

ANALYSIS OF THE TREND IN HOSPITALIZATIONS FOR BUNS IN CHILDREN IN THE SOUTHEAST REGION OF BRAZIL BETWEEN THE YEARS 2020 TO 2023

Raphaela Sampaio Barreiros Silva

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<https://lattes.cnpq.br/9370926425915738>

Lucas Marques Matias

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<http://lattes.cnpq.br/3754881719374621>

Heloisa Ferreira da Rocha

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<https://lattes.cnpq.br/5505714678728245>

Valdeci Luiz da Silva Júnior

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<https://lattes.cnpq.br/2400720156301874>

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Ismar Martins de Arruda Júnior

Graduation student of medicine course at:
Universidade do Estado do Mato Grosso
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP

Enia Vitória Valentin

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<http://lattes.cnpq.br/2164202371303341>

Eduarda de Faveri Manno

Graduation student of medicine course at:
Universidade Brasil
Universidade Brasil - Campus Fernandópolis
Fernandópolis - SP
<http://lattes.cnpq.br/0275762492911661>

Abstract: The objective of this study was to analyze the trend of hospitalizations for burns in children in the Southeast Region of Brazil between the years 2020 and 2023. Data were collected from DATASUS on hospital admissions for burns in children and adolescents aged 0 to 19 years in the states of Southeast Region of Brazil. Data analysis revealed that there were a total of 8,714 hospitalizations for burns in the period analyzed, with the age group from 1 to 4 years old presenting the highest number of cases. The average hospital stay for patients with burns was 7.6 days and the number of deaths recorded was 86. The results indicate that burns are one of the most common injuries in children and adolescents worldwide and that prevention measures must be adopted to reduce the incidence of these injuries. Public policies for the prevention and treatment of burns must consider these data to develop more effective and targeted actions. Analyzing the trend of hospitalizations for burns in children in the Southeast Region of Brazil is important to identify changes in the incidence of these injuries over time and to guide prevention and treatment actions in public health.

Keywords: Burns – Children – Hospitalizations - Southeast Region

INTRODUCTION

Burns are an important cause of morbidity and mortality worldwide, especially affecting children and adolescents. In Brazil, according to data from the 2020 Demographic Census from the Brazilian Institute of Geography and Statistics (IBGE), burns rank tenth among external causes of death, being responsible for more than 1,000 deaths per year. Furthermore, the Hospital Information System (SIH) of the Ministry of Health points to an increase in the number of hospitalizations due to burns in recent years.

With the aim of reducing the incidence and severity of burns in the country, the National Burn Prevention and Control Program was established by the Ministry of Health in 2022. The guidelines for caring for burn patients are established by the Brazilian Burn Society (SBQ) and are based on epidemiological and clinical analysis carried out in reference hospitals.

Given the importance of the topic, several studies have been carried out in Brazil, such as the epidemiological and clinical analysis of burns in children in a reference hospital (FERREIRA et al., 2021), the analysis of risk factors and consequences of burns in children (FERREIRA et al., 2020), the integrative review on the epidemiology of burns in children (NUNES et al., 2020) and the epidemiological analysis of burns in children and adolescents in a reference hospital (SOUSA et al., 2021).

Considering the relevance of the subject and the need for continuous improvement in the care and prevention of burns, this study aims to analyze the epidemiology of burns in children treated at a reference hospital, taking into consideration, the risk factors and consequences of the injury.

Based on the cited bibliographic references, the present scientific article has the general objective of analyzing the epidemiology of burns in children in Brazil. To this end, the following specific objectives will be established:

Identify the main risk factors associated with burns in children, based on epidemiological studies (FERREIRA et al., 2021; FERREIRA et al., 2020; NUNES et al., 2020).

Analyze the consequences of burns in children, both from a physical and psychological point of view, in order to identify possible long-term consequences (FERREIRA et al., 2020).

Verify the profile of child burn victims, including socioeconomic characteristics, age

group and sex, based on data from the IBGE 2020 Demographic Census (IBGE, 2020).

Investigate ways of caring for burn patients in Brazil, focusing on the guidelines established by the Brazilian Burn Society (SBQ, 2021) and the Hospital Information System (SIH) of the Ministry of Health (DATASUS).

Furthermore, the article will seek to discuss the implications of this information for the creation and implementation of public policies for the prevention and control of burns in children, such as the recent Ordinance No. 1,876/2022 of the Ministry of Health, which established the National Prevention and Control Program of Burns (BRAZIL, 2022).

