

# Vulnerability and Primary Health Care: An Integrative Literature Review

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## Abstract

The objective was to analyze the evidence available in the scientific literature on the concept of vulnerability, in theoretical perspectives and its use, in Primary Health Care. An integrative literature review was carried out with the inclusion criteria: articles in English, full text, peerreviewed, related to vulnerability and primary health care, with the explicit concept of vulnerability, and published until July 31, 2020. The electronic databases accessed were by crossing the descriptors “vulnerability,” “vulnerabilities,” “primary health care,” “primary healthcare,” and “primary care.” The final sample consisted of 19 articles. The thematic analysis produced 2 themes: “Theoretical foundations of the concept of vulnerability” and “The use of the concept of vulnerability in PHC.” In the second theme, 2 sub-themes emerged: Evaluation of health policies, programs, and services and Classification of individuals, groups, and families. There was a plurality of theoretical foundations for the concept of vulnerability and a smaller scope of its use in Primary Health Care. It is expected that the study will subsidize public policymakers and health teams in the design of services and actions aimed at vulnerable populations and in situations of vulnerability.

## Keywords

primary health care, review, health vulnerability, concept formation, vulnerable populations

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## Introduction

Primary Health Care (PHC) is based on an in-depth knowledge of the territory where the people and families live, constituting one of the premises for the organization of health care practices. In PHC, the understanding of the individual, family, and community context allows an approximation with the social determinants of health (SDH). The World Health Organization (WHO) defines SDH as the circumstances in which people are born, grow up, live, and work, including the health system, and the economic, political, and social forces that shape them.<sup>1</sup> The recognition of the influence of social factors on people’s health conditions is a contemporary theme that has directed various public policies, in Brazil and around the world. An important concept that can decisively support the comprehension of the dynamics of the territory and the SDH of a given community and, consequently, increase the knowledge of PHC teams in relation to the dynamics of the lives of the communities who’s health they are responsible for is that of vulnerability.

Etymologically, the term would have originated from the words “vulnerare” (hurt, harm, harm) and bile (susceptible to).<sup>2</sup> In the field of Bioethics, vulnerability refers

to a state of being/being in danger or exposed to risk by an individual characteristic of the inherent fragility of human beings.<sup>2</sup> In health, this term has a broader connotation and is associated with the recognition that human beings may be susceptible to damage or risks due to social disadvantages.<sup>2</sup>

In the national and international scientific literature, there is relevant production on the theoretical aspects of the term vulnerability, in different areas of knowledge, such as geography, economics, environmental health, aging, legal, and social sciences.<sup>3</sup> In the health literature, many articles use the concept of vulnerability to indicate the potential risk of developing certain diseases or suffering from environmental hazards. There are many publications dedicated to the study

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of vulnerable populations and the consequences of vulnerability for a worse state of health. In particular, articles that discuss vulnerability and PHC generally address health inequalities by relating them to PHC attributes (accessibility, comprehensiveness, coordination, continuity, and accountability).<sup>3</sup> However, little is discussed about its conceptual scope and its applicability in the scenario of health systems, specifically in PHC.

It is essential to understand the founding characteristics of the concept of vulnerability, especially for the performance in the PHC, which carries out its practices in close connection with the territories. Identifying the most prevalent health problems and their determinants from the concept of vulnerability and its application can influence public policymakers and health teams in the programming and prioritization of actions based on the principle of equity.

Accordingly, the aim of this review was to analyze the evidence available in the scientific literature in relation to the concept of vulnerability, from the theoretical perspective, and its applicability, within the scope of PHC.

## Methods

The guiding question “What is the concept of vulnerability and its use in studies carried out in Primary Health Care?” was examined through a modified PICO strategy<sup>4</sup>: “P” Problem or target population of the study—Concept of vulnerability, “I” Intervention—Use of the concept in primary health care (PHC), “C” Control or comparison—without comparison, and “O” Outcome—Categorization of vulnerability in PHC.

### *Type of Study and Methodological Procedures*

An integrative literature review was carried out. This approach was chosen since it allows for the integration of concepts, ideas, and opinions in a broader approach for the phenomenon studied.<sup>5</sup> The review was based on 6 steps: identification of the theme and selection of the research question, establishment of inclusion and exclusion criteria, identification of the pre-selected and selected studies, categorization of the selected studies, analysis and interpretation of the results, and presentation of the knowledge review/synthesis.<sup>6</sup>

### *Inclusion and Exclusion Criteria*

The inclusion criteria defined for the literature search were: full, peer-reviewed articles available in English, related to vulnerability and primary health care, with the explicit concept of vulnerability and published prior to July 31, 2020. Dissertations, theses, reviews, editorial notes, and articles without access to the abstract and the full text were not included.

## Data Sources

The electronic bibliometric databases accessed, in the period from August to September 2020, were: National Library of Medicine through the PubMed portal, Scopus, Embase, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Latin American and Caribbean Health Sciences Literature (LILACS). For the search strategy in the 5 databases, the following keyword was considered: “Vulnerability”; “Vulnerabilities”; “Primary Health Care”; “Primary Healthcare”; and “Primary Care,” with the use of the Boolean operators “OR” and “AND.” DECS/MESH referred to these controlled descriptors. In the 5 databases, descriptors and the keyword were used in the English language (Table 1).

