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More than nutrients: a critique of nutritionism in health education

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ABSTRACT

This article aims to analyze the hegemony of nutritionism in Health Education practices and discourses, highlighting the ways in which this rationality operates by reducing eating to biological and quantitative aspects. Its influence is evident in food-related policies, especially those connected to education. Through a theoretical and documentary analysis, the study critically examined the Reference Framework for Food and Nutrition Education, the National School Feeding Program, the Health at School Program, and the Brazilian Dietary Guidelines. The analysis was guided by Scrinis' critique of nutritionism, seeking to identify categories and tensions that reveal the persistence of this rationality within public policies. The results indicate internal contradictions that become more evident as recent documents incorporate broader conceptions of food, acknowledging cultural, social, and environmental dimensions. However, this expansion does not eliminate the enduring traces of prescriptive reductionism in educational food policies. It is concluded that overcoming nutritionism requires understanding food as a social and political practice capable of fostering discussions that promote critical autonomy as well as reframe the objectives and practices of Health Education in schools. Finally, the study proposes a Health Education grounded in plurality and in the dialectical production of meanings surrounding food.

KEYWORDS: Basic education; Food; Public policies; Nutritionism; Autonomy.

Para além dos nutrientes: uma crítica ao nutricionismo na educação em saúde

RESUMO

Este artigo teve como objetivo analisar a hegemonia do nutricionismo nas práticas e discursos da Educação em Saúde explicitando as formas com as quais opera essa racionalidade que restringe o ato de se alimentar aos aspectos biológicos e quantitativos. Sua influência é evidente nas políticas voltadas para a alimentação, especialmente naquelas voltadas à educação. A partir de uma abordagem teórico-documental, nosso estudo examinou criticamente o Marco de Referência de Educação Alimentar e Nutricional, o Programa Nacional de Alimentação Escolar, o Programa Saúde na Escola e o Guia Alimentar para a População Brasileira. A análise realizada parte da crítica ao nutricionismo, buscando identificar categorias e tensões que revelam a presença dessa racionalidade nas políticas públicas. Com isso, foram identificadas contradições internas que se exacerbam à medida que os documentos mais recentes incorporam concepções expandidas sobre a alimentação, que reconhecem dimensões culturais, sociais e ambientais. Entretanto, essa expansão não elimina os persistentes traços do reducionismo prescritivo nas políticas voltadas à educação alimentar. Conclui-se que, para superar o nutricionismo, precisamos compreender a alimentação como prática social e política, capaz de mobilizar discussões que ensejem uma formação para a autonomia crítica, bem como ressignificar objetivos e práticas da Educação em Saúde na escola. Por fim, propõe-se uma Educação em Saúde fundada na pluralidade e na dimensão dialética da produção de sentidos sobre a alimentação.

PALAVRAS-CHAVE: Educação Básica; Alimentação; Políticas públicas; Nutricionismo; Autonomia.

INTRODUCTION

This study aims to analyze the hegemony of nutritionism in discourses and practices related to food and eating, particularly within the field of Health Education. We seek to critically examine the reductionist view historically promoted by different forms of nutritionism, which frame eating as a strictly biological and quantitative phenomenon.

Our specific objective is to understand how this logic of nutritionism has been reproduced, albeit subtly, in educational policies and practices aimed at health promotion. We identified important parallels between the reductionism promoted by nutritionism and certain normative approaches within Health Education. Both are characterized by prescriptive orientation and a focus on individual behaviors. In light of this, we argue for the need for a non-prescriptive approach that recognizes food and eating as social, cultural, and political practices.

This study adopts a qualitative approach, following the perspective proposed by Minayo et al. (2002), as it is grounded in the analysis of public policy documents in the field of Health Education. As its primary methodological strategy, the study adopted documentary analysis, using as its corpus the Reference Framework for Food and Nutrition Education (*"Reference Framework" de Referência de Educação Alimentar e Nutricional*), the National School Feeding Program (*Programa Nacional de Alimentação Escolar* –PNAE), the School Health Program (*Programa Saúde na Escola* – PSE), and the Dietary Guidelines for the Brazilian Population (*Guia Alimentar para a População Brasileira* – Guia). The analysis was guided by the principles of content analysis proposed by Bardin (1977), especially through the systematic reading and exploration of the material. We first conducted an initial reading of the corpus, followed by thematic categorization informed by the critique of nutritionism and by the interpretation of the recurring patterns, tensions, and contradictions identified in the documents. The documents were examined through the critical framework of nutritionism developed by Scrinis (2021), with the aim of identifying how this rationality is expressed in the guidelines, recommendations, and justifications present in the analyzed policies, as well as the tensions and contradictions arising from the incorporation of broader approaches to food and eating.

In our analysis of contemporary public policies that shape teaching practices, we demonstrate how nutritionism continues to operate as a hegemonic perspective, even in documents that seek to overcome it. At the same time, we highlight the new horizons opened by recent frameworks, such as the Reference Framework for Food and Nutrition Education (*Marco de Referência de Educação Alimentar e Nutricional*) and the Dietary Guidelines for the Brazilian Population (*Guia Alimentar para a População Brasileira* – Guia), which advance broader and more contextualized understandings of food and eating.

From this perspective, we argue for the need for an emancipatory approach to food and nutrition education that moves beyond nutritionism and is grounded in critical autonomy, respect for food cultures, and the recognition of the multiple dimensions that constitute food and eating practices.

EDUCATION UNDER THE SHADOW OF NUTRITIONISM

According to Scrinis (2021), nutritionism is understood as a dominant paradigm within nutritional science, characterized by the reduction of foods to their constituent nutrients and by the cultural, social, and ecological decontextualization of food and eating. The author further states:

> Nutritionism, or nutritional reductionism, is characterized by a reductive emphasis on the nutritional composition of foods as a means of determining how healthy they are, and by a reductionist interpretation of the role such nutrients play in bodily health. (Scrinis, 2021, p. 25).

