

## Child development as an intermediate element of food and nutrition in public policies

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### Abstract

*Objectives: to carry out a reflection in relation between food and nutrition along with child development.*

*Methods: a bibliographic survey of Brazilian public policies on food and nutrition, followed by a descriptive-reflexive analysis about its nuances facing child development.*

*Results: food and nutritional policies, although they do not bring the theme as the central axis of their actions, contemplating as an intermediate element dealing with the promotion of adequate and healthy food for the Brazilian population and the control and prevention of nutritional deficiencies, through food and nutritional education actions, national supplementation programs, addressed to the maternal and child population and the mandatory fortification of food.*

*Conclusions: despite the emphasis on food and nutritional programs, it is imperative to draw attention to the necessary integration along with other areas related to child development promoting them entirety.*

**Key words** *Child development, Child, Nutritional policy*



## Introduction

Although public policies on food and nutrition do not present child development as a central element of their fundamental prerogatives, they address the theme when acting on mediating factors, such as promoting adequate and healthy food and combating micronutrient deficiencies.

This reflection is necessary through the magnitude and complexity that involves child development. One in three children (200 million worldwide) cannot reach their full physical, cognitive, psychological and/or socio-emotional potential. Overall, 25% of the children have their development compromised.<sup>1</sup>

In biological terms, child development comprises physical growth, biological maturation and skills acquisition. This process is the result of the interaction between biopsychological and environmental factors and occurs in complex and sequenced stages, which causes cumulative changes in early life, especially in the first thousand days of life, generating a lost potential that is not always recoverable.<sup>2</sup>

During this phase there is also a greater brain growth, establishing foundations for the development throughout the rest of its life. About 700 new neural connections are formed every second. Thus, the first years of life are the foundation for success in school and later in the work environment and community.<sup>3</sup>

Nutritional risk factors for the child's development are: low diet quality and micronutrient deficiency during pregnancy; late and non-exclusive onset of breastfeeding, micronutrient deficiency (vitamin A, iron, zinc and iodine, low birth weight, prematurity and small newborn for gestational age, as well as acute and chronic malnutrition during the first two years of life.<sup>4</sup>

It is known that malnutrition in children is one of the main causes of infant mortality in the world and that even with the advances of public policies committed to changing this reality, Brazil still lives with rates above what is found in developed countries. These indices still vary depending on the region, due to the large territorial extension that it has, which tends to accentuate socioeconomic differences and, consequently, the distribution of income, and these parameters are used as indicators to characterize the economic, political and social inequalities of the country.<sup>5</sup>

It is known that children with intrauterine or malnourished retardation growth in the first years of life have a tendency to dodge from school and repeat grades, risk of involvement in violence and criminal activities, and low intelligence quotient.<sup>6</sup> Thus, it is essential to ensure adequate nutrition, healthy growth and early stimulation, in order to promote the full development of the child's potential.<sup>6</sup>

Therefore, the promotion of child development is of importance and permeates different areas, although the present study focuses on the factors that it maintains the relation with food and nutrition, reflecting on its contributions, especially in the first thousand days of life, as well as the necessity of overcoming the fragmentation of actions. Such a measure could be sufficient for the theme of development, even if an intermediate element of food and nutritional policies assume the necessary integrality.

## Foundation

The maternal child group appears, within the history of public policies on food and nutrition, in Brazil in the 1970s. Its high biological and social vulnerability made it a target audience for policies that concentrated its activities from food distribution to more integrated actions such as the *Programa Nacional de Alimentação e Nutrição I e II* (Pronan) (National Food and Nutrition Program I and II In Pronan II, stood out as important elements to promote child development, the *Programa Nacional de Incentivo ao Aleitamento Materno* (PNIAM) (National Breastfeeding Incentive Program), the *Programa de Combate às Carências Nutricionais Específicas* (PCCNE) (Program to Combat Specific Nutritional Deficiencies) and the *Sistema de Vigilância Alimentar e Nutricional* (SISVAN) (Food and Nutrition Surveillance System), were subsequently modified and incorporated into other programs.<sup>7</sup>

What is observed throughout the history of public policies on food and nutrition is that, as the theme becomes a prominent place on the political agenda, the actions and programs that contribute to child development are strengthened, especially when they are inserted in the field of intersectoral and multiprofessional action. Without this dialogue between nutrition and other areas, it is impossible to meet the integrality of care that guarantees the full potential of the child and respect for his/her constitutional rights.

