



# Relationships between vulnerability and child development: an integrative review

## Relações entre vulnerabilidade e desenvolvimento infantil: uma revisão integrativa

## Relaciones entre vulnerabilidad y desarrollo infantil: una revisión integradora

Regina Maria Ayres de Camargo Freire<sup>1</sup>

Isabela Pereira Garcia<sup>1</sup>

### Abstract

**Introduction:** The term vulnerability has been incorporated in several areas of knowledge and its use is increasingly frequent because its concept is broad and subjective, constituting a conjunction of factors, associated with different degrees, relationships with different people and in different spaces. Regarding childhood, it is considered that the child, from the moment of birth, is already inserted in the world in a scenario of vulnerability, given his dependence on the other. However, other diseases may pose a risk to its development. **Goal:** This study aims to identify and discuss, through an integrative review of articles selected in the Virtual Health Library (VHL) database, the relationship between vulnerabilities and child development, mapping the state of the art. **Method:** Inspired by Bardin, the data were categorized and analyzed to identify prevalent factors. **Conclusion:** It is concluded, after analyzing the studies surveyed, that there is a greater correlation between impasses in child development and social vulnerabilities and, in this type of vulnerability, the socioeconomic factor has greater expressiveness when analyzing risks to the child's development.

**Keywords:** Vulnerability; Child development

<sup>1</sup> Pontifícia Universidade Católica de São Paulo – PUCSP, São Paulo, SP, Brazil.

#### Authors' contributions:

RMACF e IPG: study organization; literature raising; data collection and analysis and elaboration of conclusions.

E-mail for correspondence: freire@pucsp.br

Received: 03/04/2024

Accepted: 15/07/2024





## Resumo

**Introdução:** O termo vulnerabilidade vem sendo incorporado em diversas áreas do conhecimento e seu uso é cada vez mais frequente por seu conceito se revelar amplo e subjetivo, constituindo-se em uma conjunção de fatores, associados a diferentes graus, relações com diferentes pessoas e em diferentes espaços. No que tange à infância, tem-se em vista que a criança, desde o momento do seu nascimento, já está inserida no mundo em um cenário de vulnerabilidade, dado sua dependência do outro. Contudo, outros agravos podem oferecer risco ao seu desenvolvimento. **Objetivo:** Este estudo tem como objetivo identificar e discutir, por meio de uma revisão integrativa de artigos selecionados na base de dados da Biblioteca Virtual de Saúde (BVS), a relação entre vulnerabilidade e desenvolvimento infantil, mapeando o estado da arte. **Método:** Inspirado por Bardin, os dados foram categorizados e analisados para identificar os fatores prevalentes. **Conclusão:** Conclui-se, após análise dos estudos levantados, haver maior correlação entre impasses no desenvolvimento infantil e vulnerabilidades sociais e, nestas, o fator socioeconômico tem maior expressividade quando se analisa riscos para o desenvolvimento da criança.

**Palavras-chave:** Vulnerabilidade; Desenvolvimento Infantil

## Resumen

**Introducción:** El término vulnerabilidad ha sido incorporado en diversas áreas del conocimiento y su uso es cada vez más frecuente debido a que su concepto es amplio y subjetivo, constituyendo una conjunción de factores, asociados a diferentes grados, relaciones con diferentes personas y en diferentes espacios. Con respecto a la infancia, se considera que el niño, desde el momento del nacimiento, ya está inserto en el mundo en un escenario de vulnerabilidad, dada su dependencia del otro. Sin embargo, otras enfermedades pueden suponer un riesgo para su desarrollo. **Objetivos:** Este estudio tiene como objetivo identificar y discutir, a través de una revisión integradora de artículos seleccionados en la base de datos de la Biblioteca Virtual en Salud (BVS), la relación entre vulnerabilidades y desarrollo infantil, mapeando el estado del arte. **Método:** Inspirados en Bardin, los datos se categorizaron, y se analizaron para identificar los factores prevalentes. **Conclusión:** Se concluye, tras analizar los estudios relevados, que existe una mayor correlación entre los impasses en el desarrollo infantil y las vulnerabilidades sociales y, en este tipo de vulnerabilidad, el factor socioeconómico tiene mayor expresividad a la hora de analizar los riesgos para el desarrollo del niño.