By reducing foods to their constituent nutrients, nutritionism has become consolidated as a form of "contemporary certainty," reproduced by scientists, health professionals, and the food industry. Nutritionism encourages the interpretation of foods in terms of their biochemical composition, relegating to the background the social and practical forms of knowledge related to food and eating. This logic contributes to the replacement of food by nutritional information, leading nutrients to be analyzed in isolation, abstracted from dietary patterns, food cultures, and ecosystems. Nutritionism is not defined solely by the reduction of foods to nutrients, but also by the transformation of nutrients into factors associated with health or disease. For Canguilhem (2009), health extends far beyond the mere absence of disease. He defines it as the organism's capacity to maintain a dynamic balance by adapting to circumstances and regulating itself according to its needs. The conception adopted in this study takes into account the social, psychological, and philosophical dimensions of the individual, thereby emphasizing this particular dimension of Health Education in contrast to the other conceptions discussed previously. From this perspective, the presence or absence of a single nutrient would not be capable of fully producing either health or disease.

Nutritional reductionism also contributes to what Farias (2021, p. 26) calls "nutritional terrorism", characterized by the formation of a generation marked by anxiety surrounding food and eating, alongside the proliferation of numerous diets, often highly restrictive in nature. However, because eating is a complex human practice, it is shaped by cultural and subjective dimensions that make it impossible to reduce solely to isolated nutritional aspects (Almeida, 2018). According to Scrinis, nutritionism can be divided into three eras: quantifying nutritionism, good-versus-bad nutritionism, and functional nutritionism, each shaped by scientific research, the field of nutrition and its guidelines, and food marketing practices (Scrinis, 2021).

Quantifying nutritionism, predominant between the nineteenth and twentieth centuries, was characterized by an emphasis on measuring the nutrients present in foods. Within this paradigm, only nutrients that could be identified, quantified, and functionally explained were recognized as legitimate knowledge. The central concern lay in determining appropriate quantities, with a focus on preventing diseases associated with nutritional deficiencies. The discovery of vitamins was decisive in strengthening this model, consolidating the idea that health depended on the measurable consumption of specific nutrients. Scrinis (2021) observes that "the discovery of vitamins also led to a public perception that

modern foods and dietary patterns are nutrient-poor" (p. 93), a perception that has intensified in recent decades.

The paradigm of "good versus bad" nutritionism, which became consolidated between the 1960s and 1990s, was primarily characterized by the classification of nutrients and biomarkers into two opposing categories: beneficial or harmful. This perspective reinforced the idea that certain nutrients, when considered "bad," could compromise health and cause chronic diseases in an equally isolated and decontextualized manner (Scrinis, 2021). Unlike the previous era, which focused on the prevention of nutritional deficiencies, research during this period became increasingly oriented toward the prevention of chronic noncommunicable diseases, particularly through the reduction of specific nutrients in the diet.

Scrinis (2021) observes that, whereas during the quantifying era Americans were diagnosed as undernourished, in this new phase they came to be viewed as "overnourished" with harmful nutrients. As a result, foods that had previously been recommended, such as meat and dairy products, were reevaluated and frequently identified as potential health risks. This shift was also associated with the rise of ultra-processed foods, developed from the 1950s onward, characterized by high levels of fat, sugar, and salt, which increasingly became central targets of criticism.

Nevertheless, the binary logic underlying the classification of nutrients remained problematic. By reducing food and eating to an opposition between good and bad nutrients, such as saturated fats, refined sugar, complex carbohydrates, and fiber, this perspective overlooked both the complexity of foods themselves and the complexity of human physiology. In this sense, the simplistic characterization of nutrients as inherently beneficial or harmful disregards the multiple biochemical and contextual interactions involved in food and eating practices.

Scrinis highlights that, although many studies at the time associated the consumption of saturated fats with the development of heart disease, there was limited robust scientific evidence to support such conclusions. As the author observes:

> At that time, there was little direct evidence, in the form of controlled trials, that reducing saturated fat intake or increasing unsaturated fat intake actually reduced the incidence of heart disease. Undoubtedly, this situation still persists today. (Scrinis, 2021, p. 149).

Thus, "good versus bad" nutritionism can be understood as the tendency to treat isolated nutrients as determinants of disease.

Functional nutritionism is characterized by its focus on nutrients associated with specific health benefits, emphasizing the optimization of their consumption. These nutrients came to be described as "functional" because they were linked to improved bodily functioning and to the capacity to reduce the risk of certain diseases. Unlike the previous era, which centered on reducing nutrients considered harmful, the focus now shifted toward emphasizing the positive effects attributed to nutrients regarded as beneficial.

According to Scrinis (2021), this movement intensified what he describes as nutritional anxiety, a phenomenon characterized by the persistent feeling that one is not consuming sufficient quantities of nutrients. In this context, the food industry

began adding vitamins and minerals to ultra-processed foods, promoting them through slogans such as “rich in calcium” or “high in vitamin D.” However, as the author emphasizes, studies seeking to evaluate the effects of individual foods or food groups face significant methodological limitations. The complexity of dietary patterns and the multiple factors influencing health mean that, in many cases, the results obtained are merely associations between food consumption and particular outcomes, rather than evidence of direct causality. Even so, these simplified relationships continue to support scientific practices and marketing strategies that reinforce the functional logic of nutritionism.

