



## Food and nutrition education for schoolchildren

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### ABSTRACT

#### OBJECTIVE

To systematize the main actions and interventions of Food and Nutrition Education for schoolchildren and describe the activities found in the national literature.

#### METHODS

Non-systematized literature review on schoolchild feeding education, using the following criteria: articles published in national journals, theses, dissertations, and books on the subject between 2009 and 2022.

#### RESULTS

In Brazil, food is a right provided for as promulgated in the Federal Constitution since 1988, ensuring the right to school feeding to all students in elementary school through a supplementary school feeding program to be offered by the federal, state, and municipal governments, and since February 2010, food was included among the social rights provided for in Article 6 of the Federal Constitution defined by the Organic Law of Food and Nutrition Security. However, there are still challenges facing its realization.

#### CONCLUSIONS

Nutrition Education actions are important because they have benefits for the health of children and promote early food awareness. However, although it is a mandatory item in the educational curriculum to talk about healthy eating according to the guidelines of the Brazilian National Common Curricular Base (BNCC), this subject is not so deep and addressed in studies since it is difficult to select articles, because besides being mandatory in the educational curricula of schools to teach and practice healthy eating, perhaps not at the level of depth and update desired by the authors. Nutrition Education should be an integral part of the mandatory subjects, especially for students in the early stages of education, also reaching those who live with them and society in general.

#### DESCRIPTORS

Food Education, Nutrition, Diet, Schoolchildren, Education, NAP, Food Insecurity.

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## INTRODUCTION

Maintaining a healthy diet throughout life prevents not only malnutrition in all its forms, but also a range of chronic non-communicable diseases (NCDs) and other health conditions. However, increased production of processed foods, rapid urbanization, and changing lifestyles have given rise to a change in dietary patterns. People are consuming more foods high in calories, fat, free sugars, and salt/sodium - and many are not eating enough fruits, vegetables, and other dietary fiber<sup>1</sup>. Thinking about these factors it becomes increasingly difficult to establish healthy eating habits, and it is in childhood that these habits are initiated and consolidated, Food and Nutrition Education (EAN) strategies are great allies in promoting healthy eating habits<sup>1</sup>.

Nutrition Education is defined as a "combination of educational strategies, accompanied by actions that enable an environment that supports the desired behavior, promotes autonomy, and facilitates the voluntary adoption of food choices and other related behaviors with the goal of well-being and health"<sup>2</sup>.

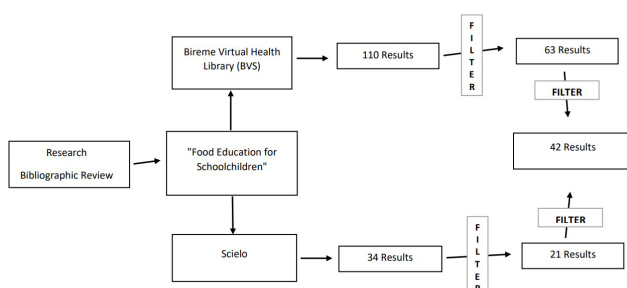
The definition adopted by Resolution No. 380/2005 of the CFN says that it is a "procedure performed by the nutritionist with individuals or population groups, considering the interactions and meanings that make up the phenomenon of eating behavior, to advise changes necessary for a readjustment of eating habits"<sup>3</sup>.

For nutrition education actions to be effective, especially for children, the use of playful and dynamic methodologies should be considered, to explore creativity and imagination, seeking to provide a favorable teaching environment. The school environment is suitable and should be used in order to contribute to the process of construction/affirmation of food identity during childhood<sup>4</sup>. In formal education, the school environment stands out as a suitable and favorable place for the implementation of EAN, because it is there that the necessary pedagogical practices for the learning process and improvement of quality-of-life occur<sup>4</sup>. To address Nutrition and Nutrition Education in schools, it is important to consider two professionals who work in this setting and have influence on food and nutrition: the nutritionist and the educator, who can offer relevant contributions<sup>5</sup>.

## METHODS

The data were collected through unsystematized bibliographic research of literature review, where the following criteria were used: scientific articles published in national journals, theses, dissertations, and specific books that address the theme in the period between 2009 and 2022. The data collection was obtained from scientific articles extracted from the virtual health library Bireme, by SCIELO, Ministry of Health, World Health Organization (WHO), and data consultation by the Brazilian Society of Pediatrics and Brazilian Association for the Study of Obesity and Metabolic Syndrome. The inclusion criteria for this research were books and articles published in the last ten years. The survey in the databases was conducted between February and September 2020, using the following descriptors: Food Education, Nutrition, Diet, Schoolchildren, Education, PNAE, and Food Insecurity. The flowchart shows the steps for selection of the articles analyzed in this study.

