

# The professional role of nutritionists in the context of sustainability

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## Abstract

The concept of sustainability can be defined as a balance that seeks to meet present needs without compromising those of future generations. The concept is based on three dimensions: economic, environmental and social, which also underlie the concept of food and nutrition security. Several authors point out the difficulties of ensuring both food and nutrition security and sustainability, but consider both as potential challenges. The difficulties are related to the current food system and the hegemonic model of economic and production development. Keeping this in view, clarifying the roles and contributions of nutritionists to achieve sustainability by investigating the concepts, valuation, applicability and perceived difficulties on the subject allows to increase the role of these professionals in promoting a future of social, environmental and economic quality. Therefore, the aim of this study is to characterize the professional performance of the nutritionist concerning aspects of the food system and sustainability. This is a descriptive and cross-sectional study, using quantitative approach, and was conducted from March 2011 to June 2012, when 192 nutritionists throughout Brazil responded to the online questionnaire. The results indicate that the professional service of nutritionists focused on sustainability, although considered important, is poorly developed, indicating the need for changes in training and professional expertise, so that they can play a key role in achieving sustainability.

**Keywords:** Nutritionist. Sustainability. Nutrition and Sustainability. Sustainable Development. Food and Nutrition Security.

## Introduction

The importance and urgency of discussions on sustainability are supported by the evidences of limitations of the conventional economic and productive models. According to Nascimento,<sup>1</sup> “the production and consumption pattern that has been increasing worldwide, especially in the past decades, cannot endure”. Evidences of the adverse effects caused by man on the environment and ecosystems are of great concern and, decades ago, prompted the discussions on the need for a sustainable development model. What can be seen are few advances in terms of results in the period that started at the Conference held in Rio de Janeiro in 1992 to the present days. The proposals of the Agenda 21 were accomplished at a little extent or not accomplished at all<sup>2</sup>, and the problems to be resolved remain the same, but in larger proportions.<sup>3</sup>

The “sustainability” concept started to be outlined in 1972 during the United Nations Conference on Human Environment held in Stockholm and was based on the principle that the use of natural resources to meet current needs should not compromise the satisfaction of the needs of future generations. The “sustainable development” concept arose in 1983 in the midst of discussions of the World Commission on Environment and Development and became official in 1987 with the publication of the *Our Common Future* report and was defined as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.<sup>4</sup> According to the Commission, the concept of sustainable development should be the basis for public policies so that the goals of the economic and social development are defined in terms of sustainability.<sup>5</sup>

It can be seen that sustainable development is based on three dimensions: economic, environmental and social,<sup>5</sup> which also support the concept of “sustainability” and “food and nutrition security” (FNS).<sup>6</sup> For Maluf,<sup>6</sup> food and nutrition security does not only depend on the existence of a food system that ensures production, distribution and consumption of foods in suitable amounts and quality, but which also does not compromise the future capacity of production, distribution and consumption and the environmental conditions that are essential to life. Thus, sustainability has been officially included in the concepts of FNS, built in complexity in 2006. According to Law 11.346 of September 15, 2006, which created the National System for Food and Nutrition Security (NSFNS),<sup>7</sup> **food and nutrition security “is the accomplishment of everyone’s right to regular and permanent access to quality foods in sufficient amounts without compromising the access to other fundamental needs, having as basic guidelines health-promoting food practices that respect the cultural diversity and are environmentally, economically and socially sustainable”**.

The food system is defined as a chain of activities that can be divided into five stages: production, processing, distribution, consumption and wastes disposal. Production consists of foods cultivation and animals raising; processing refers to the process of transformation of foods into products; distribution deals with foods storage and transportation from the production sites to the marketplaces; consumption is the stage in which food is purchased, used and consumed; and, finally, wastes disposal refers to the final discard of foods and their byproducts.<sup>8,9</sup>

It has become increasingly clear that in global terms such system is environmentally unsustainable, once all their stages can somehow impact the environment, either by the excessive use of chemicals, electric and water resources, fossil fuels, or soil deterioration, going in the opposite direction to achieve sustainability<sup>8-10</sup>

Wilkins<sup>11</sup> proposes in her work the term “civic dietetics”, assuming that all externalities that permeate the food choices and the political and economic forces that shape the food system are as legitimate to the practice of nutrition as the knowledge on the nutrients and the food and health relation.<sup>11</sup> The author suggests that the practice of nutrition should promote a new food system, sustainable, fair, economically viable and based on the community.