Table 1. The step for the selection of the studies was performed blindly by 3 reviewers using the Rayyan software.<sup>7</sup> Initially, the title and abstract were read, applying the inclusion criteria. Dissenting opinions regarding the inclusion of some articles were resolved by the 3 reviewers, in a consensual and face-to-face way, resulting in the composition of the final sample. Subsequently, the 3 reviewers read the selected articles in full. Data from the studies were extracted using a validated instrument<sup>8</sup> and the articles were classified according to the level of evidence.<sup>9</sup>

## Analysis

We describe the articles included according to the year of publication, title, authors, country, study design and 7 levels of evidence. Thematic analysis and synthesis of the evidence was conducted to examine the theoretical basis of vulnerability and its use in PHC. As this is a review article, the Prisma checklist was applied in the development of the study, observing the items relevant to the integrative review.<sup>10</sup>

## Results

The database search resulted in a total of 2869 articles. With the removal of duplicates, 1201 articles were obtained. After reading the titles and abstracts, 1163 articles were excluded as they did not fulfill the inclusion criteria, leaving 38 articles eligible for review. In-depth reading of the 38 articles led to the exclusion of 19 (50.0%) that did not answer the guiding question and/or for the following 5 reasons: 3 (15.8%) discussed the concept of vulnerability in relation to environmental conditions only; 8 (42.1%) did not discuss the concept of vulnerability in the PHC scenario, 5 (26.3%) discussed the concept of vulnerability applied to specific groups, such as pregnant women or older adults, without being related to the specific PHC scenario, 2 (10.5%) did not directly discuss the concept of vulnerability and 1 (5.3%) was a literature review (Figure 1).

**Table 1.** Database Search Strategy and Frequency of Results.

Database	Search strategy	Number of articles	%
PubMed	(vulnerability OR vulnerabilities) AND (“Primary Health Care” OR “Primary Healthcare” OR “Primary Care”)	1636	57.0
Scopus	TITLE-ABS-KEY (“Primary Health Care” OR “Primary Healthcare” OR “Primary Care”) AND TITLE-ABS-KEY (vulnerability OR vulnerabilities)	626	21.8
Embase	(vulnerability OR vulnerabilities) AND (“primary health care” OR “primary care” OR “primary healthcare”)	374	13.0
CINAHL	(vulnerability OR vulnerabilities) AND (“Primary Health Care” OR “Primary Healthcare” OR “Primary Care”)	130	4.6
LILACS	(tw:[vulnerability OR vulnerabilities]) AND (tw:[“primary health care” OR “primary healthcare” OR “primary care”])	103	3.6
Total		2.869	100

Accordingly, 19 articles constituted the final sample of the study. Of these 19 articles, ten (52.6%) were published in Brazil, 3 (15.8%) in the United States, 2 in Canada (10.5%), 2 in England (10.5%), 1 in the Netherlands (5.3%), and 1 in New Zealand (5.3%). Regarding the chronology, there was an increase in productions on the theme of vulnerability in PHC over the years, a fact also observed in Brazil, between the years 2015 and 2018. Of the 19 articles selected, 2 (10.5%) were characterized as level of evidence V and 17 (89.5%) as level VI, with a predominance of cross-sectional, descriptive studies, using qualitative analysis. Table 2 shows the articles included in this review according to the year of publication, title, authors, country, study design, and level of evidence.

The thematic analysis of the eligible articles produced 2 major themes: “Theoretical foundations of the concept of vulnerability” (Table 3) and “The use of the concept of vulnerability in PHC” (Table 4). In the second major theme, 2 sub-themes emerged: (a) Evaluation of health policies, programs, and services; and (b) Classification of individuals, groups, and families (Table 4).

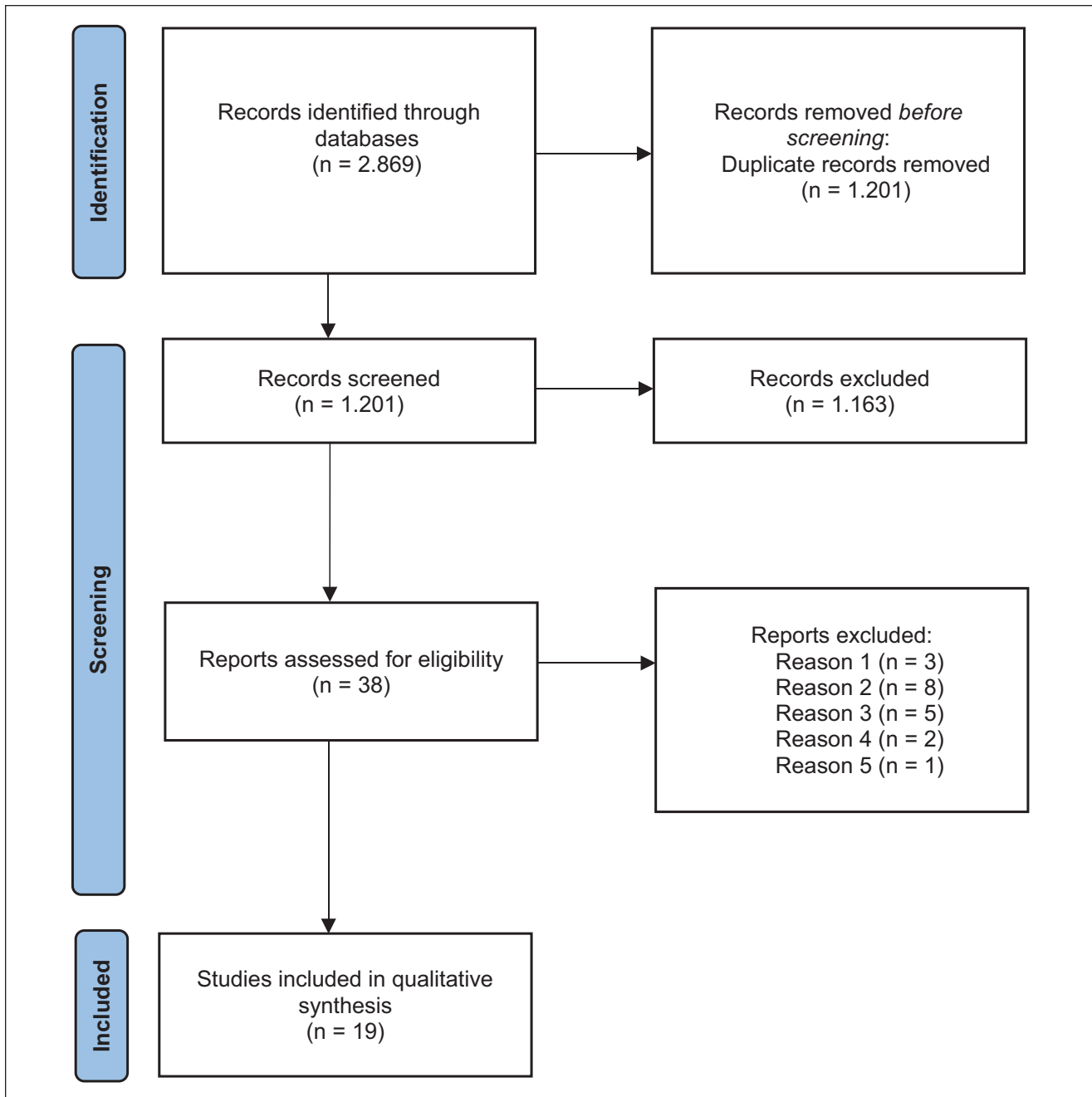
### *Theme 1: Theoretical Foundations of the Concept of Vulnerability*

