutrition. Only 3.1% dropped out; 29.1% reported having an employment relationship with the private sector; 71.7% work in the same Brazilian state where they received their degree and 60.2% are dissatisfied with their wages. The course was evaluated positively, as was teachers' qualification. As regards professional prospects, the interviewees expressed an interest in becoming teachers themselves and improving their knowledge with postgraduate studies. **Conclusions:** This study offered insights into the difficulties faced by the graduates regarding the academic program and the profession, such as the need for more practical classes and low pay and excessive work hours. Such awareness could guide future actions and ensure the quality of the undergraduate program.

Keywords: Professional Education. Work Conditions. Higher Education. Nutrition. Field of work.

Resumo

Objetivos: Identificar o grau de satisfação profissional e de formação dos egressos de curso de graduação em Nutrição. *Metodologia:* Pesquisa transversal, descritiva, de abordagem quantitativa, com coleta de dados baseada em aplicação de questionário *on-line*. Os dados categóricos foram apresentados em frequência absoluta e relativa; e os contínuos, em média e desvio padrão. *Resultados e discussão:* Participaram da pesquisa 57,3% (n=129) do total de egressos desde a abertura do curso (2007). A área da Nutrição de maior preferência citada pelos egressos foi a Clínica (41,9%), e 29,2% trabalham na área de preferência, sendo que 41,5% em Nutrição Clínica. Apenas 3,1% abandonaram a profissão; 29,1% relataram ter vínculo empregatício com o setor privado; 71,7% atuam no mesmo estado de formação e 60,2% demonstraram estar insatisfeitos com a remuneração. O curso foi avaliado de forma bastante positiva, assim como a qualificação dos docentes; com relação às perspectivas profissionais, expressaram interesse em ingressar na docência e aprimorar seus conhecimentos com especialização. *Conclusões:* A partir deste estudo, foi possível conhecer as dificuldades dos egressos quanto ao curso e à profissão, como a necessidade de mais aulas práticas e a baixa remuneração e carga horária excessiva de trabalho, o que poderá nortear ações futuras e garantir a qualidade do curso.

Palavras-chave: Formação Profissional. Condições de Trabalho. Educação Superior. Nutrição. Área de Atuação Profissional.

Introduction

In 1926, Pedro Escudero founded the first school of Nutrition in Latin America, the National Institute of Nutrition. In Brazil, the first undergraduate program in Nutrition was created only in 1939, at the Faculdade de Saúde Pública (*Public Health College*) of the Federal University of São Paulo. However, it only in 1967 that the profession of nutritionist was regulated by Law no. 5,276, on April 24th.^{1, 2}

Ever since, nutritionists have been gaining ground and expanding their work opportunities. The labor market has demanded more from these professionals in various aspects: creativity, initiative and productivity. On the other hand, the number of undergraduate courses in Nutrition has been growing in Brazil in recent decades: thousands of students receive their degrees, annually.³⁻⁵

According to Calças et al.,⁶ Nutrition education is supposed to raise graduates' awareness of their social role and help them become agents of transformation in society. This view is in line with that of Pinheiro et al.,⁷ who claim that the main role of a nutritionist is to be a health educator.

The analysis of Toledo⁸ shows that the mission of nutritionists has changed over the years, because the lifestyle of the population has also been changing the profile of the most prevalent diseases as a result. Thus, the role of nutritionists is expected to adapt to the needs of the population, always in favor of public health. Other studies have highlighted the role of nutritionists as that of encouraging healthy eating habits and practices, as well as protecting and ensuring everyone's right to adequate and safe food intake.^{9,10}

In order for professionals to work efficiently, some requirements are needed; the major one is good education. In Brazil, there are already 431 undergraduate courses in Nutrition, in public institutions (73), private universities (346) and special institutions (12). Currently, there are 111,113 registered nutritionists in ten regional professional boards in the country. Because of such expansion, there is greater demand for monitoring teaching quality.^{11,12}

Since the recognition of undergraduate programs in Nutrition until recent years, some studies have reported a lack of integration between theory and practice in nutrition education. Therefore, the search for integrated and articulated teaching during the whole program remains as a challenge to various undergraduate programs.¹³

According to Brazil's Federal Board of Nutritionists (CFN), there are 847 nutritionists registered in the state of Sergipe, members of the Regional Board of Nutritionists of the 5th Region (CRN-5) as of March 2016.^{12,14} However, there are no records of studies on the situation of these professionals in that state. Actually, all over Brazil, there is still a large gap of information about nutrition education. Current studies have focused on in the southern and southeastern regions. There is only one study in the Northeast region and another in the Midwest.