**Palabras clave:** Vulnerabilidad; Desarrollo del niño



## Introduction

‘Vulnerability’ is a term directly linked to being susceptible to some type of risk, fragility, or harm. The term gained prominence in the health field in 1980 with the epidemic of Acquired Immunodeficiency Syndrome (AIDS), as the disease is caused by a virus that attacks the system responsible for protecting the body against diseases, that is, the immune system, thus making people affected by such an infection vulnerable. Since then, the use of this term has become increasingly frequent, not only in the health field but in different areas of knowledge. Its concept is broad and subjective, and it can be associated with different degrees and origins of susceptibility that may aggravate suffering due to the particularities formed by a set of social and individual aspects. Thus, it can be said that vulnerability is a construct that occurs in relationships with different people and in different spaces <sup>1</sup>.

Although various categories of vulnerability are reported, such as economic, biological or organic, psychological, among others, the term vulnerability involves various factors and can be understood under the broader term of social vulnerability. This occurs when the disadvantage caused by harmful social conditions determines the degree to which a person’s life and livelihood are at risk due to a particular and identifiable event in health, nature, or society. A common way to estimate social vulnerability is through an index that aggregates social factors. <sup>2</sup>

The Social Vulnerability Index (SVI) arises from indicators that express conditions of social vulnerability. Such conditions can emerge from plural factors, such as income and work contexts, education and health, mobility, housing, and sanitation. The SVI is a synthetic index built with indicators that express the fragilities of these social factors <sup>3</sup>.

The concept of social vulnerability mainly refers to the three essential dimensions for ensuring the well-being of the general population – urban infrastructure, human capital, income and work – whose quality is largely the responsibility of the public authorities <sup>2</sup>.

Regarding childhood, the early years of a child’s life are extremely important, as it is during this phase that the main processes of neuropsychomotor development occur. During this period, constant cognitive, physical, and behavioral changes

take place because of the child’s interaction with the world around them <sup>4</sup>.

Thus, considering these concepts, this study aims to identify the relationship between vulnerability and child development through an integrative literature review. <sup>5</sup>

## Purpose

This study aims to identify the relationship between vulnerability and child development.

## Method

An integrative review was chosen for this study because it is the broadest methodological approach, allowing the inclusion of theoretical and empirical literature as well as experimental and non-experimental studies. This approach synthesizes available research on a topic from established databases, making the results more accessible for a comprehensive understanding of the topic <sup>5</sup>.

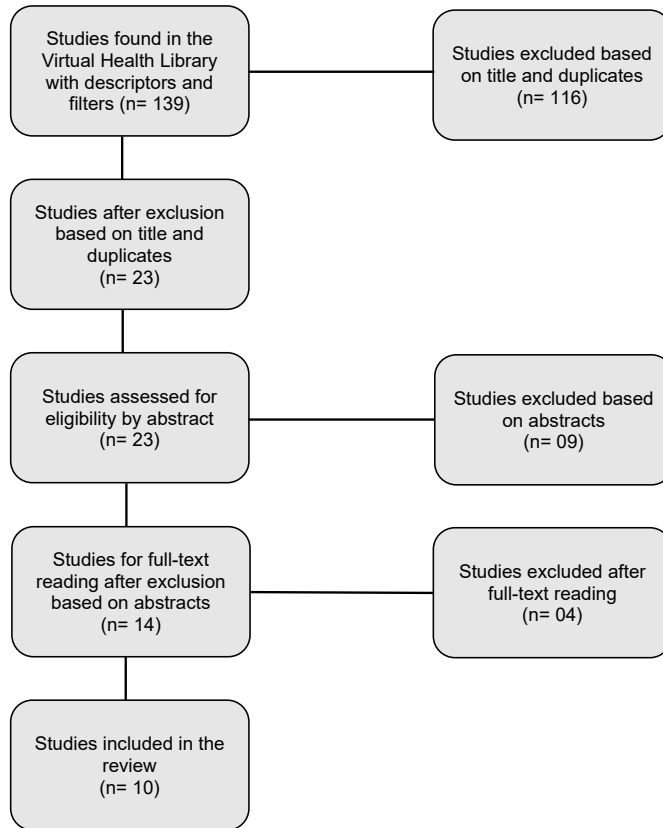
The first stage of this review began with the formulation of the guiding question: “What are the relationships between vulnerability and child development?”. The second stage involved searching for descriptors in Portuguese indexed on the Virtual Health Library (BVS) website. Both “vulnerability” and “child development”, in Brazilian Portuguese, were identified as descriptors.

Once the descriptors were defined, they were combined as follows: “vulnerability” AND “child development.” In the third stage, the databases to be consulted were selected. The Virtual Health Library (VHL) was chosen as it integrates other databases, such as LILACS, Medline, BDENF - Enfermagem, and Index - Psicologia. Additionally, filters were set for the search: free access and full-text articles; from the last 10 years (2014 – 2024)); and in Portuguese, English, and Spanish.