The thematic analysis revealed that the authors included in this review, in order to conceptualize vulnerability, were supported by different theoretical references that, at times, complement each other and at other times differ due to the opposition of ideas. In 9 articles (47.4%) cited Ayres et al<sup>32,36</sup> 3 articles (15.8%) used Aday<sup>30,31</sup> as a reference. In 4 articles, the vulnerability concept was composed of more than one theoretical framework, with the following authors cited in the selected articles: Baker et al<sup>11</sup>; Fried et al<sup>33</sup>; Mann et al<sup>34</sup>; Barchifontaine<sup>35</sup>; Oviedo and Czeresnia<sup>37</sup>; Shi et al<sup>38</sup>; Mechanic and Tanner<sup>39</sup>; Seery et al<sup>40</sup>; Fineman<sup>41</sup>; Kittay<sup>42</sup>; Levinas<sup>43</sup>; Butler et al<sup>44</sup>; Bourgois et al<sup>45</sup>; Andrew et al<sup>46</sup> (Table 3). The articles based on the concept proposed by Aday<sup>30,31</sup> presented vulnerability as a result of the

combination or overlap of several risk factors that in a given period of time can lead to physical, psychological, and/or social health problems. The risk factors cited by the authors included: race, ethnicity, income, insurance coverage, self-perceived health, parenting, and the mother’s language. There was also a typification of vulnerability considering the subjective, biological, material, relational, and cultural components. Aday’s<sup>31</sup> discussion of vulnerability also considers that health care centered on economic practices, fragmented care, and limited access affects more specific population groups.

Similarly, Shi et al,<sup>12</sup> Stevens et al,<sup>13</sup> and Haidar et al,<sup>24</sup> supported by the concept of Aday,<sup>30</sup> recognized that isolated or overlapping risk factors impact the behavior of seeking health services and the condition of being healthy or recovering from a health problem. For these authors, health care directed toward vulnerable populations has to go beyond the needs of physical, social, and psychological health. It is essential to consider other elements of existing programs and policies that will support care and access to it, in the organizational and financial components, as well as to analyze the quality of the service provided and, consequently, its result. Accordingly, the authors emphasized that quality health care, provided in primary care,<sup>12,13</sup> mainly in the public health systems, has a potential to reduce the vulnerability resulting from various risk conditions, through the attributes of accessibility and continuity of care.

Loh<sup>23</sup> used the concept of Shi et al,<sup>38</sup> who also stated that vulnerability involves a set of risk factors that reinforce each other, being derived from the absence of material and social resources essential to human well-being, from the presence of risk behaviors and from the influence of environmental factors. These authors criticized the dichotomous models of vulnerability analysis and proposed another format in which individual and community risk factors converge. Loh<sup>23</sup> also cited Mechanic and Tanner<sup>39</sup> when highlighting that vulnerability can become chronic and cumulative during the life of individuals and that in vulnerable families traces of vulnerability can be transmitted



**Figure 1.** PRISMA flow diagram (adapted) of the selection process of the articles.

between successive generations. The author used the researchers Seery et al<sup>40</sup> to present resilience as an antonym for vulnerability. Resilience would involve successful adaptations to stress or traumatic life events, collaborating to avoid unfavorable outcomes in the person's health.

To study social vulnerability, Nguyen et al<sup>29</sup> used the definition by Andrew et al.<sup>46</sup> These authors argue that the term social vulnerability allows a holistic approach to the measurement of individuals' social circumstances.

Therefore, for them, social vulnerability would be different from the categorization by socioeconomic status or by the social determinants of health. The measurement of social vulnerability would be carried out using an index formed by various aspects of the social circumstances, consisting of 6 components: communication to engage in wider community, living situation, social support, social engagement and leisure, empowerment and life control, and socioeconomic status.

**Table 2.** Descriptive Analysis of the Articles Selected According to the Year of Publication, Title, Authors, Country, Design, and Level of Evidence.