Functional nutritionism also sustains the expectation that isolated nutrients, combined with specific dietary patterns, can improve and optimize health or particular bodily functions (Scrinis, 2021). As researchers in the field of Health Education, Scrinis’s critique of nutritionism led us to reflect on movements that appear analogous within our own field. Previous studies have shown that Health Education practices often continue to be marked by a normative and prescriptive bias, establishing standards of conduct based on particular health parameters (Venturi, 2018). This creates a context in which professionals in the field feel pressured to comply with goals and protocols that do not always take regional specificities or individual circumstances into account (Venturi, 2018).

In an analysis of 296 papers related to Health Education in science teaching, Venturi (2018) concluded that more than half (51%) focused on the development of educational strategies and on understanding perceptions of Health Education within the school context. Among these studies, obesity emerged as a particularly prominent topic, closely associated with discussions surrounding sedentary lifestyles, healthy eating, and nutrition (Venturi, 2018). These findings demonstrate that both researchers and professionals in the field recognize the importance of discussing food and eating as fundamental dimensions of health promotion. At the same time, they reveal important gaps, as the focus remains largely centered on strategies that, although essential, may privilege isolated solutions while failing to sufficiently address the relationships between food and eating, culture, and socioeconomic conditions (Venturi, 2018). Thus, there is a clear need for broader reflection on the role of schools and teaching professionals, so that pedagogical practices do not become limited to blaming those who fail to conform to established standards.

In a study conducted by Mulinari (2023), activities developed within the scope of Health Education, encompassing issues related to drugs, food and eating, and personal hygiene, were found to commonly focus on identifying behaviors considered harmful and subsequently proposing individual-centered solutions. Similarly, studies by Mohr (2002), Venturi (2018), and Mulinari (2018) emphasize this preventive approach, oriented towards the modification of individual behaviors, which often relegates to the background the historical, cultural, and socioeconomic dimensions that also shape eating practices.

Within educational curriculum policy frameworks, food and eating are recognized as components of the school curriculum and are incorporated into key educational policy documents. The National Common Curricular Base (Base Nacional Comum Curricular - BNCC), for example, maintains that citizenship education includes understanding healthy eating practices (Brasil, 2018). To this end, the BNCC proposes the development of knowledge that enables students to

make informed and conscious choices, emphasizing the relationship between food and eating, health, and quality of life (Brasil, 2018). This guideline makes possible an interdisciplinary approach in which science education at both elementary and secondary levels can engage in dialogue with other disciplines in the construction of a broad conceptual framework involving, for example, biology, geography, sociology, history, and even culinary arts and cultural expressions related to food and eating (Brasil, 2018). Within this framework, the promotion of healthy eating habits emerges as something more complex than the mere recommendation of nutrients; rather, it involves fostering critical awareness regarding the production, consumption, and disposal of food.

This emphasis aligns with the understanding that Health Education is not limited to the transmission of medical or nutritional information but also involves the construction of active citizenship capable of questioning conditions of access to food, the role of food corporations, and the implications of consumption patterns. Mulinari (2023) highlights that, although food and eating are addressed from multiple perspectives throughout the educational process, within science education they are often confined to specific content areas and approached through predominantly prescriptive methodologies.

As a result, the educational process may become limited to indicating what should or should not be considered healthy in order to achieve the standard of health established by official documents, thereby neglecting broader reflections on public policies, the food industry, advertising, unequal access to fresh foods, and other issues related to students' critical autonomy. In order to better understand the contradictions surrounding the context of Food and Nutrition Education, we analyzed the documents that establish some of the main national public policies in this field. Drawing on the critique of nutritionism, our objective is to make explicit the expectations placed upon education related to food and eating, a field marked by ongoing disputes and competing perspectives.

FOOD, EATING, AND EDUCATION

The relationship between education and eating emerges as a central axis in the promotion of practices and policies aimed at individual and collective well-being. According to the Ministry of Health (Ministério da Saúde – MS) (Brasil, 2025), food and eating should be understood as constitutive dimensions of Health Education precisely because they play an essential role in the formation of healthy eating habits, which are fundamental to disease prevention, health promotion, and overall well-being. This perspective is also reflected in official resolutions and policy documents, which emphasize that food and eating should be understood not only as a student right, but also as an opportunity to promote healthy eating habits and contribute to Health Education (Brasil, 2014).

Brazilian legislation recognizes that the school environment provides multiple opportunities for addressing issues related to food and eating. Among the principal programs related to this field, the most prominent is the National School Feeding Program (*Programa Nacional de Alimentação Escolar* –PNAE), administered by the National Fund for Educational Development (Fundo Nacional de Desenvolvimento da Educação – FNDE). The PNAE focuses on ensuring students' biopsychosocial

growth and development, as well as improving academic performance through the provision of quality meals and the implementation of food and nutrition education initiatives (Brasil, 2020).

NATIONAL SCHOOL MEALS PROGRAMME (PROGRAMA NACIONAL DE ALIMENTAÇÃO ESCOLAR (PNAE))

The PNAE, which provides meals to students in the public education system, was regulated by Law No. 11.947 of June 16, 2009. This legislation establishes that any initiatives aimed at promoting healthy eating within schools must be linked to Food and Nutrition Education (Educação Alimentar e Nutricional – EAN) (Brasil, 2009). The PNAE promotes EAN through actions integrated into the school curriculum and through practical initiatives. Over the years, the PNAE has become established as an essential public policy for guaranteeing the right to adequate food, promoting a model of school feeding that is both sustainable and culturally inclusive.