Based on the above, identifying the nutritionists’ responsibilities and contributions to the achievement of sustainable development by investigating the conceptions, valuation, applicability and difficulties found in this topic allows to enhance the role of this professional in promoting a future of social, environmental and economic quality. This study was based on the hypothesis that the nutritionist’ services focused on sustainability, although stated as important, has been poorly developed, indicating the need for changes in the professional’s education and practice.

## Method

This is a descriptive and cross-sectional study with a quantitative approach and was conducted from March 2011 to June 2012. The Ethics and Research Committee of the Faculty of Health Sciences of the University of Brasilia reviewed and approved the project. Data was collected by means of a structured and self-administered questionnaire available online. The professionals were invited to participate by e-mails and social networking groups. To respond the questionnaire, the participant should click the link that would redirect him/her to the Free, Prior and Informed Consent (FPIC) for the research. By agreeing with the FPIC, the questionnaire was displayed for

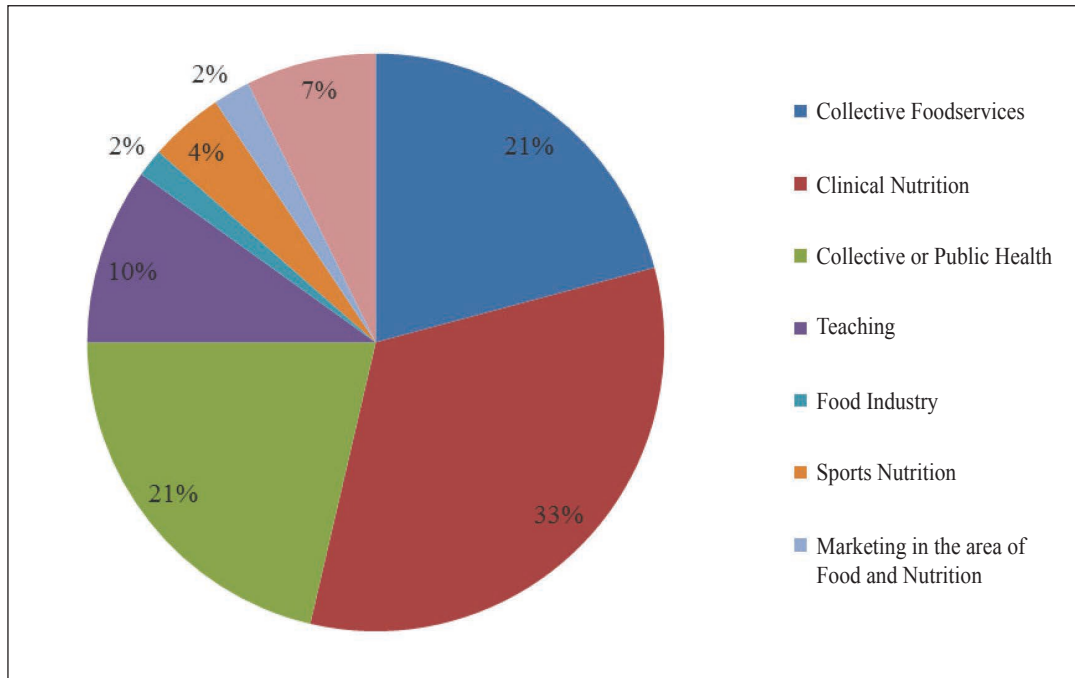
completion. This instrument consisted of 15 closed-ended questions covering aspects that allow to characterize the nutritionists' perceptions and practices on sustainability and the food system, and one open question for comments, criticisms, praises or suggestions.

The variables that were included in the questionnaire were: sex, age, city and state of residence, area of activity, time from graduation, degrees, importance given to sustainability in the nutritionist's activity, concern in practicing sustainable actions at work, perception of the impact of actions on the environment and local economy, kinds of sustainable actions and how often they were practiced, factors hindering the practice of actions and perception of the nutritionist's capability to act in favor of the food system and sustainable development.

The data was organized by the Microsoft Excel (2010) application and analyzed statistically by the SPSS v. 20 software, using the nonparametric chi-square test and Spearman correlation. Data were considered statistically significant when  $p < 0.05$ .