This perspective at integrality of care is contemplated in the *Marco Legal da Primeira Infância*<sup>8</sup> (Legal Framework of Early Childhood), which established principles and guidelines for the formulation of public policies to more effectively meet the children's rights in early childhood, overcoming the segment of actions, increasing the effectiveness of policies aiming at childhood and defining strategies of intersectoral articulation.

Thinking about this perspective and aligned with the *Marco Legal da Primeira Infância* (Legal Framework of Early Childhood), the *Programa Criança Feliz* (Happy Child Program) was established (Decree number: 8,869, on October 5, 2016),<sup>9</sup> which shows that the achievement of the integral development of children in early childhood results from the articulation between social assistance policies,

health, education, culture, human rights, children and adolescents' rights, among others. Despite being a program that develops in the scope of social assistance, there is the need and possibility to strengthen its articulation with the *Políticas de Alimentação e Nutrição* (Food and Nutrition Policies), since its objectives provide for the integration, expansion and strengthening of public policy actions aiming for pregnant women, children in early childhood and their families and the mediation to access public policies and services they need.<sup>9</sup>

An analysis of the program reinforces the necessity to articulate between the different sectors of actions carried out in the program, which currently focus on home visits, and do not become only "a palliative action for those children who, belonging to a certain class, do not access services that are entitled to social assistance, health and education", but that can go beyond, thus providing greater resolution.<sup>10</sup>

In this scope, important elements stand out in the promotion of the integral development of children, inserted in the *Política Nacional de Alimentação e Nutrição* (PNAN) (National Food and Nutrition Policy), highlighted in the *Marco Legal da Primeira Infância: a Vigilância Alimentar e Nutricional* (VAN) (Legal Framework of Early Childhood: Food and Nutrition Surveillance), the monitoring of the health conditionalities of the *Bolsa Família* Program, the actions of *Promoção da Alimentação Adequada e Saudável* (PAAS) (Promoting Adequate and Healthy Food), the prevention and control of deficiencies by micronutrients. The VAN is of importance to promote the child's development by performing the continuous description and prediction of trends in food and nutrition conditions and their determining factors, enabling the constant evaluation and organization of nutritional care in the *Sistema Único de Saúde* (SUS) (Public Health Care) and the realignment of policies and actions that focus on improving the profile of child health and nutrition.<sup>11</sup>

In the primary care, it stands out as an essential element in this VAN process, the use and improvement of SISVAN, which should be present in the daily process of the teamwork, where "The VAN has to be seen and understood as children's RIGHT and a DUTY to perform in the healthcare network", the understanding and relevance of these rights and duties for the community be known as well.<sup>12</sup>

In addition, the SISVAN-Web records the health conditions of pregnant women and children under 7 years of age, beneficiaries of the *Bolsa Família* Program, which reinforce the guaranteeing the right to health and assisting in the development of human capital, which according to Victora *et al.*,<sup>13</sup> means: "The child reaches the height for which he/she has the genetic potential, to achieve the level of intelligence, to advance in school, to be economically productive as an adult and to have healthy children as well."

Another component of extreme relevance for the development of human capital, contemplated in the PNAN

are the actions of PAAS, which include the *Estratégia Amamenta e Alimenta Brasil*, (Strategy on Breastfeeding and Feeding Brazil), *o Programa Saúde na Escola* (Health School Program) and recently, *o Programa Crescer Saudável* (Healthy Growth Program).<sup>14</sup>

Thinking about the first thousand days of life, the food aspect that emerges is breastfeeding and healthy complementary feeding. The national scenario presents breastfeeding indicators far below those recommended by health organizations. In addition, there is the presence of the consumption of unhealthy foods such as sugar, sweets, candies, soft drinks and cookies/snacks already in the first year of life.<sup>15</sup>