Author	Title	Study country	Design	Level of evidence
Baker et al <sup>11</sup>	Inequalities in morbidity and consulting behavior for socially vulnerable groups.	England	Cross-sectional study	VI
Shi et al <sup>12</sup>	Vulnerability and the Patient–Practitioner Relationship: The Roles of Gatekeeping and Primary Care Performance	EUA	Cross-sectional study (survey)	VI
Stevens et al <sup>13</sup>	Disparities in Primary Care for Vulnerable Children: The Influence of Multiple Risk Factors	EUA	Descriptive study with a quantitative approach	V
da Silva et al <sup>14</sup>	Evaluation of the vulnerability of families assisted in Primary Care in Brazil	Brazil	Observational and cross-sectional epidemiological study	VI
Drewes et al <sup>15</sup>	Variability in vulnerability assessment of older people by individual general practitioners: a cross-sectional study	Netherlands	Cross-sectional study	VI
Guanilo et al <sup>16</sup>	Assessing the vulnerability of women to sexually transmitted diseases/STDs/HIV: Construction and validation of markers	Brazil	Methodological development study	V
Souza et al <sup>17</sup>	Vulnerability of families of elderly citizens cared for by the Family Health Strategy	Brazil	Cross-sectional study	VI
Silva et al <sup>18</sup>	Vulnerability in the child development: influence of public policies and health programs	Brazil	Exploratory study, with a qualitative approach	VI
Pasqual et al <sup>19</sup>	Health care for women over 50: programmatic vulnerability in the Family Health Strategy	Brazil	Evaluation study	VI
Costa et al <sup>20</sup>	Public health agendas addressing violence against rural women—an analysis of local level health services in the State of Rio Grande do Sul, Brazil	Brazil	Exploratory and descriptive study, with a qualitative approach	VI
Athié et al <sup>21</sup>	Anxious and depressed women’s experiences of emotional suffering and help seeking in a Rio de Janeiro favela	Brazil	Qualitative study	VI
Dias et al <sup>22</sup>	Family vulnerability of children with special needs of multiple, complex, and continuous care	Brazil	Cross-sectional study	VI
Loh <sup>23</sup>	The importance of recognizing social vulnerability in patients during clinical practice	New Zealand	Descriptive study	VI
Haidar et al <sup>24</sup>	The influence of individuals’ vulnerabilities and their interactions on the assessment of a primary care experience	Canada	Cross-sectional study, with a quantitative approach	VI
Coyle and Atkinson <sup>25</sup>	Vulnerability as practice in diagnosing multiple conditions	England	Descriptive study, with a qualitative approach	VI
FernandesBolina et al <sup>26</sup>	Factors associated with the social, individual, and programmatic vulnerability of older adults living at home	Brazil	Population-based, observational, cross-sectional study	VI
Andrade et al <sup>27</sup>	Programmatic vulnerability related to diseases caused by <i>Aedes aegypti</i> .	Brazil	Quantitative, exploratory and descriptive study	VI
Oldfield et al <sup>28</sup>	Group Well-Child Care and Health Services Utilization: A Bilingual Qualitative Analysis of Parents’ Perspectives	EUA	Qualitative study	VI
Nguyen et al <sup>29</sup>	Social Vulnerability in Patients with Multimorbidity: A Cross-Sectional Analysis	Canada	Cross-sectional study	VI

Nine Brazilian articles<sup>14,16-20,22,26,27</sup> presented the concept of vulnerability supported by the theoretical framework of Ayres et al<sup>32,36</sup> characterized by the interactions between individual, social, and programmatic dimensions and the context where people live.

According to da Silva et al,<sup>14</sup> this concept was first proposed in the Acquired Immunodeficiency Syndrome (HIV) epidemic to counter the concept of risk that placed the responsibility for the illness on individuals, increasing stigma, and prejudice.

**Table 3.** Description of the Articles According to Concept and Theoretical Framework.

Theme I. The concept of vulnerability and its theoretical foundations		
Author	Concept of vulnerability	Theoretical foundation
Baker et al <sup>11</sup>	Vulnerability conceptualized as a situation resulting from the interaction of factors such as poverty, racism, lack of social support, cultural differences, and social exclusion, with an impact on health.	Baker et al <sup>11</sup>
Shi et al <sup>12</sup>	Vulnerability conceptualized as a convergence of risk, measured by 3 dimensions: predisposition (race, ethnicity); available resources (income and insurance coverage, characteristics of the community), and need (self-perceived health status).	Aday <sup>30,31</sup>
Stevens et al <sup>13</sup>	Vulnerability conceptualized as a situation resulting from multiple overlapping risk factors: race, poverty, parenting, mother's language, and health insurance coverage.	Aday <sup>30</sup>
da Silva et al <sup>14</sup>	Vulnerability conceptualized as the relationship between individual, collective, social, and resource availability aspects that can result in susceptibilities to illness or health problems.	Ayres et al <sup>32</sup>
Drewes et al <sup>15</sup>	Vulnerability conceptualized as frailty related to decreased functions in the functional, somatic, social, and/or psychological domains in older adults.	Fried <sup>33</sup>
Guanilo et al <sup>16</sup>	Vulnerability conceptualized as the relationship between individual, social, and institutional aspects (programmatic) and the political commitment of governments.	Ayres et al <sup>32</sup> Mann et al <sup>34</sup>
Souza et al <sup>17</sup>	Vulnerability conceptualized as the state of individuals or groups that have their capacity for self-determination reduced, and may have difficulties in protecting their own interests due to deficits in power, intelligence, education, resources, strength, or other attributes.	Barchifontaine <sup>35</sup> Ayres et al <sup>32</sup>
Silva et al <sup>18</sup> (2015)	Vulnerability conceptualized as the chance of suffering impairments or delays in childhood development, due to individual, social, and programmatic factors.	Ayres et al <sup>32</sup>
Pasqual et al <sup>19</sup>	Programmatic vulnerability conceptualized as the way and the sense in which technologies already operating, such as health policies, programs, services, and actions, impact on a given situation.	Ayres <sup>36</sup>
Costa et al <sup>20</sup>	Programmatic vulnerability conceptualized as the way in which institutions operate, especially those of health care, reproducing, or deepening socially given conditions of vulnerability.	Ayres et al <sup>32</sup>
Athié et al <sup>21</sup>	Vulnerability conceptualized not only as an instability between a human being and a challenge of the environment, but also as a concept that links a vulnerable person to a coercive situation, a relationship established between the oppressor and the oppressed.	Oviedo <sup>37</sup>
Dias et al <sup>22</sup>	Individual vulnerability conceptualized as the existence of factors of the individual that favor the occurrence of the harm; the program related to access to health services, its organization, the relationship between professionals and users, disease control, and prevention plans and the resources provided to serve the population; and social factors related to the environmental and economic conditions to which the individual is subject.	Ayres et al <sup>32</sup>
Loh <sup>23</sup>	Vulnerability conceptualized as the grouping of multiple risk factors that reinforce each other, resulting from the lack of material and social resources essential to well-being, the presence of risk behaviors and the influence of environmental factors. It can be a chronic and cumulative characteristic and its traits can be passed on to family generations, as well as being interpreted as an antonym for resilience.	Shi et al <sup>38</sup> Mechanic et al <sup>39</sup> Seery et al <sup>40</sup>
Haidar et al <sup>24</sup>	Vulnerability consisting of five types: self-reported (subjective), biological, material conditions, relational, or cultural.	Aday <sup>30,31</sup>
Coyle and Atkinson <sup>25</sup>	Vulnerability conceptualized as a universally shared characteristic of human beings, which becomes amplified for some people through inherent disabilities or external structures of inequalities, in addition to the practices of the services.	Fineman <sup>41</sup> Kittay <sup>42</sup> Levinas <sup>43</sup> Butler et al <sup>44</sup> Ayres et al <sup>32</sup>
Fernandes Bolina et al <sup>26</sup>	Vulnerability constituted by the individual, social, and programmatic dimensions, used to identify susceptibilities to problems and health damage of people or communities.	Ayres et al <sup>32</sup>
Andrade et al <sup>27</sup>	Vulnerability constituted by the individual, social, and programmatic dimensions.	Ayres et al <sup>32</sup>
Oldfield et al <sup>28</sup>	Vulnerability conceptualized as structural vulnerability: poverty or racial/ethnic discrimination.	Bourgois et al <sup>45</sup>
Nguyen et al <sup>29</sup>	Social vulnerability conceptualized as a term that allows a holistic and integrative approach to measure the social circumstances of individuals.	Andrew et al <sup>46</sup>