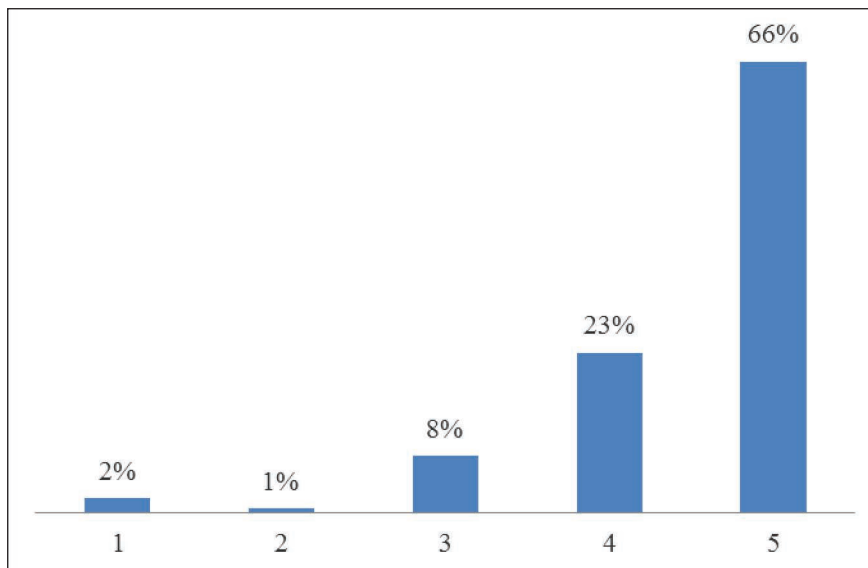
## Results

The final sample was comprised of 192 nutritionists, who met the inclusion criteria for participation in the study. The sample had 98% of female nutritionists ( $n=188$ ) mean age 30 years ( $M: 30.2$ ;  $SD: 8.3$ ). Professionals from 16 Brazilian states attended the study. Regarding the time from college graduation, the average time was two years. Regarding educational degrees, 30% ( $n=57$ ) reported not having a degree other than graduation from college, while those who responded positively ( $n=135$ ), the majority (66%;  $n=80$ ) stated being specialist in Nutrition, 26% ( $n=32$ ) reported having a master's degree, and 8% ( $n=10$ ) a doctoral degree. The area of activity most cited in the study was Clinic, followed by Collective Health. Figure 1 shows the major areas of activity of the participants. The nutritionists that chose the option "other" cited as area of activity: school foodservice, consultancy, hotel, home care, gastronomy and management of popular restaurants.



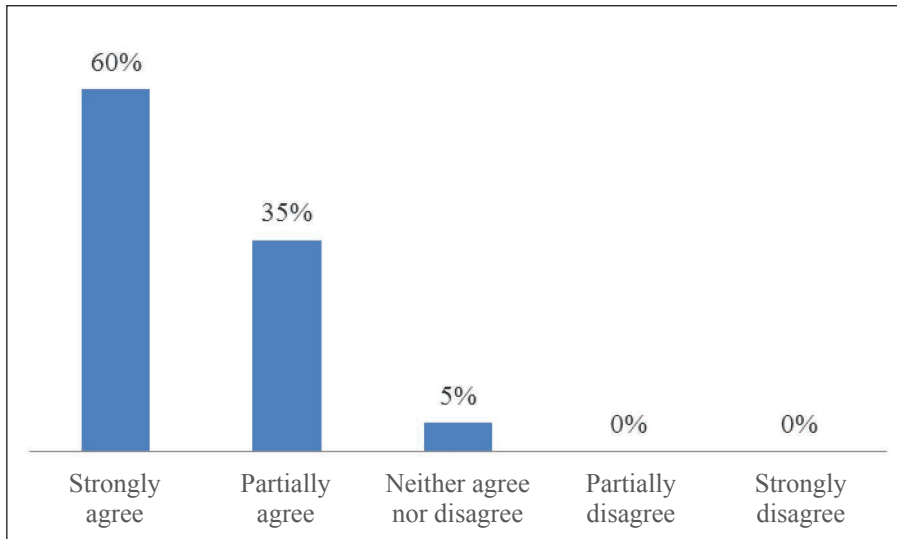
**Figure 1.** Distribution of the nutritionists who participated in the study regarding their main area of activity. Brasília-DF, 2012.