The fourth stage involved searching for articles, yielding 139 results. In the fifth stage, after analyzing the titles of the 139 selected articles, those that did not address the proposed topic were eliminated. A further analysis of the remaining articles was conducted, using abstract reading as an exclusion method to check their relevance to the guiding question. Review articles, theses,

and articles without available access were also excluded. Consequently, 10 articles were read in full and selected to compose this integrative review.

Figure 1 presents a detailed flowchart developed according to the selection process of the studies identified on the BVS website.



Source: Authors

**Figure 1.** Flowchart of the study selection process

## Results and Discussion

Considering the obtained results, an analysis of the articles was carried out, categorizing them according to Bardin's proposal.<sup>6</sup> This author proposes a qualitative analysis of studies and/or research, content analysis, which deepens the review by adding an explanatory character. To this end, Bardin suggests that, after reading the selected texts, themes that are interrelated or complementary should be identified and grouped into categories to investigate and discuss the results.

The reading of the 10 articles allowed the creation of the following thematic categories:

- a) Health promotion programs in early childhood (05 articles).
- b) Evaluation and intervention programs in the motor development area of children (02 articles).
- c) Relationships between fragile family ties and child development (03 articles).

Based on the analysis of the articles included in this review, a characterization of the studies included here was carried out (Chart 1).

**Chart 1.** Description of selected studies for integrative review.

Authors/Year	Category	Title
Patrick ME, Hughes MM, Ali A, Shaw KA, Maenner MJ. 2023	a)	Social vulnerability and prevalence of Autism Spectrum Disorder, Metropolitan Atlanta Developmental Disabilities Surveillance Program (MADDSP).
Munhoz et al. 2022	a)	Factors associated with child development in Brazilian children: baseline assessment of the impact of the Happy Child program
Delgado et al. 2020	b)	Assessment of child motor development and its association with social vulnerability
Santos G, Pieszak G, Gomes G, Biazus C, Silva S 2019	a)	Contributions of the Best Early Childhood program to child growth and development in family perceptions
Gonçalves T, Duku E, Janus M. 2019	a)	Developmental health in the context of an early childhood program in Brazil: the experience of the best early childhood program
Loosli L, Pizeta F, Loureiro S 2016	c)	School children living with recurrent maternal depression: Sex differences
Bergmann et al. 2015	a)	The experience of the Best Early Childhood Program (PIM) in Rio Grande do Sul
Costa C, Nobre G, Nobre F, Valentini N 2014	b)	Effect of a motor intervention program on the motor development of children at social risk in the Cariri Region – CE
Cavalcante L, Magalhães C, Reis D et al. 2014	c)	Comparative analysis of the profile of children in institutional care in the years 2004 and 2009
Silva D, Maftum M, Mazza V. 2014	c)	Vulnerability in child development: influence of weak family ties, chemical dependency, and domestic violence

Source: Authors

Most of the articles in the first category are dedicated to presenting and evaluating Government Programs established to intervene in the development of children broadly subject to vulnerabilities.

The first of these presents the “Primeira Infância Melhor” (PIM) [*Better Early Childhood*] program, an initiative to promote the integral development of early childhood. The Care Modalities of this program include home visits and weekly group activities with families in situations of risk and social vulnerability, with the aim of guiding them to promote the integral development of their children. It is based on the assumptions of Vygotsky, Piaget, Bowlby, Winnicott, Brunner, and recent neuroscience studies <sup>7</sup>.

The second article aimed to identify family and child characteristics associated with developmental health outcomes in children aged 4 to 6 years who participated in the Primeira Infância Melhor (PIM) program. They also assessed the impact of the PIM program on vulnerability concerning development at the beginning of schooling using a comparison group. A sociodemographic questionnaire, answered by the parents, and the Early Development Instrument (EDI), answered by the teachers, were used. Among the children participating in the PIM

program, factors such as lower family income, time out of the program, city, and younger age were associated with a higher risk of vulnerability in development and/or lower average scores in the EDI domains. These results are discussed in the context of the challenges that home visitation programs face in addressing the complex social conditions of high-risk families <sup>8</sup>.

The third article in this group, still focused on the Primeira Infância Melhor program, aimed to understand the families’ perceptions of the program’s impact on child growth and development, as well as the family care provided to the children. Data from 15 families were collected through semi-structured interviews and analyzed. The results indicated that growth and development are processes that occur together and recognized that vulnerability situations negatively interfere with child growth and development. Thus, the program facilitates the building of learning and the strengthening of effective family care. The importance of the program being incorporated into primary care as a strategy capable of strengthening health promotion and comprehensive care for the child and their family is emphasized <sup>9</sup>.