Figure 1. Flowchart of the search process and article selection.



## RESULTS

In Brazil, food is a right set forth in the Federal Constitution, but there are still major challenges to its full realization. The school is a strategic place to promote proper nutrition, and, in terms of public policies, two actions are strategic: the School Health Program (PSE) and the National School Feeding Program (PNAE). The PSE develops actions to prevent, promote, and care for the health of students in the public education network through local articulation with the Unified Health System (SUS - through the Family Health Strategy) and includes among its actions the promotion of healthy eating. PNAE guarantees the right to universal school meals and defines it in its various dimensions: health, including special food needs; nutritional education, with emphasis on healthy eating habits; and respect for food culture and sustainable food production<sup>6</sup>.

Having as assumptions the rights to health and to adequate and healthy food, the Food Guide for the Brazilian Population is an official document that addresses the principles and recommendations of an adequate and healthy food for the Brazilian population, configuring itself as a support tool for actions of food and nutrition education in SUS and other sectors<sup>7</sup>.

The Food Guide for the Brazilian Population is one of the strategies for the implementation of the guideline for the promotion of adequate and healthy eating, which is part of the National Food and Nutrition Policy (PNAN)<sup>7</sup>.

Considering the multiple determinants of food practices and the complexity and challenges that involve the conformation of current food systems, the food guide reinforces the commitment of the Ministry of Health to contribute to the development of strategies for the promotion and realization of the human right to adequate food. In this sense, the WHO proposes that governments provide the population with information to facilitate the adoption of healthier food choices in a language that is understood by all people and that considers the local culture<sup>7</sup>.

The current legislation identifies the objective of PNAE as contributing to the biopsychosocial growth and development, school performance, learning, and the formation of healthy eating practices of students, by carrying out actions of food and nutrition education (EAN) and providing meals that ensure the nutritional needs of students while they are in school<sup>8,9</sup>. Within the scope of PNAE, EAN represents the set of formative actions, of continuous and permanent practice, transdisciplinary, intersectorial, and multiprofessional, which aims to encourage the voluntary adoption of healthy food practices and choices that contribute to learning, the schoolchildren's health status, and quality of life. The assumptions of the EAN actions are the promotion of healthy and adequate food supply at school; activities that favor regional and cultural eating habits; actions that articulate policies at all levels, in the scope of school feeding; use of innovative methodologies for pedagogical work and development of social technologies focused on school feeding; in addition to the use of food as a pedagogical tool<sup>9</sup>.

A study conducted in a school in the municipality of Aracaju/SE, Brazil; reports the success of an HNS action for schoolchildren aged 5 to 10 years. The educational actions carried out are inserted in the curricular internship of Social Nutrition covering Public Health, with the main focus on encouraging healthy eating for schoolchildren and had as a strategy the playful and dynamic teaching. The themes developed were: "Knowing Food" and "Building a colorful plate". The actions were subjectively analyzed through feedback at the end of each activity. They were considered satisfactory regarding the awareness of healthy habits and quality of life, highlighting the expressive and friendly interaction of the target audience<sup>10</sup>.

An analytical cross-sectional study was carried out by the

*Centro Colaborador em Alimentação e Nutrição do Escolar* of the Universidade Federal de Goiás and FNDE/MEC. The sample included all municipalities in Goiás in 2012 ( $n = 246$ ). Of these, those that did not receive resources from PNAE, or where the local representatives of PNAE did not know how to answer about the actions of EAN were excluded. Data collection was carried out from April to August 2012, by seven trained interviewers (two nutritionists and five Nutrition students). The information was obtained through Skype software and recorded in a structured form. Among the interviewees who reported performing activities on Nutrition Education, 119 (61.0%) reported that the actions are inserted in the political pedagogical project of school units, but only 67 (56.3%) were able to report in which subjects the theme is inserted. Of those who informed, Science was the most cited subject ( $n = 59$ ; 88.1%), followed by Portuguese Language ( $n = 33$ ; 49.2%) and Mathematics ( $n = 27$ ; 40.3%). Of the 19 municipalities where the actions of Nutrition and Nutrition Education were not performed, in 18 (94.7%) the interviewee was able to report the reasons for this non-performance, being the absence of a nutritionist (33.3%), lack of time (33.3%), lack of interest of the school community (22.2%) and insufficient human resources (16.7%) the most cited. A positive association was found between the presence of a nutritionist and the implementation of Nutrition Education activities. In this sense, the development of projects requires mutual collaboration among principals, coordinators, teachers, and nutritionists, and the participation of the nutritionist in educational meetings<sup>11</sup>.