The participants responded, using a five-score scale, where 1 corresponded to “not important” and 5 “very much important”, how important they considered “Sustainable development” in the nutritionist’ activity. The results are shown in Figure 2.



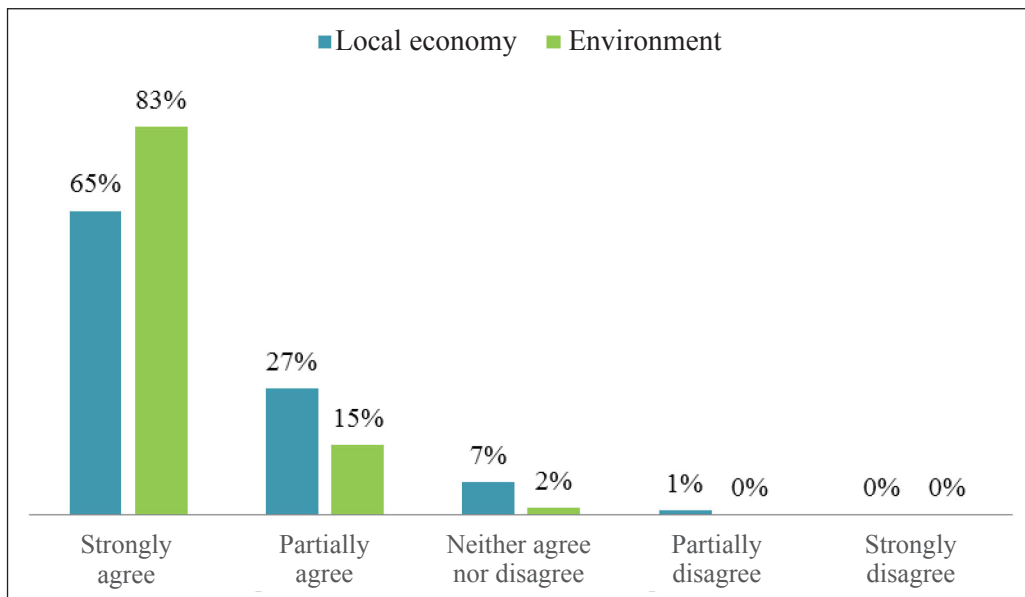
**Figure 2.** Importance given to “Sustainable Development” in the nutritionist’s activity. Brasília-DF, 2012.

The degree of concern in relation to the practice of sustainable actions in the nutritionist’s work was also investigated. The response was based on a scale of agreement of five points, namely: “strongly agree”, “partially agree”, neither agree nor disagree”, “partially disagree” and “strongly disagree”, scored from 5 to 1, respectively. The results are available in Figure 3.



**Figure 3.** Scale of agreement by the nutritionists participating in the study regarding their concern in including sustainable actions at work. Brasília-DF, 2012.

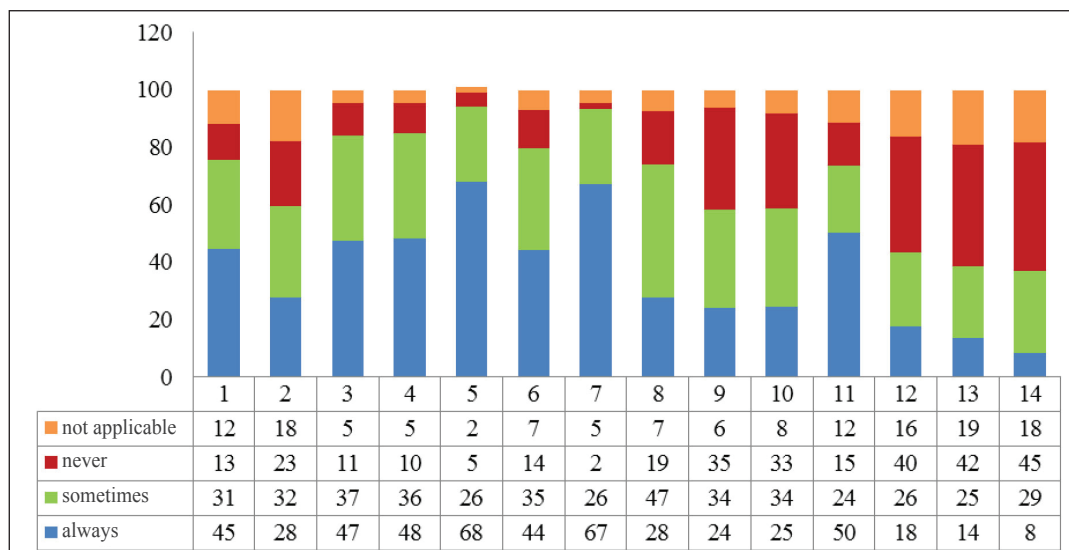
Also using a scale of agreement of five points, the participants indicated their perceptions about the positive impact of practicing sustainable actions in their jobs on the environment and on the local economy. Figure 4 presents the results.