Therefore, describing Nutrition education and the satisfaction of nutritionists is of great relevance to outline the major national indicators, because these professionals undergo changes on a regular basis and enter new and different labor markets.^{3,15,16} Their aim is to work in favor of population health, because there are increasingly prevalent chronic non-communicable diseases, and eating habits play an important role in modifiable risk factors.

Thus, because there is a lack of data records about the theme, the objective of this study was to identify the degree of satisfaction of Nutrition graduates about their career and the degree program they completed in a federal university in Brazil's northeast.

Method

This is a cross-sectional, descriptive study, structured on the basis of a methodology with a quantitative approach. Data collection was based on application of an online questionnaire.

The study population was comprised of graduates of the undergraduate program in nutrition at the Federal University of Sergipe (UFS), São Cristóvão Campus. This was the only inclusion criterion for the sample. All graduates from the above-mentioned university were invited to participate, in a total of 225 nutritionists, according to the official records provided by UFS.¹⁷

The questionnaire was made available **online** by the tool *Survey Monkey*. First, it had been sent as a pilot to volunteers who had graduated in Nutrition at another university in the state of Sergipe in order to check for wording, clarity and length needed for completion. Data collection was carried out between November 2016 and January 2017.

On the basis of registration information provided by the university, the following information was collected: full name, enrollment number and year of course entry and completion of all graduates. The invitation with the **link to** the questionnaire was sent to their e-mails, and it was also shared on social media with a view to greater adherence. Before completing the questionnaire, the participants had access to a Free and Informed Consent Form, which they had to sign in order to confirm their voluntary participation.

The online questionnaire was designed after adaptations of previous research reports.^{9,16,18} It consisted of 30 questions: three open questions and 27 closed ones. These three questions were asked on a Likert scale of satisfaction (1 very dissatisfied, 2 dissatisfied, 3 indifferent, 4 satisfied, 5 very satisfied), with the option of answering “not applicable”, when necessary.¹⁹

The data collection instrument was organized into three large blocks: (1) personal data of graduates (name, age and sex); (2) Education (year of entry and completion of the course, preferred field of study, participation in extracurricular activities during the program, further academic education and issues about the nutrition program with a scale of overall satisfaction and some variables such as the adequacy of the curriculum/courses, skills and competences in different fields); and (3) current professional practice (workplace, employment, working time, workload, interest in other fields, scale of professional satisfaction, time and difficulty of labor market entry and membership of professional associations). The other three open questions allowed opinions and suggestions about their academic education and professional prospects.

The results were processed in the tool *Survey Monkey* and analyzed descriptively by means of absolute and relative frequencies and means, standard deviations and minimum and maximum values, with the help of the software *Statistical Package for Social Sciences (SPSS)*, version 17.0 for Windows.²⁰

The open answers were analyzed in a quali-quantitative manner, according to the proposal of Toledo.⁸ This moment was divided into three stages: (1) interpretation of content; (2) accounting and frequency, design of theme categories; and (3) further association with year the graduates started the program.

The analyses took into account both the graduates who reported practicing the profession of nutritionist and those who reported to have been working in another field. The questionnaires were excluded from analysis when less than 50% of the questions had been answered, when they were duplicates of a previously answered questionnaire and when the respondents were still undergraduates.

The research project was approved by the Research Ethics Committee (REC) of UFS, in accordance with Resolution n° 506/2016 on research involving human beings, under Technical Opinion No. 1,807.834.