In the contemporary social scenario, the recovery of the link between food and nature is central to the development of educational actions. Based on the direct contact with food and nature, the school garden is a pedagogical strategy that opens several possibilities for thinking about the relationship with food<sup>11</sup>.

A study conducted in public schools in the municipality of Embu das Artes in the state of São Paulo, where the objective was to understand how the personal experience of involvement with planting and participation in the school garden contributes to building a relationship with food, using philosophical hermeneutic method to understand experiences and experiences - subjective and intersubjective - of educators involved in school gardens. This study was conducted with support from the School Source Program (PFE), started in 2009 by a non-governmental organization, which was responsible for carrying out activities with groups of children from public schools in the region, develop training courses in agro-ecological school gardens. In all, nine municipal schools were evaluated, three of which remained with the planting of gardens. Regarding the role of the garden as a strategy to EAN, there was a direct relationship to the production of knowledge, and with activities that went beyond the informational standard and enabled educational practices<sup>12</sup>.

Despite the undeniable achievements with the insertion of Nutrition and Nutrition Education in the NAP, there seems to be a gap between discourse and practice; between what is recommended and what is executed. It is suggested to conduct in loco studies, to assess the effectiveness of the methodologies used; how has been the insertion of the theme food and nutrition in school curricula, as well as the profile of the nutritionist to fulfill the proposed in this context<sup>11</sup>.

With the onset of the COVID-19 pandemic in Brazil in 2020, classes in public schools were suspended, which meant the interruption or precarious access to food, which not only impacts the families' budget, but also harms quantitatively and qualitatively the students' nutrition<sup>13</sup>.

The challenge in this pandemic period was to ensure that the human right to adequate food (DHAA) was guaranteed, such as the strengthening and continuity of public actions of the National School Feeding Program (PNAE)<sup>13, 14</sup>.

Despite being a predictable measure, since other countries were already facing similar situations, when it occurred, there was no guidance from the FNDE on how the states and municipalities should proceed in the supply of school meals. Given the urgency of the situation, managers adopted different measures to continue supplying food to schoolchildren and, without legal support, they were unable to use PNAE resources for these actions. The legal support came only in April 2020, through Law No. 13987, which authorized, "exceptionally, during the period of suspension of classes due to emergency or public calamity, the distribution of food purchased with PNAE resources to parents or guardians of students in public schools of basic education.

Thanks to its scope and profile of the public served, the PNAE has become an important instrument to promote the rights related to health and food, besides contributing to the strengthening of the economy during the pandemic period<sup>15</sup>.

## DISCUSSION

The acquisition of good eating habits should be started early and gradually, so it is important to encourage the promotion of healthy eating in schools in a playful way to promote the development of healthy eating practices inside and outside the school environment<sup>16</sup>. Among the determinants of nutritional status are food preferences, which play an important role in determining food selection and diet quality. It is also up to parents to manipulate a conduct of good habits, to establish a balanced and satisfactory diet for growth and development, as well as to supervise the learning of appetite and satiety self-control<sup>17</sup>.

Aiming at supporting Nutrition Education actions in various sectors so as to integrate broader strategies for promoting quality of life of the population and a common ground for reflection and practice, the "Framework of Reference in Food and Nutrition Education for public policies" points out that Nutrition Education should use problematizing and active educational approaches and resources that foster dialogue with individuals and population groups, considering all stages of the life course, stages of the food system, and the interactions and meanings that make up the eating behavior<sup>18</sup>.

It is believed that educational actions on nutrition should be an integral part of the school curriculum, considering that this environment is favorable to behavioral changes.<sup>19</sup> The Brazilian Association for the Study of Obesity (ABESO) believes that the school is a strategic space to prevent childhood obesity because children eat at least one meal a day at school<sup>19, 20</sup>.

## CONCLUSION

Based on the evidence presented, the importance of Food and Nutrition Education actions in schools is undeniable, although these actions are extremely important, they are not often adopted by schools, or are not often addressed in studies since it is difficult to select articles on the subject.

We also highlight the need to extend these actions to parents and/or guardians of the students, since many of them do not have a real knowledge about balanced and healthy eating and considering that it is at home that eating habits are consolidated, this is a very important point to be developed. It is also important to highlight the need for integration between school and community; all parties must work with the same focus for learning to be effective. And because it is an approach that advocates health and well-being from the inside to the outside of the school, reaching not only the students, but also those who live with them and society in general. It is possible to see the importance of the public initiative as a means of disseminating Nutritional Education, having as partners of

the schools the health units through the PSE, it is a setback of extreme importance, because it acts with the food theme directed to the health issue and it is approached by professionals properly trained for this work, making it more effective.

It is concluded then that Food and Nutrition Education must be an integral part of the mandatory subjects, especially for students in the early stages of education.

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