**Figure 4.** Perception of the nutritionists participating in the study with respect to the positive impact of practicing sustainable actions at work on the local economy and environment. Brasília-DF, 2012.

The respondents were asked to choose the option that best indicated how often they performed sustainable actions in their jobs in the last 12 months. Fourteen options were presented and another one named “other”. The participants would indicate the frequency with which they performed these actions according to the options “always”, “sometimes”, “never”, and “not applicable”. Figure 5 shows the results of this question.

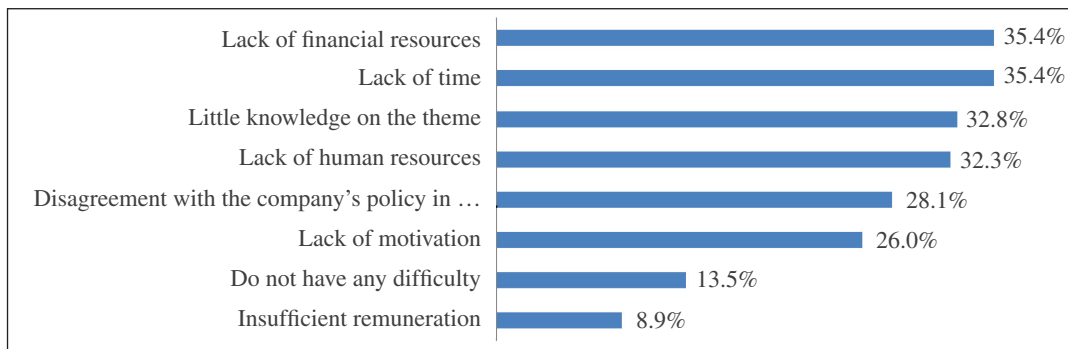




**Figure 5.** How often the nutritionists participating in the study have practiced sustainable actions in their jobs in the past 12 months. Brasília-DF, 2012.

Legend: 1) Selective waste collection; 2) Recycling; 3) Awareness of employees/ customers/ patients/ students to reduce energy wastes (rational use of lighting and electronic equipment; 4) Awareness of employees/ customers/ patients/ students to reduce water wastes; 5) Awareness of employees/ customers/ patients/ students to reduce food wastes; 6) Reference or encouragement to buy foods locally or regionally and/or from family farmers; 7) Preference or encouragement to buy seasonal foods; 8) Preference or encouragement to buy organic foods; 9) Preference or encouragement to buy products that generate fewer packaging wastes; 10) Preference or encouragement to buy reusable-packaging products; 11) Differentiated destination of cooking oil; 12) Development/ Incentive to researches dealing with “sustainable development”; 13) Preparation of classes/ lectures addressing “sustainable development; 14) Promotion of events, fairs, congresses and/or conferences that discuss sustainable development and Nutrition.

In order to identify the difficulties encountered by nutritionists in developing sustainable actions at work, they were asked which would be the three factors that hindered such action. The results can be seen in Figure 6.



**Figura 6.** Percepção dos nutricionistas participantes em relação aos três principais fatores que dificultam a prática de ações sustentáveis no trabalho. Brasília-DF, 2012.

The participants also commented on issues relating to the contribution of the nutritionist's work in making the food system sustainable and the nutritionists' ability of contributing more actively to the achievement of sustainable development, using a five-point scale of agreement. The average result from such questions was 4.8 (SD±0.4), indicating that the participants believe in the professional's ability to contribute to changes in the food system and attain sustainable development.