Results and Discussion

Characterization of graduates

Out of the total number of graduates (n=225), 129 answered the questionnaire in full; this corresponds to 57.3% of adherence to the survey. Females (89.8%) outnumbered males. Students ranged in age from 24 to 26 years (47.3%). The majority of graduates (50.4%) completed the program in five years, surpassing the estimated time in one year (Table 1). It is important to highlight that, in recent years, Brazil has been undergoing major political crises, which resulted in several demonstrations, e.g., some strikes in universities. As a result, some school periods were irregular, which can justify the extension of the deadline for completion of the course.

Table 1. Characteristics of Nutrition graduates in Brazil's Northeast region, 2016 (n= 129).

Profile of undergraduates			
	X ±SD	Minimum	Maximum
Age (years)	25,6 ± 2.1	21	33
Year when course started		n (%)	
2007		17 (13.2)	
2008		19 (14.7)	
2009		24 (18.6)	
2010		27 (20.9)	
2011		25 (19.4)	
2012		17 (13.2)	
Current professional practice			
Clinical Nutrition		54 (41.5)	
Student		40 (30.0)	
Collective Feeding		19 (14.6)	
Teaching		18 (13.9)	
Collective Health		13 (10.0)	
Sports nutrition		09 (6.9)	
Unemployed		08 (6.2)	
Abandoned the profession		04 (3.1)	
Food industry		02 (1.5)	
Marketing in food and Nutrition		01 (0.8)	

n: sample size; X±SD: Mean±Standard Deviation; n(%): Relative and absolute frequency

Attending the undergraduate program for a longer time favors students' engagement in extension activities. During the Nutrition program, 94.5% of the students claimed to have participated in extracurricular activities such as monitoring, novice researcher program or extension projects. Of these, the majority (45.8%) completed the course in five years and 66.4% reported having found employment between one to six months after graduation.

In addition, the students claimed that completing the program in four years does not allow them to fully participate in such activities as they wish, because they have to attend many courses per semester.

Previous studies^{6,7,21,22} have shown that extension activities are interesting for all undergraduate students, because that is the moment when they can combine theory and practice and build further knowledge, thus expanding and consolidating their learning. Pinheiro et al.⁷ affirm that these activities are necessary and should be part of the process of teaching so that the curriculum could be more flexible in order to provide the connection between extension and learning.

The respondents' answers showed that 41.5% responded that they are currently working in Clinical Nutrition; 30.0% are studying (postgraduate certificate/preparation courses for civil service exams), 6.2% are unemployed and only 3.1% abandoned the profession (Table 1). The predominance of work in the clinical field was corroborated by the National Board of Nutrition in a study²³ conducted in 2006, with a sample of 2,492 nutritionists throughout Brazil. The research showed that 40.0% of the respondents worked in the area of Clinical Nutrition. By contrast, the study of Sabba et al.,²⁴ in São Paulo, pointed out that the field of Catering was the one which attracted the largest number of graduates that participated in that study (63.6%), followed by Clinical

Nutrition (29.5%). Because the site of study (São Paulo) is a metropolis with many companies and industries, there are various food and nutrition facilities which hire nutritionists.

Rocha & Nozaki⁵ showed that 20.0% of Nutrition graduates of a state in the Midwest Region of Brazil were unemployed. According to Feix&Poll,¹⁶ in a municipality in the South region, 6.5% of them were unemployed, 8.4% abandoned the profession and 1.8% of them had been studying further. In the present study, the graduates from a program in the Northeast Region abandoned the profession to a lesser degree and took a higher number of further education courses; 72.2% enrolled in a graduate program (47.6% in a postgraduate certificate course, 26.2% in a master's degree, 11.9% in a residency program and 6.4% in an academic doctorate). Only 20.6% had not enrolled in a postgraduate program yet, but they intend to do so in the future, and 7.1% did not intend to study further as they reported having already abandoned the profession, or they expressed their wish to change fields of work.

It should be emphasized that the majority who reported being unemployed (21.7%) was part of the last class of graduates (May 2016). This may account for the fact that they had not had enough time to enter the labor market. Another situation that has been changing in recent years is an increase in the number of nutritionists because new undergraduate programs have been created, thus offering a greater supply of professionals in the labor market.

