

REVIEW

INDIGENOUS INFANT MORTALITY: EVIDENCE ABOUT THE THEME

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ABSTRACT

Objective: to analyze scientific evidence about indigenous infant mortality.

Method: an integrative literature review with 10 articles, fully available in English, Portuguese and Spanish, published from 2014 to 2019 in the Cumulative Index to Nursing and Allied Health Literature, in the Medical Literature Analysis and Retrieval System on-line, in Latin American and Caribbean Literature in Health Sciences, on the Capes portal and the Cochrane Library. Data were retrieved from July to September 2019, processed in IRAMUTEQ and analyzed by descending hierarchical classification based on the dendrograms.

Results: a total of 6 classes were found: 1- Differences between indigenous and non-indigenous infant mortality; 2- Indigenous infant mortality; 3- Public policies for indigenous peoples; 4- Impact health actions to prevent infant deaths; 5- Importance of information systems; 6- Demand for resolute health services.

Conclusion: the evidence suggests the need for more effective actions to face indigenous infant mortality. Its high rate must be observed in health planning.

DESCRIPTORS: Indigenous Population; Health of Indigenous Populations; Child Mortality; Epidemiology; Health services.

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MORTALIDADE INFANTIL INDÍGENA: EVIDÊNCIAS SOBRE O TEMA

RESUMO

Objetivo: analisar as evidências científicas sobre a mortalidade infantil indígena.

Método: revisão integrativa de literatura com 10 artigos, disponíveis na íntegra, em inglês, português e espanhol, publicados entre 2014 e 2019 no Cumulative Index to Nursing and Allied Health Literature, na Medical Literature Analysis and Retrieval System on-line, na Literatura Latino-americana e do Caribe em Ciências da Saúde, no portal da Capes e na Cochrane Library. Os dados foram obtidos entre julho e setembro de 2019, processados no IRAMUTEQ e analisados pela classificação hierárquica descendente com base no dendograma.

Resultados: foram encontradas 6 classes: 1- Diferenças entre Mortalidade infantil indígena e não-indígena; 2- Mortalidade infantil indígena; 3- Políticas públicas para os povos indígenas; 4- Ações de saúde de impacto para prevenção de óbitos infantis; 5- Importância dos sistemas de informações; 6- Necessidade de serviços de saúde resolutivos.

Conclusão: as evidências indicam necessidade de ações mais efetivas para enfrentamento da mortalidade infantil indígena. A elevada taxa deve ser valorizada no planejamento em saúde.

DESCRITORES: População Indígena; Saúde de Populações Indígenas; Mortalidade Infantil; Epidemiologia; Serviços de Saúde.

MORTALIDAD INFANTIL INDÍGENA: EVIDENCIAS ACERCA DEL TEMA

RESUMEN:

Objetivo: evaluar evidencias científicas acerca de la mortalidad infantil indígena.

Método: revisión integrativa de literatura con 10 artículos, disponibles integralmente, en inglés, portugués y español, publicados entre 2014 y 2019 en Cumulative Index to Nursing and Allied Health Literature, en Medical Literature Analysis and Retrieval System on-line, en Literatura Latinoamericana y del Caribe en Ciencias de la Salud, en la página de Capes y en Cochrane Library. Se obtuvieron los datos entre julio y septiembre de 2019, se los procesaron en IRAMUTEQ y se los analizaron por la clasificación jerárquica descendiente con base en dendograma.

Resultados: resultaron 6 clases: 1- Diferencias entre Mortalidad infantil indígena y no indígena; 2- Mortalidad infantil indígena; 3- Políticas públicas para los pueblos indígenas; 4- Acciones de salud de impacto para prevención de óbitos infantiles; 5- Importancia de los sistemas de información; 6- Necesidad de servicios de salud resolutivos.

Conclusión: las evidencias apuntan la necesidad de acciones más efectivas para combatir la mortalidad infantil indígena. Se debe considerar la elevada tasa para el planeamiento en salud.

DESCRIPTORES: Población Indígena; Salud de Poblaciones Indígenas; Mortalidad Infantil; Epidemiología; Servicios de Salud.