However, the PNAE operates within a tension that seeks to reconcile different perspectives. While the program adopts a language closely aligned with nutritional science and seeks legitimacy through traditional scientific production, it also proposes actions that move beyond the restrictive view of nutritionism. For example, Article 4 of Law No. 11.947 establishes the "[...] provision of meals that meet students' nutritional needs during the school term," a formulation that echoes the era of quantifying nutritionism, the nineteenth century (Brasil, 2009). At the same time, Article 2, Section I, of the same law establishes as a guideline for school feeding:

> […] the promotion of healthy and adequate eating, encompassing the use of varied and safe foods that respect culture, traditions, and healthy eating habits, contributing to students' growth and development and to the improvement of academic performance, in accordance with their age group and health conditions, including those requiring specific attention. (Brasil, 2009).

By incorporating respect for cultural dimensions and traditions, this proposal moves away from nutritionism by including aspects that are often ignored or subordinated to the pursuit of dietary adequacy. For this reason, the PNAE establishes an ambivalent policy framework. It draws on the technical authority of nutritional science to support its legitimacy and fulfill public health requirements, while its emphasis on cultural respect, sustainability, and the prioritization of family farming makes possible legal, political, and educational approaches grounded in an alternative philosophy critical of nutritionism.

However, it is essential to understand that, although the PNAE plays a central role in EAN, its contribution occurs primarily through structural actions, such as its integration with the National Textbook Program (*Programa Nacional do Livro Didático* – PNLD) and pedagogical training initiatives, rather than directly through teachers' classroom practices. It is also important to emphasize that, although linked to EAN, the PNAE's primary purpose is to provide food for those within the school environment; to nourish from a physiological perspective, certainly, but also to provide care and emotional support.

HEALTH IN SCHOOLS PROGRAMME (PROGRAMA SAÚDE NA ESCOLA (PSE))

Another initiative relevant to the context of EAN is the PSE, established by Presidential Decree No. 6.286/2007, which established a strategy for integrating the health and education sectors aimed at developing health promotion initiatives within schools. The program was developed through a partnership between the Ministry of Education (Ministério da Educação – MEC) and the Ministry of Health. The PSE aims to "[...] to contribute to the holistic development of students in the public basic education system through actions aimed at health prevention, promotion, and care." (Brasil, 2007).

As indicated by analyses of the documents guiding the program, the proposal to develop activities related to issues such as drugs, food and eating, and personal hygiene habits is primarily intended to identify and diagnose practices considered harmful. Subsequently, interventions are implemented based on an individualized approach to behaviors and preventive health habits (Mulinari, 2018; Mulinari, 2023). Furthermore, Mulinari (2023) states that:

> Although the program seeks collaborative and intersectoral work, there are indications that the health sector has assumed a leading role at both the ministerial and professional levels, since education professionals are commonly positioned at the margins of the program's implementation and development processes. The literature also reports the predominance of a diagnostic-prescriptive evaluative model in program activities, in which behavioral change is treated as one of the necessary goals for addressing problems affecting children and adolescents. (p.65)

Once again, there is a predominance of perspectives grounded in the field of health over those based on pedagogical knowledge. Presidential Decree No. 6.286/2007 does not engage directly with the issue of food and eating. The term appears only once, in Article 4, Section III, where *the promotion of healthy eating* is listed among the program's health-related actions (Brasil, 2007). However, the decree provides no direct indication of what should be considered healthy in the organization of these initiatives.

It is through the thematic handbook *School Health Program: Healthy Eating and Obesity Prevention* (Programa Saúde na Escola: Alimentação Saudável e Prevenção da Obesidade) (Brasil, 2022) that the PSE addresses food and eating in greater detail. The handbook aims to provide resources that enable program administrators to meaningfully engage with the program contents, potentialities, and forms of coordinated action within the territories where health and education intersect (Brasil, 2022). Within the context of this policy, food and eating are considered one of the pillars of Health Education, as they promote debate concerning food choices, cultural values, regional identities, and social practices (Brasil, 2022).

Its approach to the Promotion of Adequate and Healthy Eating (Promoção da Alimentação Adequada e Saudável – PAAS) is based on documents such as the Reference Framework for Food and Nutrition Education and the Dietary Guidelines for the Brazilian Population (Guia), both of which adopt a multidimensional understanding of food and eating encompassing biological, sociocultural, economic, and environmental dimensions. This perspective is explicitly formulated as an attempt to move beyond nutritionism. Nevertheless, because of its reductive focus on the nutritional composition of foods and its reductionist interpretation of

the role of nutrients in bodily health, the PSE still contains elements that resemble a biologically oriented nutritionist approach.

The legislation governing school feeding within the PNAE, which constitutes one of the central axes of the PSE, establishes restrictions and limits regarding nutrient consumption. The focus on these components, in itself, reflects a characteristic feature of nutritionism, particularly of the "good versus bad" era of nutritionism. In the PSE's thematic handbook, it is recommended that school meal menus observe the "[…] limited provision of added sugar, fats — including saturated and trans fats […] as well as sodium content." (Brasil, 2022, p. 17). The document also establishes restrictions on the procurement of processed and ultra-processed foods, as well as prohibiting the acquisition of soft drinks, powdered juices, and similar products, justified on the basis of their low nutritional quality (Brasil, 2022).

The issue itself is not agreement with the NOVA classification system, adopted by the Guia, but rather the emphasis on the idea that oils, fats, salt, and sugar should be used "[...] in small quantities" because they contain high levels of nutrients whose consumption may be harmful to health, such as "saturated fats, sodium [...] and free sugars" (Brasil, 2014, p. 35).

It is important to recognize that, despite employing this language of nutrients and disease, the broader framework of the PSE and of the documents that support it, such as the second edition of the Guia, actively seeks to move beyond nutritionism — a paradox that simultaneously reveals the contradictory nature inherent to public policies. Policy reform movements, even when guided by counter-hegemonic perspectives, do not produce complete ruptures. For this reason, we argue for the importance of identifying those elements that enable movement toward overcoming reductionist approaches.