The undergraduates reported that their favorite field was Clinical Nutrition (41.9%), followed by Collective Health (37.7%), Teaching (32.3%), Sports Nutrition (19.2%), **Marketing** in the field of Food and Nutrition (9.2%), Catering (8.5%) and Food Industry (7.7%). It was found that 29.2% of the participants work in their preferred field; 68.8% of those who work in Collective Health said that it is their preferred field while Clinical Nutrition is the preferred field of 38.9% of those who work in it. There is a gap in the literature about the assessment of preferred fields of Nutrition graduates, but it is an important issue for analysis to gain further insights about professional satisfaction and productivity at work.

Most of the participants reported being employed in the private sector (29.1%), employed in the public sector (25.2%) or self-employed (22.8%), as shown in Table 2. These findings differ from those of Dalla-Lana⁹ in Porto Alegre (RS), whose study found that 43.0% of Nutrition graduates were civil servants; 28.0% were self-employed and 17.0% worked in the private sector. The difference in the number of available positions in civil service between the Southern and Northeastern regions of Brazil possibly justify the different results.

As for length of employment, 46.5% of the graduates who entered the labor market reported that they had been currently working for one year at most; 22.9%, between two to three years; and 10.3% for over four years. Weekly workload is 40 hours for 20.5% of them (Table 2). Of professionals with four to six years of employment, 18.2% are civil servants while most (87.1%) of those with up to three years of employment are self-employed, which is indicative that the former have greater financial stability.

Table 2. Professional profile of Nutrition graduates in Brazil's Northeast, region 2016 (n=127).

	n	%
<i>Employment relationship</i>		
Private sector	37	29.1
Public sector	32	25.2
Self-employed	29	22.8
Not applicable	27	21.3
Other	19	15.0
<i>Time in the current employment</i>		
Up to 1 year	59	46.5
2 to 3 years	29	22.9
> 4 years	13	10.3
Not applicable	26	20.5
<i>Weekly workload</i>		
20h	15	11.8
30h	17	13.4
40h	26	20.5
44h	13	10.2
Not applicable	37	29.1
Other workload	19	15.0
<i>Workplace</i>		
Aracaju	60	47.4
Other	45	35.4
Not applicable	22	17.3

n: sample size; X±SD; n(%): relative and absolute frequency

The results for workload were corroborated by Rocha & Nozaki⁵, whose study showed that 49.6% of graduates work between 30 to 40 hours per week. Letro & Jorge⁴ reinforced that 30.0% of them have a workload over 40 hours a week.

Most graduates (71.7%) work in their home state; 50.4% of whom in the capital city. Similar results were found in other studies: according to Alves et al.,¹⁵ this is justified by the fact that the capital city is a region that concentrates the major companies and institutions, hence they offer a higher chance of employment. The Federal Board of Nutritionists (CFN)²³ has reported that 66.7% of nutritionists work in their home town. These data are in agreement with the present study, because most nutritionists (83.3%) in this research are affiliated to the Regional Board of Nutrition of the 5th Region (CRN-5), which covers the states of Sergipe and Bahia.

Entry of nutritionists in the labor market can be considered to be quick, because 19.8% were hired immediately, as a result of previous internship or interview/recruitment, while 46.0% of the graduates were employed between one month and six months after graduation. These results are not very different from the reality found in the Southeast Region. Sabba et al.,²⁴ in São Paulo, showed that 69.0% of graduates reported not having had difficulty in finding their first job. Letro & Jorge⁴ stated that the labor market is in search of recent Nutrition graduates.

Even though labor market entry is quick, there are a few obstacles and difficulties. According to the professionals interviewed in the present study, the main ones are low wages (46.0%), followed by few opportunities in the job market (46%). They also highlighted few civil service recruitment opportunities and/or vacancies (46.0%) and the requirement of professional experience (31.8%). Only 13.5% of them reported not having faced difficulties. These results are similar to those of a study conducted by Feix & Poll⁶ in the Southern Region..

Satisfaction with undergraduate program and professional satisfaction

Overall, the Nutrition undergraduate program was positively assessed in the present study by the undergraduates. It was rated with four points as the more frequent score (58.7%) on the five-point Likert scale.