Besides the nutritional benefits, exclusive breastfeeding in the first 6 months, followed by the introduction of healthy complementary food, reduce the risk of infection and malnutrition, contributing to the child's long-term health and acts on brain development, both due to nutrient-rich feeding and because of the positive socioemotional interaction of the mother-child dyad. It has been observed that children who is breastfed longer have greater intelligence than those who received or not, human milk for shorter periods.<sup>13,16</sup>

In order to strengthen actions to promote, protect and support breastfeeding and healthy complementary feeding, the Ministry of Health launched, in 2013, the *Estratégia Amamenta e Alimenta Brasil* (Strategy on Breastfeeding and Feeding Brazil), an action to support PAAS, resulting from the integration of the actions of the *Rede Amamenta Brasil* (Breastfeeding Brazil Network) and the *Estratégia Nacional de Promoção da Alimentação Complementar Saudável* (National Strategy to Promote Healthy Complementary Food). This promotion acts through the training of health professionals, based on permanent health education and as a basis for the critical-reflexive methodology. As a result of its implementation, until December 2017, 4,660 tutors were trained and 32,841 Primary Care professionals were qualified.<sup>17</sup>

Additionally, the new food guide for children under two years<sup>18</sup> was launched, an important nutritional education instrument for parents and all professionals involved in comprehensive child healthcare. This instrument presents important updates, such as the importance of responsive food and food recommendations based on food processing, a concept that has been working since 2014 in the *Novo Guia Alimentar para a População Brasileira*<sup>18</sup> (New Food Guide for the Brazilian Population).

It is also appropriate to mention the *Rede Brasileira de Bancos de Leite Humano* (Brazilian Network of Human Milk Banks) and the *Norma Brasileira de Comercialização de Alimentos para Lactentes e Crianças de 1ª Infância, Bicos, Chupetas e Mamadeiras* (NBCAL) (Brazilian Standard for Marketing of Food for Infants and Children at 1<sup>st</sup> Childhood, Nipples, Pacifiers and Bottles) as important

strategies to support and protect PAAS that favor the children's integral development.

In education, PAAS is contemplated in the *Programa Nacional de Alimentação Escolar* (National School Feeding Program), the *Programa Saúde na Escola* (Health School Program) and the *Programa Crescer Saudável* (Healthy Growth Program), whose actions are organized in line with the *Marco da Educação Alimentar e Nutricional* (Food and Nutrition Education Framework). These programs contribute to biopsychosocial growth and development, learning and school performance by providing nutrients that act in brain training, reducing social inequalities, providing an environment with incentives to the formation of healthy habits, when assessing students' health conditions, promoting health and preventing diseases and injuries, and empowering, permanently, health and education professionals, aiming to minimize both the indexes and the adverse factors caused by malnutrition and childhood obesity.<sup>19,20</sup>

Therefore, it is important to emphasize that micronutrient deficiency in pregnancy and childhood which can compromise the child's development. In Brazil, the concern is, above all, with vitamin A, iron, folic acid and iodine. The most effective strategies to combat these nutritional deficiencies have been mandatory of food fortification and supplementation, especially the *Programa Nacional de Suplementação de Vitamina A* (National Vitamin A Supplementation Program), the *Programa Nacional de Suplementação de Ferro* (National Iron Supplementation Program) and salt fortifications for human consumption with iodine and wheat and corn flour with iron and folic acid.