## Discussion

According to the results found in this study, nutritionists recognize the importance of including sustainability in their professional activity (M: 4.5; SD: 0.7) and say they are concerned in practicing sustainable actions at work (M: 4.5; SD: 0.6). In addition, the professionals responded that they were aware of the positive impacts of sustainable actions carried out at work on the environment (M: 4.8; SD: 0.4) and on the local economy (M: 4.5; SD: 0.7). It can be seen that nutritionists understand the positive impacts on the environment ("strongly agree" = 82.8%; "partially agree" = 15.6%) more easily than the same impacts on the local economy ("strongly agree" = 64.6%; "partially agree" = 27.1%). These results can be related to the one-dimensional notion that sustainability refers to the environment only and that the impacts of sustainable actions will affect only such dimension.

Nascimento<sup>1</sup> and other authors discuss the notion of the three dimensions that encompass the sustainable development concept – economic, social and environmental – referring to the idea that sustainability in the context of development is not only related to the environmental sphere but

also the economic and social spheres, in an integrated manner. The economic and environmental dimensions are concerned with an efficient production capacity and consumption, but in a way that would not affect the ecological equilibrium, ensuring the rational use of natural resources. On the other hand, the social dimension is related to the idea that sustainability should consider social equality and quality of life of this generation and the next ones, bringing the notion of ethics and solidarity.<sup>1</sup> It is important to realize that the social dimension is fundamental in the context of sustainable development once it represents its major purpose – ensuring a fair, healthy life to individuals and in harmony with nature.<sup>2,12</sup> Therefore, one can understand the crucial role of health and the professionals acting in this area in the context of sustainability.

In the study, most of the participants (67%) responded that they “always” or “sometimes” included sustainable actions at work, whereas only 22% said that they “never” practiced them. However, it can be seen that the actions usually performed by nutritionists at work, such as the spreading of awareness for reducing food wastes (“always” = 68%) and the preference or incentive for buying foods according to seasonality (“always” = 67%), showed a higher frequency than the practices not yet considered, e.g., the preference or incentive for buying products that generate fewer packaging wastes (“always” = 24%) and the promotion of events, fairs, congresses and/or conferences that discuss sustainable development and Nutrition (“always” = 8%).

There are no other studies addressing the nutritionist’ activity regarding sustainable practices at work; so, despite in some comments the respondents criticized the low participation of the nutritionist in favor of a sustainable development, this study shows that the majority is interested in the subject and succeeded in including sustainability in their routine work, although superficially.

The sustainable actions mentioned in the study do not exhaust all possible and needed actions. They represent some options and can help and lead nutritionists to look for new sustainability-oriented ways of performing professionally. Most of the proposed actions contemplate all nutritionists’ areas of activity. There are some actions more specific to certain areas, but it is important to realize that the practice of sustainable actions at work is not restricted to some areas and to wastes recycling or water saving only. Examples of other possible actions are related to agroecology, organic production of foods and regulation of advertising for junk foods and non-alcoholic beverages for children. The first action would include stopping using pesticides and genetically-modified foods, and the end of monocultures and large landed estates, which would provide an opportunity for small farmers to participate in the food system, thus ensuring environmental sustainability and social justice;<sup>13</sup> the second aims to prevent children from being exposed to marketing mechanisms, thus hindering the early development of the culture of consumerism, which is the opposite of the culture of sustainability.

It cannot be clearly understood, but the fight against hunger all over the world, which has always been considered a priority in the nutritionist's work, can also be considered an action towards sustainability. Josué de Castro affirmed decades ago that hunger is the biological expression of social ills that are closely linked to economic distortions – and such assertion remains true in the present days. Nearly 925 million people in the world do not have sufficient and adequate food, which means that one in seven people goes to bed hungry every night<sup>14</sup>, and the evidences show that climate changes and rising food prices due to oil price variations will increase these figures<sup>15,16</sup>. Eradicating hunger should not be considered apart from other global challenges, such as the restructuring of the national economy, protection of natural resources from degradation and adaptation to climate changes.<sup>14</sup> The inseparable dimensions of sustainability can be easily understood, and the question arises: how to rethink the economic development model and the food system in order that they become sustainable?