INTRODUCTION

Infant mortality, one of the main indicators for evaluating the quality of life of a population, became highly visible after being considered as one of the objectives of the millennium, a circumstance that stimulated the implementation of actions that could impact the decrease of deaths in children under one-year-old⁽¹⁾.

Brazil showed a substantial reduction in infant mortality, whose rates went from 29.7/1,000 live births in the year 2000 to 13.8/1,000 live births in the year 2015, reaching the target proposed by the United Nations (UN). Its dynamics is distinct in territories and human groups, identifying a major difference when comparing rates between indigenous and non-indigenous children⁽²⁻⁴⁾.

According to data from the *Instituto Brasileiro de Geografia e Estatística* (IBGE) (Brazilian Institute of Geography and Statistics), all over the Brazilian regions, indigenous people have a higher infant mortality rate than the other population. In the year 2010, there were 23.0 deaths/1,000 live births among indigenous people in Brazil, whereas in non-indigenous people the rate was 15.6 deaths/1000⁽⁴⁾.

Several studies⁽⁵⁻⁹⁾ showed important inequalities according to color or race for various outcomes of infant and general mortality, with indications that the health situation of indigenous peoples is more precarious when compared to non-indigenous populations. The worse indicators, such as lower life expectancy at birth; nutritional deficiencies; increased morbidity from communicable diseases; and high mortality rates are attributed to these peoples.

There are about 800,000 indigenous people in Brazil, belonging to 305 different tribes, who speak 274 different languages and are distributed in 5,366 villages, according to the *Secretaria Especial de Saúde Indígena* (SESAI) (Special Department for Indigenous Health). In Latin America, it was estimated the existence of at least 826 indigenous groups, corresponding to about 45 million people, with more than 1,000 spoken dialects. Also, there are indigenous people in several countries worldwide, who face similar health issues^(10,11).

Social inequities, as well as high rates of illness and mortality, reach indigenous populations regardless of the country they are, a fact that justifies further studies on these peoples, especially about infant mortality, its causes and possible existing associations⁽¹¹⁾.

In this perspective, this study aims to analyze the scientific evidence available in the literature about indigenous infant mortality.

METHOD

It is an integrative review (IR) of scientific literature about indigenous infant mortality, developed from the following steps: identification of the theme and selection of the research question; establishment of inclusion and exclusion criteria; identification of pre-selected and selected studies; categorization of selected studies; definition of the information to be extracted from the selected articles; analysis with the IRAMUTEQ software; interpretation and discussion of results; and presentation of the knowledge synthesis.

The research question was planned according to the PICO strategy: What is the available evidence in the literature about the scenario of indigenous infant mortality?

The investigation took place from the search, that is, from July to September 2019, in three databases: Cumulative Index to Nursing and Allied Health Literature (CINAHL), Medical Literature Analysis and Retrieval System on-line (MEDLINE) and Latin American

and Caribbean Health Sciences Literature (LILACS) and also on the Capes journals portal and the Cochrane Library.

The combination of controlled descriptors, registered in the Health Sciences Descriptors (DeCs): *população indígena*, *saúde de populações indígenas* and *mortalidade infantil*, and their respective registered correspondents in the Medical Subject Headings (Mesh): Indigenous population, Health of Indigenous Peoples and Infant Mortality were used.

The selection criteria were full available studies in its electronic form in Portuguese, English, or Spanish; published from January 2014 to June 2019. The choice of the last five years aimed at reaching more recent scientific evidence capable of expressing the problem dimension in contemporary times.

At first, a descriptor alone was used: indigenous population OR indigenous populations' health, identifying in CINAHL 430 articles, in MEDLINE 4,852 articles, in LILACS 1,513 articles, 935 in the Capes journals, and the Cochrane Library 374 articles. When the descriptor infant mortality was researched, 21 articles were found in CINAHL, 4,508 articles were found in MEDLINE, 3,892 articles were found in LILACS, 1,286 articles in Capes journals and 5,980 articles in Cochrane Library.