Guanilo et al<sup>16</sup> deepening this discussion, asserted that Ayres et al<sup>32</sup> expanded the concept proposed by Mann et al.<sup>34</sup> The authors stated that the situation of vulnerability is inversely proportional to the degree of personal responsibility, being constituted by factors associated with access to information and the social and health services, dependent on institutional and community programs, and with the factors related to social issues that increase, sustain or reduce individual responsibility.

As Mann et al<sup>34</sup> suggested that vulnerability is the antithesis of responsibility, the concept takes on a preventive characteristic relating individual susceptibility to a given infection (in this case, the HIV). The authors said that the more responsible the individual was for the prevention of infection, the less susceptible s/he would be, that is, the more s/he participates in the prevention process, the less vulnerable the person would be. From this perspective, the authors indicated that the increase in individual responsibility comes from factors associated with access to information and health services, the environment and social influences, understood by the context in which the person is inserted, which can sustain or resolve individual responsibility, influencing behaviors.

Mann et al<sup>34</sup> also created the figure of the 3-dimensional cube relating vulnerability to 3 dimensions: individual, social, and health programs. From 8 pre-established indicators, countries were characterized as to the degree of social vulnerability, including, percentage of GDP, health expenditure, access to information (eg, number of radios and televisions), child mortality, and the development index, among others, which would define whether social vulnerability would be characterized as low, medium, or high.

Regarding the health programs dimension, defined here by the national program to combat AIDS, indices were listed that assessed the program's capacity to reduce vulnerability to HIV/AIDS, such as planning and coordination, responding to treatment needs and obtaining resources. From this, a program could be classified on a scale of low, medium, or high vulnerability.<sup>34</sup> However, even if an individual is living in the same society, subject to the actions of the same political program of protection and care, the individual characteristics are the person's own, as are the interactions between the individual, the society and the program, which will determine the overall degree of vulnerability.<sup>34</sup> Therefore, the great difference of Ayres et al<sup>32</sup> was the expansion and adaptation of a concept used to estimate the prevention capacity for a given infection to a broader concept, capable of analyzing the condition of an individual or group inserted in a different reality, such as women in situations of violence, populations deprived of liberty and older adults, among others.

Oldfield et al<sup>28</sup> resorted to the concept of structural vulnerability defined by Bourgois et al<sup>45</sup> with poverty or racial/

ethnic discrimination, exemplified by the limited proficiency of a language among family members, being associated with decreased access and quality of health care. More broadly, Baker et al<sup>11</sup> started from the principle that vulnerability does not result only from economic conditions, but from a sum of characteristics and situations to which certain population groups are exposed (eg, single mothers, older adults, unemployed people, and ethnic minorities) and that consequently impact on both their health and on seeking the care provided in PHC. The authors highlighted mental health as an important problem in this population, resulting mainly from deficient social support, exclusion, social dissonance, or racism. In view of this, vulnerability can be understood as a product of the history, way of life, and culture of our society.

In addition to instability between the individual and the environment, Athié et al<sup>21</sup> recognized vulnerability as being associated with the links of interpersonal dependence that permeate the relations of power and coercion, from the perspective of Oviedo and Czeresnia.<sup>37</sup> Vulnerability would represent an inherent characteristic of the human being, considering the vulnerable character of life and the duality between life and death that accompanies human existence. Therefore, vulnerability can be biological, existential, and social, being characterized by events that affect the natural course of life, in the biological aspect, and limit the exercise of freedom and autonomy, in the existential and social field.<sup>37</sup>

The concept of vulnerability, comprehended as frailty, in the presence of motor, physical, psychological dysfunctions, in the involvement of diseases or "deficits in social capacities" in older adults, which can lead to a decrease in the capacity to face adversity, causing "frailty at the existential and social level" was exposed by Fried et al.<sup>33</sup> Similarly, Souza et al<sup>17</sup> suggested the vulnerability concept based on the reduction in the capacity for self-determination and the protection of one's own interests, due to deficits in power, strength, cognition, and other attributes, using Barchifontaine<sup>35</sup> as a conceptual framework. This framework is in line with the understanding of Oviedo and Czeresnia<sup>37</sup> regarding the duality of life and death, since vulnerability can affect the ability of individuals to respond to the biological, economic, and social perturbations present throughout life.