REFERENCE FRAMEWORK FOR FOOD AND NUTRITION EDUCATION (REFERENCE FRAMEWORK)

To some extent, the proposals advanced by the PSE and the recent changes introduced within the PNAE are aligned with the Reference Framework for Food and Nutrition Education in Public Policies (Reference Framework) (Brasil, 2012). This document represented an important step forward in addressing the gap that had long characterized EAN, which was described as being "[…] everywhere and, at the same time, nowhere to be found." (Brasil, 2012, p. 14). The Reference Framework provides a definition of EAN that serves as a guide for all public policies implemented across the various fields of EAN practice:

> Food and Nutrition Education, within the context of realizing the Human Right to Adequate Food and ensuring Food and Nutrition Security, is a field of knowledge and of continuous and ongoing practice that is transdisciplinary, intersectoral, and multiprofessional, aimed at promoting the autonomous and voluntary adoption of healthy eating habits. The practice of EAN should make use of problem-posing and active educational approaches and resources that foster dialogue with individuals and population groups, considering all stages of the life course, all stages of the food system, and the interactions and meanings that shape eating behavior. (Brasil, 2012, p.23)

The “Reference Framework” also aims to guide concepts and actions and to promote reflections and practices within the field of EAN, focusing primarily on public action. Its participatory construction took place through public consultation processes and intersectoral dialogue across different fields of knowledge (Brasil, 2012). Amparo-Santos (2013) argues that the “Reference Framework” reflected a commitment to democracy and transversality, aligning itself with the principle of active participation of subjects. The framework proposed in the document establishes the school as a space for EAN practice, characterizing it as intersectoral and transdisciplinary, with culture placed at the center of its approach. This perspective recognizes that food and eating involve traditions, affections, and identities, valuing local culinary practices and integrating popular forms of knowledge to promote health while respecting diversity. Such an approach challenges traditional biomedical models by proposing a form of EAN that articulates nutrition, culture, and sustainability (Amparo-Santos, 2013).

We understand the “Reference Framework” as moving away from prescriptive and decontextualized conceptions that disregard the sociocultural dimensions of food and eating. It is a document that advances the concept of EAN by prioritizing individuals’ critical reflection, as emphasized in its fifth guideline:

> Strengthening active participation and expanding degrees of autonomy in food choices and eating practices imply, on the one hand, enhancing individuals’ capacity for interpretation and analysis. Faced with countless possibilities for consumption, as well as dietary rules and prescriptions, making active and informed decisions means recognizing possibilities, being able to experiment, decide, and reorient one’s practices, that is, expanding degrees of freedom in relation to the aspects involved in eating behavior. In this sense, EAN should broaden its approach beyond the mere transmission of knowledge and foster situations that encourage reflection on everyday circumstances, the search for solutions, and the practice of alternatives. (Brasil, 2012, p. 27-28).

The “Reference Framework” therefore promotes guidelines aligned with approaches that emphasize autonomy in food choices, without restricting themselves to isolated nutrients or pathologies. This makes it a valuable instrument for rethinking issues related to food and eating, advancing the concept of EAN from the 2010s onward. Nevertheless, it is important to emphasize that EAN continues to encompass a wide range of interpretations across official documents, making the concept inherently polysemic.

Although EAN has undergone a conceptual evolution by approaching food and eating through new guidelines and extending its perspective to cultural, social, historical, and physiological dimensions, the “Reference Framework” indicates that EAN continues to face structural and cultural obstacles that directly affect the work of education and nutrition professionals (Brasil, 2012). For education professionals, such as teachers and school administrators, the challenge lies in incorporating EAN transversally into school curricula. Healthy eating is often treated as an isolated topic, disconnected from broader pedagogical projects, reflecting both the lack of guiding materials and the absence of a structured intersectoral agenda (Brasil, 2012). Continuing professional education initiatives, when available, do not always approach food and eating as a human right, frequently limiting themselves to technical guidelines disconnected from local realities. Furthermore, continuing education programs are often paradoxically discontinuous and poorly connected to the everyday realities of professionals. For

educators, this frequently translates into sporadic forms of training that remain detached from the realities of school life.

In her reflections on the "Reference Framework" within the academic sphere, Amparo-Santos (2013) critically focuses on the challenges surrounding the training of nutritionists, without specifically addressing the preparation of basic education teachers. Nevertheless, her analysis offers insight into what appears to be the field most directly affected by EAN according to the documents examined thus far. The author highlights that EAN, as a discipline within nutrition programs, faces significant curricular limitations, often being restricted to a single course linked to Public Health, with limited practical workload and little room for interdisciplinary approaches capable of integrating cultural, historical, or political dimensions of food and eating (Soares & Aguiar, 2010). Furthermore, Amparo-Santos (2013) points out that teacher education in this field remains precarious, with educators frequently working in a self-taught manner, lacking specialization in EAN and relying on a still limited body of scientific literature to support their practices. In this sense, the author understands the "Reference Framework" as an important starting point for overcoming such difficulties.

Drawing on analyses of EAN initiatives in Brazil, the paper by Ottoni, Domene & Bandoni (2019) argues that the implementation of Food and Nutrition Education in schools, even when aligned with the "Reference Framework", continues to face significant challenges, particularly regarding the role of teachers. Despite the Framework's emphasis on interdisciplinary, cultural, and participatory approaches, passive methods inherited from the Cartesian biomedical model continue to predominate, prioritizing technical information about nutrients at the expense of the sociocultural dimensions of food and eating (Ottoni, Domene & Bandoni, 2019).