In the search with the association among indigenous population OR health of indigenous populations AND infant mortality, the number of publications decreased significantly. There were 21 studies at CINAHL, 36 studies at MEDLINE, five studies in LILACS, 53 in Capes journals and 37 studies in Cochrane Library.

Afterward, two articles were excluded because they were repeated in two databases, resulting in 150 studies, in which titles and abstracts were read to confirm the connection with the theme. It was selected 37 articles, of which 27 were excluded after full reading because they did not show a link with the study object, resulting in a sample of 10 articles.

For data processing and analysis, the IRAMUTEQ software was used (*Interface de R pour les Analyses Multidimensionnelles de Textes et de Questionnaires*) version 0.7 alpha 2, widely used in the scientific literature, which allows a statistical analysis of the textual corpus.

The corpus was created with data from the results and discussions, gathered in a single file and fragmented, by the software, into text sections.

After the establishment of the textual corpus, it was used the Descending Hierarchical Classification (DHC) method, proposed by Reinert in 1990 for analysis, and classes of text sections that had expressions related to each other and different from the sections of the other classes were achieved. The words were organized in a dendrogram, which characterized the quantity and lexical composition of the classes from the grouping of terms. The analysis by the DHC allowed achieving classes of text sections with alike expressions and different from the text sections of the other classes.

The study was carried out in public databases and is not mandatory the approval by the Research Ethics Committee.

RESULTS

The corpus consisted of 10 articles, separated into 606 text sections (TS), with the use of 483 TSs (79.7%). A total of 2,434 occurrences (words, formulas or words) emerged, with 4120 distinct words and 2323 with a single occurrence. The analyzed content was categorized into six classes: class 1, with 74 TS (15.3%); class 2, with 96 TS (19.9%); class 3,

with 62 TS (12.8%); class 4, with 69 TS (14.3%); class 5, with 88 TS (18.2%) and class 6, with 94 TS (19.5%) (Figure 1).

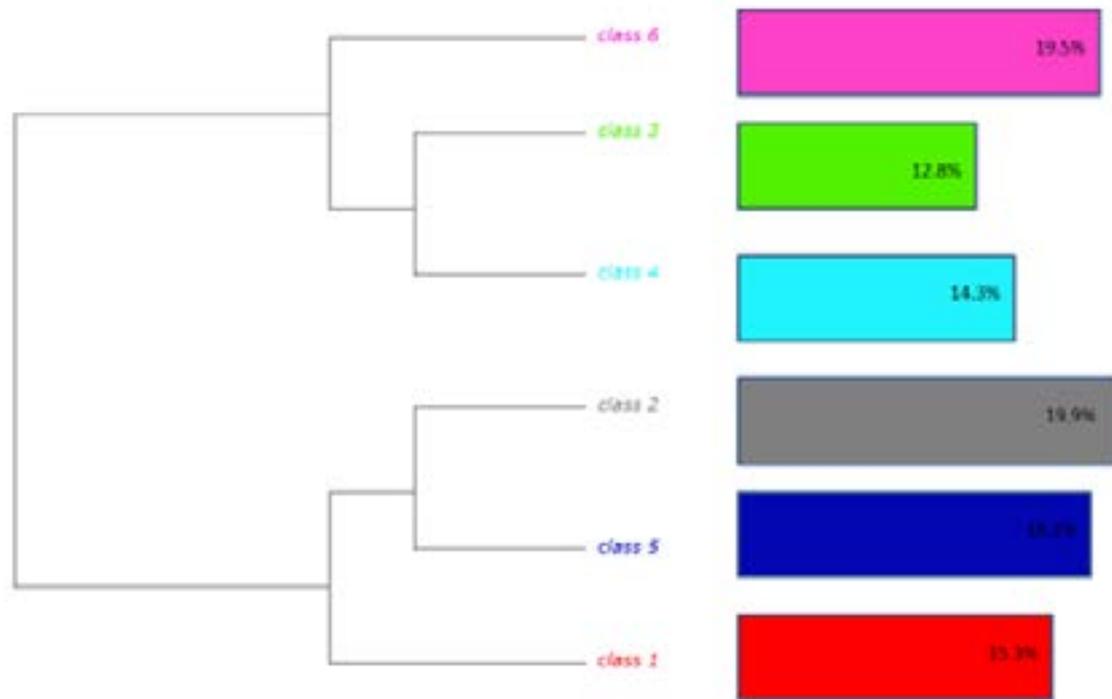


Figure 1 - Dendrogram of the Descending Hierarchical Classification. Belém, PA, Brazil, 2019