Vulnerability represented by the intrinsic physical and mental characteristics of people, by the external structures that promote inequality, and even by means of institutional medical practices, such as the diagnosis, was exposed by Coyle and Atkinson.<sup>25</sup> Four types of vulnerability were presented in the social context of care and well-being: vulnerability as embodied difference; as entrenched inequality; as universal; and as a resource for resistance. This typology was supported by the concepts of vulnerability by Fineman<sup>41</sup>; Kittay<sup>42</sup>; Levinas<sup>43</sup>; and Butler et al,<sup>44</sup> respectively. There is

a difference between the individual, social, and political approaches, with the argument that these various positions are not necessarily opposed. The possibility that vulnerability is a resource for resistance was emphasized, from a philosophical and feminist ethics perspective of care.

## **Theme 2: The Use of the Concept of Vulnerability in PHC**

In the theme “The use of the concept of vulnerability in PHC,” the thematic analysis resulted in the elaboration of 2 sub-themes:

### **Sub-Theme A: Evaluation of Health Policies, Programs, and Services**

In 11<sup>11-13,18-21,23,24,27,28</sup> (57.9%) of the 19 articles analyzed, the vulnerability concept was used to assess the response of health policies, programs, and services in relation to individuals or groups identified with some situation of vulnerability, within the context of PHC (Table 4).

Some authors discussed the response capacity of the health services according to specific groups’ access to health care. Athié et al<sup>21</sup> investigated the experiences of women with common mental disorders (anxiety, depression) in relation to emotional suffering and seeking care. The analysis of the participants’ narratives was based on the perspective of vulnerability and accessibility to mental health actions in PHC.

Stevens et al<sup>13</sup> concluded that children and adolescents recognized as more vulnerable, due to the juxtaposition of multiple family and community risk factors, had a worse state of health, exacerbated by the finding of difficulty in access and continuity of health care, especially in PHC. Baker et al<sup>11</sup> identified the health requirements of vulnerable groups to assess care by general practitioners and, despite finding worse health conditions among these groups, emphasized that there was no greater demand for the service by this population. However, they recognized that the guarantee of accessibility alone does not reflect an improvement in the health condition of these groups and that actions should consider, in addition to low income, disaggregation, and cultural diversity.

Five articles described in Table 4 discussed the evaluation of services regarding the response to certain situations of vulnerability from the perspective of the programmatic dimension. Silva et al<sup>18</sup> used the concept to evaluate the actions of health services and public policies regarding care for children and adolescents in relation to childhood development. Programmatic vulnerability was also addressed in the descriptive epidemiological article by Pasqual et al<sup>19</sup> to assess the care provided to women (over 50 years of age) in a PHC unit. They found worrying aspects of vulnerability

associated with the low coverage of health actions recommended by the municipal health policy to address chronic and gynecological diseases in this population. Similarly, Costa et al,<sup>19</sup> through an exploratory-descriptive, qualitative study, analyzed the local public health agendas aimed at confronting violence against rural women. The study was based on the recognition that the lack of local public health agendas for policies and programs related to women’s health affected, in particular, rural women in situations of violence, making it difficult to confront the violent situations.

Loh<sup>23</sup> described and discussed the medical practice in relation to vulnerable patients, highlighting the importance of recognizing social vulnerability, at the time of the medical consultation and for the doctor-patient relationship. The author stated that some conditions, such as living on the street, adolescent pregnancy, or child abuse, do not necessarily produce poor health conditions due to a direct cause-effect relationship, but because they are indicative of more upstream adversities. It is important to note that the author emphasized that it is not enough to merely guarantee access, but that health services must be structured to provide integrative care to vulnerable patients.

This in-depth view of the health service was studied by Andrade et al<sup>27</sup> who evaluated, through the perception of health managers, the quality of the service offered to the population in controlling and combating specific diseases, such as arboviruses. The authors explored the concept of vulnerability from the perspective of the quality of health service, which covers the interrelationship between the different actors involved (population served, providers, and health managers) and their specific and collective roles that contribute to qualify or weaken the service provided to individuals and the community.

The vulnerability concept was also used to analyze users’ perceptions of the performance of health services in the 3 articles described below.

Shi et al<sup>12</sup> recognized that a continuous and trusting relationship between healthcare providers and the patient has a positive effect on health, even in vulnerable populations. However, they emphasized that the model of organization and regulation of the health service, provided through corporate or private healthcare plans, can impair this positive perception of the care received. On the other hand, they emphasized that, regardless of the care model, quality primary care considerably reduces the care inequalities in the most vulnerable groups, especially in relation to accessibility and continuity.

Haidar et al<sup>24</sup> analyzed the influence of 5 individual vulnerabilities and the interaction between different types, in the evaluation of the experience of primary care, in a universal healthcare system. The study confirmed that individual vulnerabilities were generally associated with a positive assessment of the primary care experience, with the