Typical western diet consists of highly refined grains, large amounts of animal protein and few food sources of vitamins, minerals and dietary fibers.<sup>17</sup> It consists of foods knowingly contaminated by diverse kinds of agrochemicals or pesticides and of low quality and little nutritional value. It is also known that such combination threatens health, increasing the risk of developing non-communicable chronic diseases such as obesity, diabetes, systemic high blood pressure, cardiovascular diseases and cancer, among others.<sup>18-21</sup> According to Poubel,<sup>22</sup> this condition is supported by a homogenizing force of eating habits that are typical of the globalized world, where the countries that hold production technologies disseminate their dietary culture through marketing mechanisms. In view of this, the key role that nutritionists can perform in favor of sustainability can be easily identified.

The results from this study show that the participants agree that nutritionists can transform the conventional food system into a sustainable system (M: 4.8; SD: 0.4), and contribute actively to the achievement of an identically sustainable development model (M: 4.8; SD: 0.4). Wilkins & Preuss<sup>11,23</sup> define the nutritionist's role as key to achieving sustainable development because this professional represents the link between society and the food system. Maluf<sup>24</sup> cites the increasingly visible gap existing between the production stages and consumption in the food system, emphasizing that this can be the cause of many food problems existing today. So, to diminish such gap by showing to the communities its causes and consequences and urging them to act incisively in the process of change of this system is responsibility of the nutritionist, a professional that is qualified to understand food with respect to its nutritional composition as well as the entire socioeconomic scenario where it is inserted, taking into account that eating is, above all, a political and ideological act.<sup>11,25</sup>

However, the results show that to perform professionally in a sustainable manner the nutritionist considers as barriers lack of time (35%), financial resources (35%) and knowledge on sustainability (32%). The two first barriers can be explained by the relationship between the workload imposed to the nutritionist (in a typical contract, 40 hours/week), and an average monthly salary (R\$ 1,600), which rarely is considered a fair remuneration by these professionals.<sup>26</sup> The third obstacle, lack of knowledge on sustainability, can be understood as a failure in the professional education and/or in graduate programs.

Several studies investigating the professional education of nutritionists show failures in the graduation programs regarding contents and methodology.<sup>27</sup> Furthermore, there are no graduate course in Brazil dealing specifically with sustainability. According to the results, 30% of the nutritionists who participated in the study reported that they had no further degree after college graduation, and only 18% were engaged in developing or promoting researches on sustainable development, factors that demonstrate the lack of theoretical inputs on the subject in the Nutrition context. The options “lack of motivation” and “insufficient remuneration” were less cited (26% and 8%, respectively), but they are directly associated with the three options considered the greatest obstacles to sustainable practices at the nutritionist’s work. Despite these possible explanations, it is known that most of the sustainable actions discussed in this study and many of other actions do not necessarily require large sums of money or much time to be accomplished, suggesting that the lack of knowledge on the theme is the greatest difficulty hindering the full integration of sustainability into the nutritionist’s performance.

## Conclusion

Through this study the professional activity of nutritionists with respect to aspects relating to the food system and sustainability could be characterized. The hypothesis of the study – “the professional performance of nutritionists with a focus on sustainability, although considered important, is still poorly developed, indicating the need for changes in education and in the activities of this professional” – was validated according to the results. The practice of sustainable actions at work by nutritionists proved to be satisfactory, but the data obtained do not allow a more comprehensive analysis on how these actions are performed and its representativeness in the activities of this professional.

The problems that hinder the achievement of sustainable development are systemic and indicate the need for equally systemic solutions. Thus, in times of economic and environmental crises, it is no longer enough to act individually and alone. Given this, nutritionists should build their knowledge in an integrated and holistic manner, in order to be able to handle food, nutrition, health and sustainability for the benefit of society and by inter- and trans-disciplinary actions. Also, they should develop multi-professional skills because the challenges to the achievement of sustainable development are huge and require multilateral efforts, empowerment and social mobilization.

Regarding limitations, the study could not identify the nutritionists' knowledge on the food system and sustainability, because it was based on a structured questionnaire with closed-ended questions, which narrowed the possibilities of responses and reflections on the theme. Furthermore, it is a convenience sample, which provides data for the creation of hypotheses but not conclusive data.

Thus, further studies aiming to investigate the knowledge and practices of these professionals on sustainability are suggested, as well as a reformulation of the nutritionist's education, training and professional performance, in order to identify possible contributions of this professional to the environmental, economic and social sustainability.

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