The six classes are divided into two branches (A and B) from the total corpus of the analysis. Sub-corpus A, "Infant Mortality", composed by class 1 (Differences between indigenous and non-indigenous infant mortality), which refers to comparisons between the two groups, and by classes 2 (Indigenous infant mortality) and 5 (Importance of health information systems) which refer to the occurrences of infant mortality and the applicability of information systems. Sub-corpus B, called "Prevention of infant deaths", comprises the texts corresponding to classes 3 (Public policies for indigenous peoples), class 4 (Impact health actions to prevent infant mortality) and class 6 (Demand for resolute health services), which attend the political and operational part of mortality prevention (Figure 2).

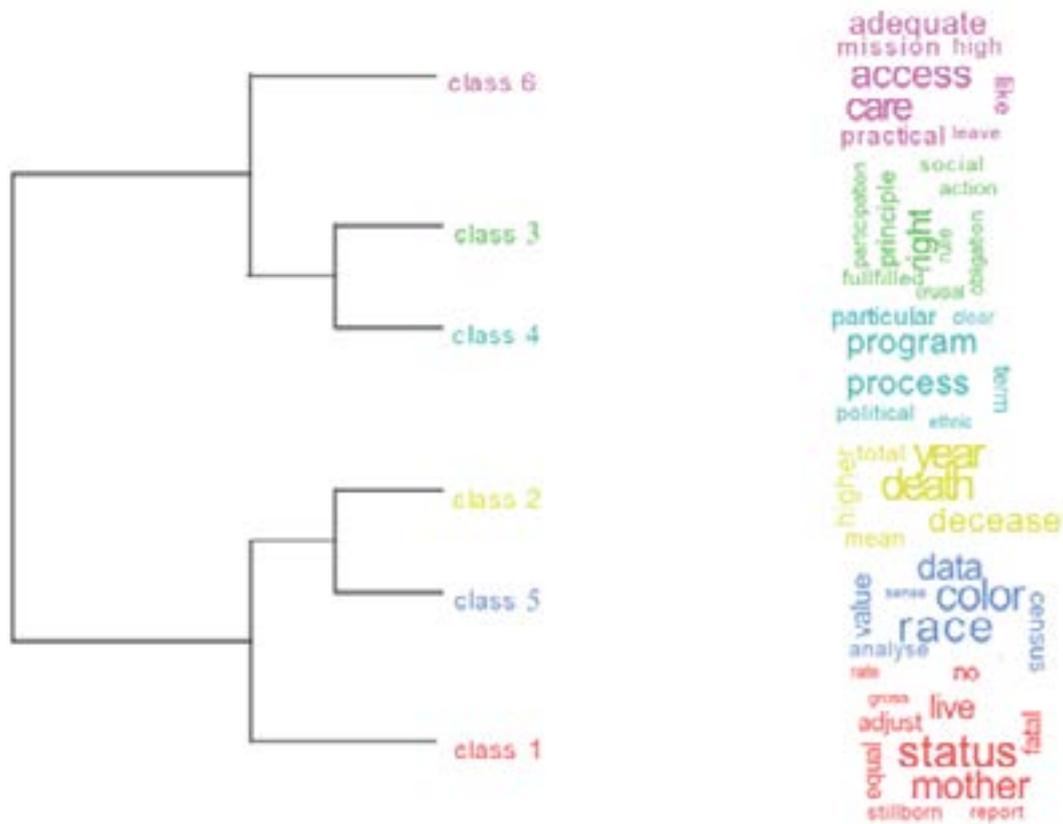


Figure 2 - Dendrogram of the Descending Hierarchical Classification. Belém, PA, Brazil, 2019

Class 1- Differences between indigenous and non-indigenous infant mortality

It comprises 15.3% (f=74/483 TS) of the total analyzed corpus, and is directly associated with classes 2 and 5. It consists of words and roots in the range between $x^2=102.1$ (status) and $x^2=2.37$, this class consists of words such as status ($x^2=102.1$), first nations ($x^2=95.52$), mother ($x^2=90.22$), comparison ($x^2=72.12$), birth ($x^2=61.72$).