Another article relates types of vulnerability by evaluating family and individual factors associated with child development in the first year of life among families in social vulnerability. It finds that developmental scores in the first year of life were consistently lower due to organic determinants such as premature birth and growth restriction. Additionally, socioeconomic factors such as low maternal education, lack of support from the child's father during pregnancy, and having two or more children under seven years old living in the household are highlighted, reinforcing that social factors are crucial for child development and health.<sup>10</sup>

The last article in this category investigates the relationship between vulnerability and autism. This inclusion stems from the understanding that autism is a communication development disorder and also a public health issue. The research, which was conducted by the authors in Atlanta, Georgia, yielded interesting results. Based on data from the Social Vulnerability Index of the Atlanta Metropolitan Developmental Disabilities Surveillance Program, it was found that the overall prevalence of autism was higher in areas of low vulnerability<sup>11</sup>.

Regarding the second category, b) Evaluation and intervention programs in the motor development area of children, one of the articles evaluates the motor development of children aged 4 to 17 months and investigates its association with sociodemographic risk factors. To assess these factors, they used a questionnaire on biological, social, and environmental factors; for motor development evaluation, the Alberta Infant Motor Scale was used. Out of a total of 110 children evaluated, motor performance was below expectations in more than half of them. There was a statistically significant association between motor development and certain factors related to developmental risks, such as delayed vaccinations, exposure to smokers, and low family income/receipt of socioeconomic benefits<sup>12</sup>.

Another study aimed to verify the effect of a motor intervention program on the motor development (MD) of schoolchildren from a socioeconomically vulnerable community in the Cariri region, Ceará, Brazil. The study included 46 schoolchildren of both genders, aged between 7 and 9 years. The motor intervention was based on the proposal by Valentini and Toigo (2006) and the Proximal Processes by Bronfenbrenner and Morris (2007). Motor performance was evaluated using the Test of Gross Motor Development - Second

Edition (TGMD-2). The results showed a positive and significant effect on the motor development of the children in the intervention program. It was concluded that the didactic-pedagogical approach adopted proved effective in promoting the development of the schoolchildren's locomotor and manipulative skills, presenting itself as a viable alternative for promoting MD among elementary school children<sup>13</sup>.

Regarding category c) Relationships between fragile family ties and child development, the articles address the affective family relationship: in the first, vulnerabilities are behind the referral of children to foster homes<sup>14</sup>. In the second, even while living with their families, weak affective ties cause damage to child development. And in the third, a study is conducted with schoolchildren living with mothers who have recurrent depression<sup>16</sup>.

The first article provides a comparative analysis of the profile of children in institutional care over five years, highlighting the reasons for their institutionalization, the period of their lives during which this occurred, the duration of their stay in the institution, and how this affected them. The results indicate that the profile of the attended population has undergone significant changes: over five years, the age at which children entered the institution increased, which can prevent or mitigate the sequelae caused by the deprivation of parental care, but it also extended the time they remained in the service, thereby worsening their vulnerability condition. These data support the argument that it is necessary to monitor these and other characteristics of this child population over time to adapt the management of care services to their developmental needs<sup>14</sup>.

The other article aimed to understand nurses' perceptions of child development vulnerability. The subjects were 39 nurses working in 39 Municipal Health Units in Curitiba, Paraná, Brazil. Data were collected through semi-structured interviews, and the results indicated that, according to the nurses, child vulnerability is influenced by weak family ties, chemical dependency, and domestic violence. The study participants understand the society-family relationship as an adverse situation for child development. The use of the concept of vulnerability in the daily practice of nurses and the healthcare team allows for a critical analysis of their practices<sup>15</sup>. Applying this concept to childcare reorients the

care model, thereby overcoming the biological and fragmented concept of child development.

The last article presents a study involving 40 mother-child dyads from a clinical sample, which analyzed the behavior and school performance of children aged seven to 12 years, divided into groups by gender. It showed that girls exhibited more emotional symptoms, indicating that living with mothers with recurrent depression can be considered an adverse condition for development.

Deepening the relationship between social vulnerability and child development, it is worth highlighting that most studies emphasize socioeconomic issues as a significant risk factor for child development.

Finally, it was found that the studies differ greatly in various aspects, such as the methodology applied and the age of the participants in each study, ranging from the first months of life to early adolescence, as well as in the choice of instruments and the manner of conducting the evaluation.