Teaching quality was scored with 5 points by 61.9% of all the graduates who were satisfied and very satisfied with it (scores 4 and 5). On the other hand, the graduates showed lower satisfaction (40.5%) with respect to adequate physical structure; this was the same frequency between groups that were dissatisfied and satisfied (Table 3). It should be noted that this nutrition undergraduate program was the last one to be created in the Northeast Region. It was launched in 2007, and the physical structure of laboratories was completed recently, in 2015, a fact that may explain that assessment.

Table 3. Evaluation of the factors relating to the training and professional satisfaction of graduates of a course of nutrition in Northeastern Brazil, 2016.

Professional qualification (n=126)	Unsatisfied (%)	Unaffected (%)	Satisfied (%)
Adequacy of curriculum / courses	15.9	7.9	76.2
Intellectually challenging / stimulating environment	7.1	17.5	75.4
Adequate physical structure (e.g. labs and classrooms)	40.5	19.0	40.5
Opportunity for active learning	10.3	12.7	77.0
Oral and written communication skills	6.3	8.7	84.9
Professional ethics and social responsibility	3.2	6.3	90.5
Teachers' qualifications	2.4	1.6	96.0
Professional satisfaction (n=128) ¹			
Salary	60.2	9.4	21.9
Prestige	30.5	24.2	37.5
Work relationships	9.4	18.0	60.9
Opportunities for growth	27.3	19.5	45.3
Autonomy	15.6	19.5	58.6
Professional satisfaction	26.6	21.9	46.9
Work environment/tools	24.2	16.4	49.2
Social relevance of work	11.7	14.1	63.3
Workload	35.2	21.1	32.0
Opportunities for professional development	23.4	21.9	47.7
Opportunities to use creativity	10.9	15.6	65.6
Opportunities to learn new contents	11.7	9.4	69.5

n: sample size; (%): relative frequency

¹The answers shown in the table do not refer to the professionals that are not working (Option 6 - "Not applicable").

As regards professional satisfaction, the items wages and workload were the major reasons for dissatisfaction (60.2% and 35.2%, respectively).

A similar result was found by Rock & Nozaki⁵ in a study conducted with students who are dissatisfied with the profession because of low offer of employment and fair wages. For Rodrigues,²⁵ the “professional fulfillment is related financial accomplishment” (p. 22) [our translation].

Unfortunately, these dissatisfactions are common in most fields of nutrition. The wage floor for nutritionists is considered to be low in comparison with that of other health professionals, hence it is a reason for them to wish to transition from Nutrition to a different field of work, according to the study of Rodrigues et al.³ Some authors reported that these factors are due to the fact that the profession is not appreciated and acknowledged enough.^{3,5,21}

In order to change this situation, nutritionists have to request that the representatives of this profession should take action to improve working conditions as well as provide effective supervision. Many companies try to deceive nutritionists by reducing their workload and offering unfair wages. Because there are no better employment opportunities in some locations, many nutritionists accept such conditions.

Although approximately 47.0% of the graduates reported that they were satisfied and very satisfied about professional fulfillment, it is worth of notice that 22.0% of them are indifferent to this assessment.

The other variables for professional satisfaction were more often rated with satisfaction on the scale (4 points). This indicates that, for these respondents, the field of nutrition promotes creativity and autonomy, as well as favors new learning opportunities and professional development; moreover, it is considered to be a socially relevant field.

Graduates' evaluation of the program and professional prospects

In the analysis of the open questions, which addressed proposals for improvement of the program as well as professional prospects, the opinions of the graduates could be looked into in greater depth.

As perceived by 86.4% of the participants, the aspects that can be improved in this undergraduate course in nutrition are: a higher number of practical classes (45.4%), improvement of class contents (18.5%), physical structure/laboratories (15.7%), longer duration of the course (12.0%) and improvements in the curriculum (13.9%).

The need for more practical lessons in the course can be evidenced by the report of a graduate:

Students should have more practical classes. Becoming acquainted with the basic areas of knowledge together with theories, as occurs in dentistry or medicine, for example. [...] real interaction with people

is very different from practical classes with on fictitious patients or occasional meetings. If students only experience real situations in mandatory internships, they are likely to feel insecure when they attempt to enter the labor market. (E18).