The main challenges identified by the authors included inadequate training grounded in the biomedical model, with limited integration of the human and social sciences; insufficient investment in continuing education programs; and inadequate curricular content, characterized by an excessive emphasis on nutrients and limited recognition of the symbolic and affective dimensions of eating, contrary to the guidelines established by the "Reference Framework" (Ottoni, Domene & Bandoni 2019). Within the school context, Filho and Rocha (2023) arrive at preliminary conclusions that converge with those of Amparo-Santos (2013) and Ottoni, Domene & Bandoni (2019), arguing that EAN continues to face difficulties due both to the lack of teacher education among basic education professionals and to the limited number of studies capable of broadening discussions surrounding the challenges inherent to EAN. Similarly, Mulinari (2023) emphasizes that, within science education, prevailing tendencies continue to rely on prescriptive methodologies and fragmented understandings of content, even though official documents such as the PSE, the PNAE, and the "Reference Framework" adopt a broader understanding of health and food and eating.

When addressing food and eating as a thematic axis within Health Education, it is also important to highlight that, beyond the PSE and the PNAE, there are other programs and public policies that emphasize EAN, such as the National Food and Nutrition Security Policy (Política Nacional de Segurança Alimentar e Nutricional), the Dietary Guidelines for the Brazilian Population (Guia), and the National Food and Nutrition Security Plan (Plano Nacional de Segurança Alimentar e Nutricional).

Within these documents and initiatives, food and eating are understood as social practices that extend beyond their biological dimension (Brasil, 2012; Brasil, 2014; Brasil, 2018). In what follows, we present the "Reference Framework" as a horizon of possibility for the critical practice of professionals engaged in EAN. More specifically, we seek within it foundations for a practice that opposes nutritionism.

The "Reference Framework" was developed with a clear philosophical and practical intention of moving beyond nutritionism. The document offers a historical critique of EAN for its often discriminatory character and for reducing food and eating to their biological dimension, proposing instead a multidimensional approach encompassing biological, sociocultural, environmental, and economic dimensions. Nevertheless, although the conceptual framework of the "Reference Framework" is explicitly opposed to nutritional reductionism, it must still address biological and health-related outcomes, and it is precisely in this area that discourses emerge which may align with or resemble nutritionist approaches due to their focus on specific components and on the medicalization of food for disease prevention.

The "Reference Framework" establishes EAN as an intervention strategy directed toward concrete health problems, describing it as a "[…] a fundamental strategy for the prevention and control of contemporary food and nutrition-related problems" (Brasil, 2012, p. 13). In addition, the document states that one of the potential outcomes of EAN is its contribution to the "prevention and control of chronic noncommunicable diseases (NCDs) and nutritional deficiencies" (Brasil, 2012, p. 13). Scrinis (2021) emphasizes that, during the era of functional nutritionism, the focus on nutrients became closely associated with the prevention and overcoming of diseases. A similar logic appears in the "Reference Framework", which specifies that EAN should address nutrition and food and eating from the perspective of preventing nutritional problems ranging from malnutrition, including specific nutritional deficiencies, to obesity.

Although the "Reference Framework" understands food and eating as practices situated historically and culturally, it still defines healthy and adequate food according to criteria grounded in traditional nutritional science, including the control of specific risks, which resembles the reductionist emphasis on isolating the "bad" nutrient or component:

> Healthy eating should comply with the principles or "laws of eating" concerning quantity, quality, adequacy, and harmony, providing in a balanced way the total caloric and nutrient intake required by the organism [...] (Brasil, 2012, p.30).

The reductionist approaches present in the "Reference Framework" are those concerned with the biological and sanitary dimensions of food and eating, particularly when addressing the prevention and control of specific diseases (NCDs and nutritional deficiencies) and the need to ensure that nutrient intake is sufficient and balanced. Nevertheless, the document itself employs this language with the explicit intention of situating it within a much broader framework centered on human rights and sustainability. Thus, although certain passages of the "Reference Framework" display characteristics associated with functional nutritionism, there is a clear attempt to frame EAN beyond a reductionist perspective.

O GUIA ALIMENTAR PARA A POPULAÇÃO BRASILEIRA (Guia)

The first edition of the Dietary Guidelines for the Brazilian Population (Guia) was published in 2008, establishing the foundations for national dietary guidelines by proposing recommendations based on food groups and daily portions. This approach was inspired by the food pyramid model, adapted to the Brazilian context (Ambrosi & Grisotti, 2022). The 2008 edition of the Guia presented significant limitations, as it was grounded in a nutritionist perspective centered on portions and isolated nutrients, disregarding the impact of industrial processing on the nature of foods. This approach failed to distinguish between foods such as whole grains and ultra-processed breakfast cereals, treating them in a largely homogeneous manner (Ambrosi & Grisotti, 2022).

Although widely used by nutritionists to guide caloric intake, this form of classification failed to engage with global transformations in food systems, such as the increasing presence of ultra-processed products, as well as with emerging evidence regarding the association between these products and the rise of chronic noncommunicable diseases, including obesity and diabetes (Ambrosi & Grisotti, 2022).

It is important to note that the food pyramid, originally launched in 1992 by the United States Department of Agriculture, became the subject of substantial criticism over the years, particularly regarding its classification system, which was considered susceptible to misinterpretation by individuals. Menegassi et al. (2018) address this perspective by stating that:

> In terms of recommendations, overestimating nutrients and foods while underestimating or neglecting the industrial processing to which they are subjected means disregarding the enormous difference between, for example, a whole grain cereal and a “breakfast” cereal, the latter being manufactured through exclusively industrial technologies, such as corn flour extrusion, and containing large amounts of sugars, colorings, preservatives, among other food additives. Within the framework of the food pyramid, these two foods would be grouped together under cereals and tubers, which makes little sense. (p. 4166).