The apprehended contents reveal disparities between mortality in the first indigenous nations or populations and the non-indigenous populations, and the first group, the high infant mortality rates were attributed, among other relevant factors, to the conditions and birth records.

Class 2 - Indigenous infant mortality

It comprises 19.9% (f=96/483 TS) of the total analyzed corpus, consisting of words and roots in the range between $x^2=66.11$ (death) and $x^2=2.27$ (disease). This class consists of words such as death ($x^2=66.11$), child ($x^2=64.91$), year ($x^2=53.47$), micro-region ($x^2=39.83$), occur ($x^2=36.64$).

It was identified that the occurrence of death among indigenous children is still characterized by the low quality of information on the basic causes of death, as well as the status from ill-defined causes of death. It is also evident that deaths occur primarily in children under one year old, in the post-neonatal period, most often due to preventable diseases, such as infectious diseases, parasitic diseases and acute respiratory infections.

Class 3 - Public policies for indigenous peoples

It comprises 12.8% (f=62/483 TS) of the total analyzed corpus and consists of words and roots in the range between $x^2=130.56$ (right) and $x^2=2.19$ (person). This class is composed of words such as law ($x^2=130.56$), indigenous peoples ($x^2=54.92$), state ($x^2=48.42$), insure ($x^2=47.87$), normative ($x^2=47.41$).

This class highlights the importance of ensuring the rights of indigenous peoples, which must be guaranteed mainly by the State, through the construction of public policies aimed at reducing indigenous infant mortality.

Class 4 - Impact health actions to prevent infant deaths

It comprises 14.3% (f=69/483 TS) of the total corpus and consists of words and roots in the range between $x^2=104.08$ (impact) and $x^2=2.06$ (necessary). This class is composed of words such as impact ($x^2=104.08$), program ($x^2=54.68$), process ($x^2=53.97$), approach ($x^2=51.25$), health of indigenous children ($x^2=48.81$).

This class highlights the prominence of programs and work processes that impact the health of indigenous children, aiming at preventing the occurrence of infant deaths in this population.

Class 5 - Importance of information systems

It comprises 18.2% (f=88/483 TS) of the corpus. It consists of words and roots in the range between $x^2=104.75$ (color) and $x^2=2.03$ (application), composed of words such as color ($x^2=104.75$), live births information system ($x^2=93.65$), race ($x^2=91.33$), mortality information system ($x^2=81.74$), infant mortality rates ($x^2=68.50$).

The data obtained from the information systems show significant inequalities in infant mortality between the categories of color or race, with the worst situation recorded among black and indigenous children, with significantly higher rates among indigenous people.

Class 6 - Demand for resolute health services

It comprises 19.5% (f=94/483 TS) of the corpus. This class is made up of words and roots in the range between $x^2=38.68$ (doctor) and $x^2=2.05$ (measure). It consists of words such as doctor ($x^2=38.68$), service ($x^2=37.10$), structural ($x^2=32.42$), territory ($x^2=29.39$), access ($x^2=23.77$).

This class shows how necessary it is to access resolute health services that reach the indigenous territory, with professionals who provide resolute health care to achieve a better quality of life, and that results in the reduction of indigenous infant mortality rates.

DISCUSSION

Higher mortality rates were observed among indigenous children when compared to non-indigenous children. Institutional concerns are expressed regarding the demand for more resolute public policies, capable of transforming the reality of health in the indigenous villages. Also, there is a recognition of the idea that there is a need for health services that carry out more effective actions, and the importance of health information systems that accurately portray the epidemiological dynamics in the indigenous population is reinforced.