**Table 4.** Description of the Articles According to Use and Categorization of the Use of the Concepts in PHC.

Theme 2. The use of the concept of vulnerability in PHC			
Sub-theme A. Evaluation of health policies, programs, and services		Sub-theme B. Classification of individuals, groups, and families	
Author	Use of the concept	Author	Use of the concept
Baker et al <sup>11</sup>	Characterization of seeking access to health services, through the analysis of the health condition of vulnerable groups.	da Silva et al <sup>14</sup>	Classification of families according to the degree of vulnerability.
Shi et al <sup>12</sup>	Elaboration of a measurement instrument to assess the users' perception of the doctor-patient relationship and the performance of PHC.	Drewes et al <sup>15</sup>	Classification of older adults according to the degree of vulnerability, from the perspective of physicians.
Stevens et al <sup>13</sup>	Analysis of the disparities and equity in the health status of children and adolescents considering 3 aspects: access, continuity, and coverage.	Guanilo et al <sup>16</sup>	Construction of vulnerability markers to identify women more susceptible to illness (STI/AIDS).
Silva et al <sup>18</sup>	Childhood development assessment, from the programmatic dimension, from the perspective of nurses.	Souza et al <sup>17</sup>	Classification of families according to the degree of vulnerability through the construction of the Family Development Index
Pasqual et al <sup>19</sup>	Evaluation of the care process provided to women, from the age of 50, in a Family Health Unit.	Dias et al <sup>22</sup>	Analysis of the family vulnerability of children with special needs for multiple, complex, and continuous care.
Costa et al <sup>20</sup>	Study of the confrontation of violence against rural women, based on the analysis of public agendas.	Coyle and Atkinson <sup>25</sup>	Instrument for the diagnosis of multiple conditions (mental illnesses and disabilities) in people seen at a Mental Health Center.
Athié et al <sup>21</sup>	Analysis of women's access to mental health care, based on their narratives in relation to suffering and the care.	Fernandes Bolina et al <sup>26</sup>	Analysis of the dimensions of vulnerability in older adults associated with socioeconomic factors.
Loh <sup>23</sup>	Analysis of the health system's response to the patient's vulnerability in the family medicine setting.	Nguyen et al <sup>29</sup>	Description of social vulnerability in patients with multimorbidity, using a vulnerability index, to examine its correlation with the number of chronic conditions and to investigate the chronic conditions associated with the state of greatest social vulnerability.
Haidar et al <sup>24</sup>	Analysis of the influence of vulnerability on the evaluation of the experience of care in a universal health system.		
Andrade et al <sup>27</sup>	Quality measure of the health service provided by the city to cope with diseases related to <i>Aedes aegypti</i> .		
Oldfield et al <sup>28</sup>	Analysis of the participants' perception of the use of health services, addressing predisposing factors, facilitators, and the need to use health services.		

exception of cultural vulnerability. Therefore, these Canadian authors found the existence of vulnerability to be a protective factor against poor assessment of the PHC experience, within a universal healthcare system.

Finally, the authors Oldfield et al<sup>28</sup> supported by the concept of structural vulnerability, elected a population group of parents and family caregivers and proposed a group approach to childcare in a PHC center in the United States

of America. They analyzed the participants' perception regarding the use of health services, addressing predisposing factors, facilitators, and needs for the use of health services, according to Andersen's theoretical model.

### *Sub-Theme B: Classification of Individuals, Groups, and Families*

Of the selected articles, 8<sup>14-17,22,25,26,29</sup> used the vulnerability concept to classify individuals, groups, or families, with 5 of these studies carried out in Brazil.<sup>14,16,17,22,26</sup>

Da Silva et al<sup>14</sup> used the concept of vulnerability to classify families from different territories in relation to the degree of vulnerability, based on individual, social, and programmatic dimensions. Other authors classified older adult families, as in the study by Drewes et al<sup>15</sup> which analyzed the degree of vulnerability, from the perspective of PHC doctors, using a questionnaire, while Fernandes Bolina et al<sup>26</sup> assessed the vulnerability condition of older adults using the individual, social, and programmatic dimensions, associated with socioeconomic factors. Dias et al,<sup>22</sup> in a cross-sectional and quantitative study, identified the family vulnerability of children with multiple, complex, and continuous care needs, through the application of a family vulnerability index. The results showed that this population and their families were vulnerable in the social, individual, and programmatic dimensions.

Some authors used the concept to construct vulnerability indices and markers. These indicators associated individuals or groups of individuals with specific diseases, as in the case of the authors Guanilo et al<sup>16</sup> who presented the construction and validation of markers for the vulnerability of women to sexually transmitted diseases (STDs) and HIV. Souza et al<sup>17</sup> classified the older adult families of a territory using a Family Development Index, which aims to categorize families according to the degree of vulnerability. Nguyen et al<sup>29</sup> presented the creation of a vulnerability index to assess the correlation between the number of chronic conditions in patients with multimorbidity and the state of greater social vulnerability.

Coyle and Atkinson<sup>25</sup> proposed a combined approach to vulnerability, through a dialogical analysis between the experiences of diagnosis in PHC and the reports of people with multiple health problems and/or disabilities attended in a social institution. The authors promoted a reflection on how the communication of the diagnosis in the medical practice can be characterized as a situation of institutional vulnerability if physicians rely on a restricted concept that places patients with multiple health problems as people with limited capacity and in need of paternalistic protection. The article also presents vulnerability as a resource for people's resistance to adversity.

Three aspects of the use of the vulnerability concept were identified in the selected articles, characterized by the

classification of groups and families, construction of markers and indices, or the evaluation of services, considering the political dimensions, the access and the experience of the care in PHC.

### **Discussion**

The conceptual construction of vulnerability arose in the area of human rights, identifying people or groups that are legally fragile and need their rights protected. Accordingly, the vulnerable would be people with mental or physical disabilities, children and adolescents, older adults and those institutionalized. This view does not include people and population groups subjected to situations of vulnerability, especially those derived from social, cultural, economic, institutional, and political contexts, characterizing social vulnerability. However, during the AIDS epidemic, in the 1980s, the concept started to involve micro- and macro-environmental aspects, as well as the individual's interaction with the social and political circumstances, covering the fields of health and social sciences.<sup>37</sup>

This review explained the procedural construction of the concept of vulnerability, through the thematic analysis of the production of the authors studied. Some researchers criticized the need for the vulnerability concept to incorporate cultural, institutional, social, and biological characteristics, transposing the reductionist presence of risk as its structuring attribute present in some studies that conceptualized vulnerability as the result of the combination or overlapping of risk factors. Other scholars discussed the vulnerability concept as frailty derived from the reduction of domains in the older adult population.