As an alternative to traditional food classification systems, professor and researcher Carlos Augusto Monteiro, together with the team from the Núcleo de Pesquisas Epidemiológicas em Nutrição e Saúde (NUPENS/USP), developed the NOVA classification system (Monteiro et al., 2010). This proposal organizes foods into four groups according to the degree and purpose of industrial processing: unprocessed and minimally processed foods (e.g., fruits, grains); processed culinary ingredients (e.g., salt, oil, sugar); processed foods (e.g., cheeses, traditional breads); ultra-processed foods (e.g., soft drinks, packaged snacks, cookies).

This approach served as the foundation for the second edition of the Guia, published in 2014. This edition represented a genuine paradigm shift by adopting the NOVA classification system and prioritizing the quality of foods themselves over purely nutritional metrics (Brasil, 2014). Regarding food processing, the Guia establishes fundamental distinctions between minimally processed foods, processed foods (such as artisanal cheeses or homemade pickles), and ultra-processed foods. Whereas the previous version (2008) focused on “how much to eat,” emphasizing portions and food groups, the new edition shifted toward “what to avoid” and “what to prioritize,” replacing quantification with qualitative

recommendations such as “prefer unprocessed or minimally processed foods” and “avoid ultra-processed products” (Brasil, 2014). This shift reflects a critical response to the epidemiological context of the twenty-first century, marked by the rise of chronic noncommunicable diseases, while also incorporating previously neglected dimensions such as environmental sustainability, the appreciation of regional food cultures, and equity in access to socially just food systems. In this sense, it advocates the strengthening of short food supply chains by encouraging direct access to producers through street markets, institutional markets, and public initiatives such as the Food Acquisition Program (Programa de Aquisição de Alimentos – PAA).

Andrade & Bocca (2016) emphasize that, by adopting the NOVA classification system, the Guia breaks the posture of neutrality that characterized earlier publications, advancing an explicit critique of the industrialization of food systems. This critique is associated with the consumption of ultra-processed foods and their links to health risks such as obesity, diabetes, and other chronic noncommunicable diseases, as well as to the negative environmental impacts generated by this model (Monteiro et al., 2010). The critique of ultra-processed foods also extends to the impacts these products exert on agricultural production.

The Guia discusses how ultra-processed foods are directly associated with practices such as intensive monoculture and the large-scale use of pesticides, factors that compromise biodiversity and environmental health (Brasil, 2014). In contrast, the document promotes family farming and highlights agroecology as a productive model that respects natural cycles, traditional forms of knowledge, and the conservation of natural resources. Furthermore, the Guia promotes the appreciation of Brazilian food culture by recovering regional culinary preparations and practices such as commensality, recognizing food and eating as social and cultural practices (Brasil, 2014). This perspective directly aligns with the “Reference Framework” in affirming that eating is also an act of identity, belonging, and cultural expression.

Another distinguishing feature of this policy lies in the incorporation of the social dimensions of food and eating. The Guia encourages eating in the company of others and in appropriate environments, emphasizing pleasure and the relational dimension of meals. Added to this is a critical stance, grounded in scientific evidence, toward ultra-processed foods, reinforcing the adverse effects these products have on health.

In addition to following the central structure proposed by the “Reference Framework”, the Guia advances significantly by breaking with the normative and imperative tone present both in its previous edition and in documents from other countries (Andrade & Bocca, 2016). In its place, the document adopts a more orientative and grounded approach, offering recommendations that acknowledge the real challenges faced by the population, such as the high cost of healthy foods, lack of time for cooking, and the strong influence of advertising (Andrade & Bocca, 2016).

In this context, the Guia proposes a contextualized approach to food and eating grounded in everyday realities, one that promotes critical reflection on what people eat, how they eat, and why they eat. By recognizing different social, cultural, and economic realities, the Guia respects individual autonomy and values

the right to make choices. Ultimately, its recommendations do not impose forms of conduct but rather provide the conditions for individuals to make conscious decisions based on the resources, knowledge, and circumstances available to them.

In summary, the Guia articulates health and sustainability by linking healthy eating to local, agroecological, and socially just food systems. Its integrative approach reinforces the central role of family farming in food security and health promotion, highlighting the need for intersectoral public policies capable of translating these guidelines into concrete actions (Brasil, 2014; Andrade & Bocca, 2016).

Although the Guia has inspired food policies in countries such as Canada, Uruguay, and France, and has received recognition from international organizations such as the Pan American Health Organization and the Food and Agriculture Organization (FAO), it continues to face criticism within the national context, particularly regarding some of its definitions (Ambrosi & Grisotti, 2022). Although critiques of the Guia are shaped by conflicting interests, one of the central points of tension lies in the categorization of foods according to the NOVA classification system, which has revealed practical challenges, including among health professionals (Menegassi et al., 2018). Furthermore, the NOVA classification system has not yet been widely disseminated among the general public, which limits its effectiveness.

In its second edition (2014), the Guia is fundamentally a document grounded in a multidimensional approach to food and eating encompassing biological, sociocultural, economic, and environmental dimensions, and was developed with the explicit intention of moving beyond nutritionism. The document emphasizes the principle that food and eating involve more than the ingestion of nutrients and prioritizes the degree of food processing (through the NOVA classification system) rather than numerical targets focused on isolated nutrients, as was common in the food pyramid model. Even with this philosophy opposed to nutritionism, certain recommendations and the language used to justify restrictions on specific products may still be interpreted as elements that align with, or resemble, aspects of nutritional reductionism, particularly those associated with the “good versus bad” era of nutritionism, insofar as they continue to focus on isolated food components.