Various researches⁽¹²⁻¹⁵⁾ pointed out the existence of large comparative gaps between the health of indigenous and non-indigenous populations, especially concerning to life expectancy, indicating differences in deaths, with greater expressiveness among indigenous

children, even in countries with better economic and social conditions.

The highest rates of indigenous infant mortality have been attributed to the varied characteristics present in this population group, such as cultural support, difficulties in accessing health services and underreporting in death records, which indicates that the current rates can be much larger than is known^(12,14). The non-completeness identified in the records gives low credibility to the information system, since they provide data that can skew the pattern of mortality among indigenous children and compromise the establishment of coping actions to reverse the epidemiological situation.

It is a fact that indigenous infant mortality is mostly caused by preventable causes. However, given the issues about the information system, studies are required that address the occurrences of deaths in these populations with maximum reliability, valuing stratification by ethnicity, given the scarcity of research using this approach. Such results will make it possible to measure the impact of public policies for these peoples, as well as the accomplishment of signed agreements, including at the international level^(15,16).

Among the main causes of the high infant mortality rate are pneumonia, gastroenteritis of infectious origin, unspecified pneumonia, unspecified septicemia, unattended death, unspecified severe protein-calorie malnutrition, among other ill-defined and unspecified^(14,16). This scenario indicates the precarious socioeconomic conditions to which indigenous children are subjected, referring to the demand for intersectoral action to coping them.

The causes of registered deaths express the low quality of childcare actions and prenatal care in the indigenous villages, a fact that must be analyzed not only from the perspective of the provision of services, but in the low effectiveness due to the distance from the local culture, often with the imposition of practices by professionals, that are not understood or accepted by the indigenous population. Without this "meeting" among cultures, it is not possible to ensure that strategies are implemented that allow for truly effective actions.

Even with the current law, including several approved resolutions in international conventions, there is great difficulty in implementing actions that effectively reduce health inequalities among indigenous people. It is crucial to assign and implement effective public policies capable of transforming the current reality experienced by these peoples, mainly concerning infant deaths, especially preventable ones. The State must take action of its role to improve living conditions in the indigenous villages and ensure the right of indigenous peoples, something that is considered a challenge and that has lingered along with history⁽¹⁵⁾.

Health actions aimed at improving the quality of life for indigenous populations should not be based on generalist strategies, but on cultural specificities and Amerindian cosmology, valuing the unique demands of this human group^(12,14,15). Cultural diversity leads to the creation of action plans in line with the explanations for the illness and the conduct established by them when recognizing the presence of illness.

Only this way it will be possible to influence reality, achieving changes in the local epidemiological profile to reduce the suffering indicators of morbidity and mortality and, consequently, of the inequalities that permeate the indigenous child population^(13,15). And for this to take place, it is essential to have structured, adequate, and resolving services, besides guaranteeing the population's access to such services.

An important aspect to consider is the demand for health information systems, properly fed, with easily accessible data, which exposes the reality of life and death of indigenous children, under the cost of the perpetuation of the high rates seen today. It is emphasized that epidemiological indicators are the main source of analysis for planning, monitoring, and evaluating health actions safely and responsibly.

CONCLUSION

The analysis of the publications enabled us to understand the epidemiological view of indigenous infant mortality, with evidence of higher rates than the general population in the same age group, showing the demand for more efficient health actions. The perpetuation of infant mortality due to preventable causes in the studied population, as well as the low quality of information, show that health actions and policies that regulate services urgently need greater resoluteness.

Considering the dynamics in the indigenous villages, the occurrence of deaths can be attributed to the difficulty in accessing health services, to the discontinuity in actions, especially when there is a demand for assistance in other points of the service network outside the indigenous village, and to the people management with a high turnover of health professionals, including their poor skills to deal with cultural diversity.

Knowing the dimension of infant deaths among indigenous people is important for the review of work plans and processes, to overturn the indicator. It can also contribute to consideration on the profile of workers, especially nursing, who must add biomedical knowledge to the traditional, valuing local culture.

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