To reinforce the set of actions for prevention and control of anemia and micronutrient deficiencies in childhood, the Ministry of Health launched in 2014 the Strategy for strengthening infant feeding with micronutrient powder – NutriSUS, which acts both to prevent and control iron deficiency, anemia, as well as in improving micronutrient intake, reducing deficiencies and enhancing a child's full development.<sup>21</sup>

All these actions have contributed considerably to the reduction of child malnutrition and, consequently, infant mortality rates (IMR), but even with the advances, in recent years in Brazil, this rate has shown growth and many discrepancies depending on the geographic region, where the North and Northeast have more expressive rates when compared to the other regions. So, the cities that are more distant from the capitals, often have less economic power, end up not presenting significant reduction of this indicator, thus characterizing an inefficient governance that does not provide the population with economic and social conditions worthy in guaranteeing minimum care.<sup>22</sup>

For these reasons it is necessary to reflect on public policies on food and nutrition aiming to ensure the

minimum conditions for children to development, since they directly affect infant mortality rates, whose rates serve as parameters for international organizations to outline the panorama of human development of the living conditions of a given population. With this, countries with high IMR, and malnutrition, demonstrate an overview with very low levels of health, living conditions and economic development.<sup>23</sup>

In tracing an evolution of these rates, it is noticeable that Brazil had been presenting a more favorable scenario, through monitoring the development of political strategies over the years, which signaled an improvement in social determinants that could accentuate social inequalities and reflect on infant mortality rates. However, since 2015, when the country entered an economic and political crisis, coupled with a government project that put an end to many of the food and nutrition security policies, which were intended to combat hunger in the country, these rates declined.<sup>24</sup>

With the emergence of the COVID-19 pandemic there was a critical accentuation of this scenario, further evidence of the fragility remained in the social protection policies allied to the lack of governability in the search for strategies to minimize economic, social and health impacts, accentuating poverty in the country, which culminated in the return of hunger map.<sup>25</sup>

This economic and social situation is the result of numerous violations of the human right to food, which culminated in greater evidence of social inequalities in Brazil, where the poorest people are the ones who have suffered the most consequences. Thus, it is necessary an urgent intervention of the State to ensure public policies that guarantee food and nutritional security, in addition to acting in guaranteeing the right to food, because this way they are contributing to reduce hunger and, consequently, malnutrition.<sup>5,25</sup>

Since, child development has a direct correlation with the state of poverty of being the most vulnerable population, where, even with the advances in the Brazilian public policies that sought to place early childhood at the center of interventions, Brazil still lives with the scenarios of extreme poverty, which are the greatest obstacles to be circumvented by public actions and the consolidation of rights inherent to full development in an equal and universal way, social, economic and educational aspects.<sup>26</sup>

## Final considerations

Although food and nutrition policies have a broad central axis, their actions benefit child development, either through the battle against malnutrition, micronutrient deficiency, the promotion of breastfeeding and healthy complementary feeding, as well as the qualification of child's healthcare or through food and nutritional surveillance, these policies allow the child to structure

his/her learning bases and have a greater chance of social inclusion.

Considering that growth and development are predictors of human capital, social progress and the health of future generations, it is necessary to constantly monitor the child, especially at the beginning of life, receive proper care in the most diverse areas and that, the actions of food and nutrition are strengthened, in order to contribute and improve the development indicators of the nation by favoring the integral development of the individual.

### Authors' contribution

Claro ML, Sousa AF, Nobre RS and Lima LHO: participated in the conception, planning, analysis, interpretation and writing of the work. All authors approved the final version of the article and declare that there is no conflict of interest.