The Guia employs arguments grounded in specific nutrients to limit or discourage the consumption of certain products. This constitutes a central characteristic of the nutritionist approach. The recommendation to limit the use of oils, fats, salt, and sugar in cooking is justified by their high content of nutrients whose consumption may be harmful to health (Brasil, 2014). The nutrients explicitly identified as requiring restriction due to health risks are saturated fats, sodium (the basic component of table salt), and free sugars. The Guia emphasizes that excessive consumption of these components is directly associated with an increased risk of heart disease, obesity, dental caries, and several other chronic diseases.

In addition, there is a strong emphasis on caloric density and the prevention of chronic diseases, given that nutritionism frequently reduces food to a substance mobilized for the treatment or prevention of specific health conditions, a process associated with the medicalization of food. The Guia discusses the complexity of

issues related to food and eating. However, it repeatedly resorts to the language of chronic disease prevention and caloric control in order to reinforce its recommendations. In other words, although the structure and intentions of the document are designed to reject nutritionist ideology by focusing on food itself and on its social and environmental dimensions, it still relies on nutritional reductionism as a central biological rationale underlying its recommendations.

TOWARD AN EDUCATION BEYOND NUTRITIONISM

We argue that the Guia represents a landmark in the field of food policies by articulating health, culture, and sustainability within a single framework. However, its full effectiveness depends on intersectoral actions ranging from the strengthening of family farming to confronting the economic interests that sustain the hegemony of ultra-processed foods. Investment in broad educational strategies, combined with the development of transparent regulations and incentives for the production and consumption of local foods, may strengthen the Guia's role as an essential framework for promoting health and food equity in Brazil.

As previously discussed, food and eating play a central role in education and in the formation of habits that shape health throughout life. For this reason, public policies and curricular frameworks emphasize the need to integrate knowledge and practices that encourage choices regarded as more conscious and healthier. Nevertheless, studies such as those conducted by Mulinari (2018; 2023), together with the reflections of Venturi (2018), demonstrate that the challenge extends beyond the distribution of guidelines or prescriptive nutritional materials. It is crucial to foster an approach that recognizes the plurality of factors shaping individuals' relationships with food, without emphasizing blame or control. Only in this way can Health Education fulfill its transformative role, fostering a form of citizenship that understands food and eating as political, cultural, social, and, of course, biological acts.

In this sense, it is important to emphasize that even within the field of nutrition there exists a plurality of perspectives, and that food and eating cannot be understood solely through a strict biological lens, since they also involve issues such as cultural identity, taste, family habits, and affective memory. It is precisely this complexity that makes food and eating such a fertile theme for Health Education. Although current research in Health Education recognizes the importance of promoting knowledge and practices grounded in scientific evidence, contributing to the prevention of chronic diseases and the promotion of health (Brasil, 2022), it remains essential to move beyond a prescriptive model that reduces food and eating to the binary of correct/incorrect or healthy/unhealthy. Expanding the ways in which food and eating are approached makes it possible to recognize the multiple dimensions surrounding food practices, including the symbolic meanings attached to food, economic inequalities, regional traditions, agricultural production processes, sustainability, among other factors. For this to be possible, it is necessary to position ourselves against the paradigm of nutritionism.

The debates proposed by Scrinis (2021) help illuminate how ideas about what constitutes healthy food undergo continuous transformations shaped by science, cultural traditions, and market interests. The example of eggs, which in certain periods were demonized and in others elevated to the status of a superfood, illustrates the shifting nature of nutritional knowledge (Scrinis, 2021). As further noted by Sichieri; Nascimento & Moura (2002):

> As the knowledge produced by Nutritional Epidemiology is transformed into a social rule, or norm, it becomes important to highlight its validity from the citizen's perspective. For example, its temporal character, that is, norms die. (p.111)

Recognizing that every norm is historically situated and therefore subject to transformation, it is urgent for the field of Health Education to develop new frameworks of reference. This requires breaking with the reductionist foundations of nutritionism and orienting its proposals through a critical perspective capable of understanding food and eating in all their complexity.

Our analysis of the policies guiding EAN in Brazil revealed that, despite conceptual advances in more recent regulations, nutritionism continues to operate as a hegemonic perspective. Its effects can still be identified in prescriptive educational practices, particularly those centered on correcting behaviors framed as problematic. The reproduction of this perspective keeps debates surrounding health and nutrition confined to a predominantly physiological framework, leaving aside questions related to culture, ethics, and the right to food.

Overcoming this legacy of nutritional sciences will require a willingness to reorient our practices by transforming the objectives that guide them. For example, a teacher adopting this perspective may address issues related to food and eating in the classroom without expecting students to begin choosing supposedly healthier foods. It is essential that we recognize the dynamic character of living systems, given that health is not a state of conformity, but rather the capacity to establish new norms of life (Canguilhem, 2009). From this perspective, eating comes to be understood as an act of meaning-making, belonging, and resistance.

This broader perspective views the school as a space for such processes of creation, prioritizing dialogue rather than forms of behavioral conditioning. Our critique of nutritionism goes beyond criticism, rather, what we have sought to construct here is an invitation to transformation. By recognizing the limits of nutritionism, we may move beyond perspectives grounded in control, surveillance, and discipline toward approaches centered on plurality, affectivity, and autonomy. For this reason, it is important that both initial teacher education and continuing educational programs incorporate epistemological debates concerning nutritionism and its consequences for Health Education. In this direction, public policies may be critically reappropriated in the construction of a form of Health Education committed to overcoming nutritionism. Such a movement creates possibilities for pedagogical practices that value the plurality of ways of eating and living. We conclude by reaffirming that, far beyond teaching what to eat, Health Education must invite us to critically reflect on what food and eating mean.

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NOTES

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