Some researchers made interesting reflections on the concept of vulnerability, translating it as an antonym for resilience, antithesis of responsibility,<sup>35</sup> and resulting from the relationship established between the oppressor and the oppressed.<sup>37</sup> Other authors emphasized its generational character in vulnerable families<sup>39</sup> and that vulnerability is an inherent characteristic of human beings.<sup>37</sup>

Most of the articles in this review were based on the vulnerability concepts proposed by Aday et al<sup>30,31</sup> and Ayres et al.<sup>32,36</sup>

It is important to note that Aday et al<sup>30,31</sup> constructed a concept of multifactorial vulnerability, with overlapping or combined factors producing situations of vulnerability. And multidimensional, including subjective, biological, material, relational, and cultural components. These authors also reported that the most vulnerable population groups could be more harmed if health services were centered on economic aspects by restricting this population's access and offering fragmented health care.

In turn, Ayres et al<sup>32,36</sup> presented a concept of vulnerability composed of individual, programmatic, and social dimensions that expressed the potential for illness, non-illness, and

coping, which could be applied in the individual scope or collective contexts and conditions. This concept also included the ability of individuals and social groups to fight and recover from health problems. Furthermore, for these authors, vulnerability constituted an indicator of health inequity and social inequality.

It can be said that due to the scope of these 2 concepts, they were essential for the development of research in PHC, both for the investigations developed for the evaluation of health policies, programs, and services, as well as for the classification of individuals, groups, or families in situation of vulnerability. The breadth of the concepts elaborated by these authors allowed research in PHC to address the complexity of the problems observed in the care of individuals, families, and the community, as well as the dynamics of the territories inhabited by these people. Consequently, these concepts contributed to the understanding of the problems and the design of possible interventions to minimize the effects of situations of vulnerability in the lives of these populations.

In relation to the use of the vulnerability concept in PHC, the thematic analysis allowed the categorization of evidence, highlighting the power of the concept, from the perspective of evaluating health policies, programs, and services, to verify issues of health access,<sup>11,14,21,23</sup> of equity,<sup>13</sup> of coping with violence,<sup>20</sup> of the quality of PHC health services,<sup>27</sup> and of the patients' perception of the performance and use of PHC health services<sup>12,28</sup> of population groups such as children, adolescents, women, and vulnerable people. Researchers, when using the vulnerability concept to assess the care experience in PHC, found that individual vulnerabilities were associated with a positive assessment of the experience of primary care, in a universal health system, with the exception of cultural vulnerability.<sup>24</sup> This finding reinforces the role of universal health systems in guaranteeing more equitable access and health care to vulnerable people or those in vulnerable situations.

In the thematic category in which the use of the concept of vulnerability classified individuals, groups, and families, there was the possibility of its use to measure the degree of family vulnerability<sup>14,22</sup> and of specific groups, such as older adults, people with mental illness and women,<sup>15,25,26,28</sup> and for the development of instruments for measuring social vulnerability correlated with multimorbidity and the classification of families with older adult members.<sup>16,17</sup>

It is considered important to reinforce the criticism about public health research frequently using the term "vulnerable" in an undefined way, making it difficult to understand who the vulnerable people would be and the reasons for this vulnerability, even though some specificity is present in the approach of population groups. The emphasis on the inherent characteristic of vulnerability, to the detriment of the discussion about the possibility of political or procedural changes altering a condition or situation of vulnerability is

usually noted in scientific articles.<sup>47</sup> For these authors, the inaccuracy associated with the word "vulnerable" conceals the structural nature of public health problems, favoring the concealment of power relations, in addition to limiting the discussion about the structural transformations necessary to confront situations of vulnerability. This finding justifies the development of studies that enable a clear comprehension of the concept of vulnerability, in public health and especially, in PHC, as a human condition and a concrete situation. In this way, the results of studies on the features of vulnerability can facilitate the understanding of the singularities that make people vulnerable and produce situations of vulnerability and, consequently, contribute to the planning and provision of more equitable and integrative health care.

Thus, health teams and decision-makers need to have standardized tools that help identify vulnerable people and develop more equitable and comprehensive interventions that produce better health outcomes. In this perspective, studies on the characteristics of vulnerability can facilitate understanding the singularities that make people vulnerable or have situations of vulnerability. Furthermore, 2 of the significant challenges need to be faced by health system managers. First, to develop cross-cutting public health equity policies based on intra- and intersectoral action, creating horizontal discussion spaces that stimulate dialog and consensual decision-making among managers, health professionals, and the population.<sup>48</sup> Therefore, health care needs to be organized in a network, recognizing the interdependence of actions in their different points and the need for articulated coordination of the health work process. At the same time, it is necessary to invest in awareness and qualification of health professionals, implementing differentiated care approaches for vulnerable groups.<sup>48</sup> Also, the results of this study can support future research that proposes strategies more directed to vulnerable groups and health teams to meet the health needs of this population better.

A limitation of this review is that it was restricted to articles in the English language, therefore new studies are suggested that incorporate other languages, which would allow for further analysis in relation to the object studied.

## Conclusion

The main contribution of this integrative review is to highlight the complexity of the vulnerability concept represented by the ephemerality of human life and the intersection of multiple factors such as income, race, ethnicity, gender, access to health care, poverty, self-perceived health, education, biology, behavior, language, and culture, constituting an intrinsic relationship between the individual or population groups and the structure of society. Its use in PHC instrumentalizes the health practice, despite some authors

understanding that this action could be based on historical and causal determinism. It is therefore believed that the comprehension of the complexity and breadth of the concept of vulnerability and its use in the field of PHC confirms the need for firm intersectoral and political action to mitigate its undesirable effects on people's health and lives.

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