### References

1. Every Woman Every Child. The Global Strategy for Women's, Children's and Adolescents' Health (2016-2030): Survive Thrive Transform. Sustainable Development Goals [Internet]. 2015. [access in 2021 dez 28]. Available from: [https://globalstrategy.everywomaneverychild.org/pdf/EWEC\\_globalstrategyreport\\_200915\\_FINAL\\_WEB.pdf](https://globalstrategy.everywomaneverychild.org/pdf/EWEC_globalstrategyreport_200915_FINAL_WEB.pdf)
2. Souza JM. Desenvolvimento infantil: análise de conceito e revisão dos diagnósticos da NANDA-I. 2014. [Tese]. São Paulo: Escola de Enfermagem da Universidade de São Paulo; 2014.
3. Shonkoff JP, Boyve WT, McEwen BS. Neuroscience, molecular biology and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *JAMA*. 2009 Jun; 301 (21): 2252-9.
4. Christian P, Mullany LC, Hurley KM, Katz J, Black RE. Nutrition and maternal, neonatal, and child health. *Semin Perinatol*. 2015; 39 (5): 361-72.
5. Alves FR, Alves SR, Garófolo A, Modesto PC. Binômio desnutrição e pobreza: uma meta a ser vencida pelos países em desenvolvimento. *Rev Baiana Saúde Pública*. 2011; 35 (3): 744-57.
6. Black MM, Walker SP, Fernald LCH, Andersen CT, DiGirolamo AM, Lu C, *et al*. Early childhood development coming of age: Science through the life course. *Lancet*. 2017 Jan; 389 (10064): 77-90.
7. Jaime PC. Histórico das Políticas Públicas de Alimentação e Nutrição no Brasil. In: JAIME PC, organizadores. Políticas Públicas de Alimentação e Nutrição. 1st ed. Rio de Janeiro: Atheneu; 2019.
8. Centro de Estudos e Debates Estratégicos (CEDES). Avanços do Marco Legal da Primeira Infância. [Internet]. Brasília (DF): SEGRAF; 2016. [access in 2021 dez 28]. Available from: <https://www2.camara.leg.br/a-camara/estruturaadm/altosestudios/pdf/obra-avancos-do-marco-legal-da-primeira-infancia>
9. Conselho Nacional de Assistência Social (CNAS). Decreto N° 8.869 de 5 de outubro de 2016. Institui o Programa Criança Feliz. Brasília (DF): DOU de 5 out 2016; Seção 1, n.193, p.2. [access in 2021 dez 28]. Available from: [https://www.in.gov.br/materia/-/asset\\_publisher/Kujrw0TZC2Mb/content/id/21292775/do1-2016-10-06-decreto-n-8-869-de-5-de-outubro-de-2016-21292718](https://www.in.gov.br/materia/-/asset_publisher/Kujrw0TZC2Mb/content/id/21292775/do1-2016-10-06-decreto-n-8-869-de-5-de-outubro-de-2016-21292718)
10. Coutinho AS. As políticas para a educação de crianças de 0 a 3 anos no Brasil: avanços e (possíveis) retrocessos. *Laplage Rev*. 2017; 3 (1): 19-28.
11. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Política Nacional de Alimentação e Nutrição. 1st ed. 1st reimpr. Brasília (DF): Ministério da Saúde; 2013. [access in 2021 dez 28]. Available from: [https://bvsmms.saude.gov.br/bvs/publicacoes/politica\\_nacional\\_alimentacao\\_nutricao.pdf](https://bvsmms.saude.gov.br/bvs/publicacoes/politica_nacional_alimentacao_nutricao.pdf)
12. Lima AMC, Oliveira ML, Carvalho MFCC, Bortolini GA, Nilson EAF. As prioridades da Política Nacional De Alimentação e Nutrição (PNAN) para a primeira infância. In: Centro de Estudos e Debates Estratégicos – CEDES. Primeira Infância: avanços do marco legal da primeira infância. Brasília (DF): CEDES; 2016. págs: 202-215. [access in 2021 dez 28]. Available from: <https://www2.camara.leg.br/a-camara/estruturaadm/altosestudios/pdf/obra-avancos-do-marco-legal-da-primeira-infancia>
13. Victora C. Evidências científicas sobre a importância da primeira infância: A estratégia dos 1.000 dias. In: Centro de Estudos e Debates Estratégicos – CEDES. Primeira Infância: avanços do marco legal da primeira infância. Brasília (DF): CEDES; 2016. págs: 103-17. [access in 2021 dez 28]. Available from: <https://www2.camara.leg.br/a-camara/estruturaadm/altosestudios/pdf/obra-avancos-do-marco-legal-da-primeira-infancia>
14. Ministério da Saúde (BR). Secretaria de Atenção Primária à Saúde. Programa Crescer Saudável 2019-2020: Instrutivo. Brasília (DF): Ministério da Saúde; 2019. [access in 2021 dez 28]. Available from: [http://189.28.128.100/dab/docs/portaldab/documentos/pse/instrutivo\\_crescer\\_saudavel\\_2019\\_2020.pdf](http://189.28.128.100/dab/docs/portaldab/documentos/pse/instrutivo_crescer_saudavel_2019_2020.pdf)

15. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas e Estratégicas. II Pesquisa de Prevalência de Aleitamento Materno nas Capitais Brasileiras e Distrito Federal. 1st ed. 1st reimpr. Brasília (DF): Ministério da Saúde; 2009. [access in 2021 dez 28]. Available from: [https://bvsms.saude.gov.br/bvs/publicacoes/pesquisa\\_prevalencia\\_aleitamento\\_materno.pdf](https://bvsms.saude.gov.br/bvs/publicacoes/pesquisa_prevalencia_aleitamento_materno.pdf)
16. Nelson CA. A neurobiological perspective on early human deprivation. *Child Dev Perspect.* 2007; 1 (1): 13-8.
17. Venâncio SI. In: Jaime PC, organizadores. Políticas Públicas de Alimentação e Nutrição. 1st ed. Rio de Janeiro: Atheneu; 2019.
18. Ministério da Saúde (BR). Secretaria de Atenção Primária à Saúde. Departamento de Promoção da Saúde. Guia alimentar para crianças brasileiras menores de 2 anos. Brasília (DF): Ministério da Saúde; 2019. [access in 2021 dez 28]. Available from: [http://189.28.128.100/dab/docs/portaldab/publicacoes/guia\\_da\\_crianca\\_2019.pdf](http://189.28.128.100/dab/docs/portaldab/publicacoes/guia_da_crianca_2019.pdf)
19. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Instrutivo PSE. Brasília (DF): Ministério da Saúde; 2011. [access in 2021 dez 28]. Available from: [http://www.saude.ba.gov.br/wp-content/uploads/2017/07/DAB\\_INSTRUTIVO\\_PSE\\_2011.pdf](http://www.saude.ba.gov.br/wp-content/uploads/2017/07/DAB_INSTRUTIVO_PSE_2011.pdf)
20. Ferreira HGR, Alves RG, Mello SCRP. O Programa Nacional de Alimentação Escolar (PNAE): alimentação e aprendizagem. *Rev Seção Judiciária Rio J.* 2019; 22 (44): 90-113.
21. Ministério da Saúde (BR). Ministério da Educação. NutriSUS – Estratégia de fortificação da alimentação infantil com micronutrientes (vitaminas e minerais) em pó: manual operacional. Brasília (DF): Ministério da Saúde; 2015. [access in 2021 dez 28]. Available from: [https://bvsms.saude.gov.br/bvs/publicacoes/nutrisus\\_estrategia\\_fortificacao\\_alimentacao\\_infantil.pdf](https://bvsms.saude.gov.br/bvs/publicacoes/nutrisus_estrategia_fortificacao_alimentacao_infantil.pdf)
22. Pasklan ANP, Queiroz RCS, Rocha TAH, Silva NC, Tonello AS, Vissoci JRN, *et al.* Spatial analysis of the quality of Primary Health Care services in reducing child mortality. *Ciênc Saúde Coletiva.* 2021; 26 (12): 6247-58.
23. Kropiwieca MV, Franco SC, Amaral AR. Factors associated with infant mortality in a Brazilian city with high human development index. *Rev Paul Pediatr.* 2017; 35 (4): 391-8.
24. Marinho CSR, Ferreira MÂF. Evolução das políticas públicas frente à redução da mortalidade infantil e na infância no Brasil. *Res Soc Dev.* 2021; 10 (11): e474101119584.
25. Machado AL, França AB, Rangel TLV. Carestia, mapa da fome e o agravamento da insegurança alimentar e nutricional em tempos de pandemia: o retrocesso brasileiro na política de combate à fome. *Bol Conjuntura.* 2021; 8 (24): 87-101.
26. Araújo CMMO, Silva ÁRLF, Martins RDF, Macedo FLC, Silva CTS, Bezerra ICM. Políticas Públicas e a Primeiríssima Infância: avanços, limites e desafios. *Res Soc Dev.* 2021; 10 (12): e171101220184.

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