As mentioned above, practical classes are important because they can enhance learning and applicability of class contents in professional life. Some universities use the **Problem-Based Learning** (PBL) method, in which real/simulated situations are developed so that students can practice the contents studied recently, thereby developing skills and competences for their professional life. However, for a transition from the conventional method of teaching to PBL, there are some institutional and bureaucratic barriers, and various adaptations are necessary, e.g. practice fields have to be opened. Anyway, a balance can be struck by using practical classes more often, thus fostering changes in education.^{6,21,22}

In general, most teachers resort to traditional teaching and explain the class contents in a very systematic manner. They do not always use technological tools or open discussions on controversial issues of daily life that could help disseminate information. The Nutrition program should be planned so as to allow graduates to work in society, and play their social role, based on interpersonal relationships and knowledge^{6,21,26,27} which calls for debate on themes of social and anthropological issues, for more effective professional performance.

In order to educate professionals so that they act in an interdisciplinary mode in multidisciplinary teams, a new teaching-learning approach has to be proposed. It is the only path that would allow new pedagogical projects, new conditions and perceptions. According to Brazil's National Curriculum Guidelines, nutritionists are health professionals with generalist, humanistic and critical education, guided by ethical principles and reflection about the reality of the economic, political, social and cultural development of communities.

In this way, Nutrition education is aimed at enabling the practice of skills and general competencies as regards health care, decision making, communication, administration, management and continuing education.^{28,29} However, overcoming the traditional model of teaching-learning in higher education is still a challenge, because it has to be dehierarchized, less coercive (especially as regards assessments), and more participatory.

In the opinion of some students, the program should last longer, i.e., for five years (12.0%). This way, the courses could be a better distribution in the curriculum and extracurricular activities could be optimized; consequently, the course would be optimized as well, according to the participants.

The structural difficulties mentioned by 15.7% of the students were related to the lack of suitable laboratories. In this respect, Luz et al.²¹ claimed that the increase in the number of vacancies in public universities on the part of the government, coupled with a reduction in the

financial resources, have resulted in a poor offer of infrastructure and materials to teachers. It is known that in order for students to receive professional education which can develop their skills so that they can perform their duties effectively, universities are supposed to provide appropriate materials, equipment and physical structure.

As regards professional perspectives, the majority of respondents expressed an interest in becoming teachers and pursuing postgraduate degrees, thus receiving professional appreciation and recognition, with better wages, more employment opportunities and adequate workload. Also, they reported their intention to provide a better quality of life to patients.

In general, it is remarkable that the graduates of this study showed that they have a positive outlook on the profession. It should be emphasized that the fact that many of them wish to study further will result in more qualified performance, thus improving the performance and the visibility of the profession.

The major limitation of this study was the data collection period, performed at the end of the year, in the midst of the holidays and season's celebrations. Another reason that can explain the adherence to the study is that many electronic addresses were outdated, a factor that was offset by sharing the invitation to the research on social media.

Conclusion

It was noted that, in general, the Nutrition program was positively evaluated by the undergraduates, but that there are points that need improvements, e.g., more practical lessons and improvement of course contents. For this goal to be achieved, the managers of the program and the university have to make the adaptations which prospective nutritionists will need in the labor market to take future actions. Encouraging critical thinking is a mutual responsibility between students and teachers, with a view to fostering education that has the greatest potential to help professionals be prepared for the labor market, capable of being agents of social transformation.

Differences were identified between the results found in the present study and the ones conducted in the Southeast region, as regards difficulties in entering the labor market. By comparison, it was found that professional dissatisfaction, combined with low wages and high workload, were quite similar to the results found in other regions and states. To overcome these challenges, more comprehensive measures are required with respect to curriculum reform and changes to the traditional model of teaching and learning.

A continuous analysis of nutritionists is extremely important, because this profession has been growing and gaining ground in the labor market. The proposals and suggestions for improvement of the program were sent to the team responsible for redesigning academic education, thus fulfilling the true purpose of scientific research.

Contributors

Souza JCN participated in the conception, design, collection and analysis of data and drafting of the article; Fagundes A participated in the conception, design, data analysis and revision of the manuscript; da Sila DG participated in the conception, design, critical analysis of research and revision of the manuscript; Barbosa KBF participated in the critical analysis of research and revision of the manuscript.

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