## Conclusion

The articles reviewed in this study primarily focused on the broad concept of vulnerabilities. These vulnerabilities were analyzed in terms of their effects on motor development or their association with socioeconomic factors, both of which can hinder child development. The socioeconomic factor was found to be the most prevalent risk factor associated with child development.

These findings underscore the importance of further research on this topic, providing information about child development and the risk factors that can negatively impact this process. Ensuring that children experience optimal development should be a priority across all sectors to prevent developmental deficits from accumulating and affecting their future lives.

Although the number of studies reviewed was not exhaustive, it is important to acknowledge the limitations of this review, as it relied on only one database and yielded a limited number of articles addressing the initial question. Nevertheless, the objective of relating vulnerabilities and their impacts on child development was achieved. This review encourages other researchers to continue similar studies given the importance of understanding child vulnerability and preventing developmental risks, making it a crucial area of investigation.

## References

1. Florêncio RS, Moreira TM Modelo de vulnerabilidade em saúde: esclarecimento conceitual na perspectiva do sujeito-social. *Acta paul. enferm.* 34: eAPE00353, 2021.
2. Mah JC, Penwarden JL, Pott H, Theou O, Andrew MK. Social vulnerability indices: a scoping review. *BMC Public Health*, 28; 23(1): 1253, 2023.
3. Costa MAS et al. Vulnerabilidade social no Brasil: conceitos, métodos e primeiros resultados para municípios e regiões metropolitanas brasileiras (No. 2364). 2018.
4. Eyken E, Garcia C, Antunes T, Cavalcante AB, Xarles T, Ribeiro C. Conhecimento sobre desenvolvimento neuropsicomotor da criança. *HU Revista*, v. 41, n. 1 e 2, p. 23-31, 2015.
5. Souza M, Silva M, Carvalho R Revisão integrativa: o que é e como fazer. *Einstein*. 8(1 Pt 1): 102-6, 2010.
6. Bardin L *Análise de conteúdo*. São Paulo: Edições 70, 229 p., 2011.
7. Bergmann C et al. A experiência do Primeira Infância Melhor (PIM) no Rio Grande do Sul. *Bol. Inst. Saúde*, 16 (1): 49-58, 2015.
8. Gonçalves T, Duku E, Janus M Saúde desenvolvimental no contexto de um programa de primeira infância no Brasil: a experiência do Primeira Infância Melhor. *Cad. Saúde Pública*, 35(3): e00224317, 2019.
9. Santos G, Pieszak G, Gomes G, Biazus C, Silva S Contribuições da Primeira Infância Melhor para o crescimento e desenvolvimento infantil na percepção das famílias. *J. res.: fundam. care*. Online. 11(1): 67-73, 2019.
10. Munhoz T et al. Fatores associados ao desenvolvimento infantil em crianças brasileiras: linha de base da avaliação do impacto do Programa Criança Feliz. *Cad. Saúde Pública*, 38(2): e00316920, 2022.
11. Patrick ME, Hughes MM, Ali A, Shaw KA, Maenner MJ. Social vulnerability and prevalence of Autism Spectrum Disorder, Metropolitan Atlanta Developmental Disabilities Surveillance Program (MADDSP). *Ann Epidemiol.* 83: 47-53, 2023.
12. Delgado D et al. Avaliação do desenvolvimento motor infantil e sua associação com a vulnerabilidade social. *Fisioter. Pesqui.* 27(1): 48-56, 2020.
13. Costa C, Nobre G, Nobre F, Valentini N Efeito de um programa de intervenção motora sobre o desenvolvimento motor de crianças em situação de risco social na região do Cariri – CE. *Revista da Educação Física/UEM*, v. 25, n. 3, p. 353-364, 2014.
14. Cavalcante L, Magalhães C, Reis D et al. Análise Comparativa do Perfil de Crianças em Acolhimento Institucional nos Anos de 2004 e 2009. *Psico*, v. 45, n. 1, pp. 90-9, 2014.
15. Silva D, Maftum M, Mazza V Vulnerabilidade no desenvolvimento da criança: influência dos elos familiares fracos, dependência química e violência doméstica. *Texto & contexto enferm.* 23(4): 1087-94, 2014.
16. Loosli L, Pizeta F, Loureiro S. Escolares que convivem com a Depressão Materna Recorrente: Diferenças entre os Sexos. *Psicologia: Teoria e Pesquisa*. Vol. 32 n. 3, pp. 1-10, 2016.



This work is licensed under a Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.