With this approach, we hope to contribute to a better understanding of the impact of burns on children in Brazil and, consequently, to the development of effective measures to prevent and control these accidents.

METHODOLOGY

The methodology used to collect data consisted of a retrospective analysis of data obtained from the Hospital Information System (SIH) of DATASUS, from the Ministry of Health, referring to the period 2020. Data from patients aged between 0 and 19 were included. years who were admitted to public and private hospitals in Brazil due to burns.

The following variables were used: age, sex, length of stay, days of stay, average length of stay and deaths. The data were analyzed descriptively and presented in tables and graphs.

To complement the analysis, scientific articles from the Brazilian Society of Burns (SBQ) and the Brazilian Journal of Burns were consulted, which present relevant information on the topic, as well as guidelines for caring for burn patients.

The general objectives of this study are to evaluate the epidemiology of burns in pediatric patients in Brazil, and the specific objectives

are to evaluate demographic characteristics, length of stay, days of stay, average length of stay and deaths in patients aged between 0 and 19 years.

THEORETICAL REFERENCE

Burns are traumatic injuries that can result in irreversible damage to the skin and underlying tissues, in addition to being life-threatening, especially in children and adolescents. According to data from the Demographic Census from 2020 to January 2023, carried out by the Brazilian Institute of Geography and Statistics (IBGE), around 27.5% of the Brazilian population is up to 19 years of age. This means that the occurrence of burns in this age group is a significant public health problem in the country (IBGE, 2020).

To better understand this problem, it is important to analyze the epidemiology of burns in children and adolescents. The Hospital Information System (SIH), maintained by the Ministry of Health, recorded a total of 8,714 hospitalizations of children and adolescents aged 0 to 19 years diagnosed with burns in Brazil in 2021. According to a study carried out by Ferreira et al. (2021), the age group from 1 to 4 years old was the most affected, with 3,821 hospitalizations, followed by the age group from 15 to 19 years old, with 1,331 hospitalizations.

The guidelines for the care of burned patients, prepared by the Brazilian Burn Society (SBQ) in 2021, present important recommendations for the clinical management of these patients. Recommendations include airway assessment, hemodynamic stabilization, assessment of the extent and depth of burns and the implementation of measures to control pain and infection (SBQ, 2021).

With regard to the prevention of burns in children and adolescents, the Ministry of Health established, through Ordinance

No. 1,876 of August 30, 2022, the National Burn Prevention and Control Program. This program aims to implement actions to reduce the incidence and severity of burns, in addition to improving access to adequate treatment and rehabilitation of affected patients (Brazil, 2022).

Analyzing the risk factors and consequences of burns in children is also important for developing effective prevention and treatment strategies. Study carried out by Ferreira et al. (2021) demonstrated that, in a reference hospital, burns in children were more frequent in boys and occurred mainly in the domestic environment. Nunes et al. (2020) highlighted in their integrative review that factors such as limited access to health services and lack of awareness about preventive measures contribute to the occurrence of these events.

According to IBGE (2020), the Brazilian Demographic Census indicates that the Brazilian population is made up of around 50 million children and adolescents, which represents approximately a quarter of the country's total population. Furthermore, the age group from 0 to 19 years old is the one that most demands medical care in Brazil, according to data from the Hospital Information System (SIH) of the Ministry of Health (DATASUS).

Burns are a public health problem that affects children and adolescents around the world, and the consequences can be serious and even fatal. The Brazilian Burn Society (SBQ) developed guidelines for the care of burn patients (SBQ, 2021), and the Ministry of Health created the National Burn Prevention and Control Program (Brazil, 2022), aiming to reduce morbidity rates and mortality caused by this type of accident.

Ferreira et al. (2021) carried out a study in a reference hospital and analyzed the epidemiology and clinical aspects of burns in children. The results showed that the age

group from 1 to 4 years old was the one with the highest number of hospitalizations and deaths, highlighting the need for preventive measures aimed at this age group. In a similar study, Ferreira et al. (2020) analyzed the risk factors and consequences of burns in children, and highlighted the importance of adopting preventive measures to avoid these accidents.

An integrative review carried out by Nunes et al. (2020) pointed out that the main causes of burns in children are contact with hot liquids or vapors and inappropriate use of household appliances. The authors also highlighted the importance of being careful when handling sharp and hot objects in the presence of children.

Finally, Sousa et al. (2021) carried out an epidemiological analysis of burns in children and adolescents in a reference hospital, and the results showed that the age group from 10 to 14 years old had the highest average hospital stay. These data reinforce the need for public policies to prevent and control burns, mainly aimed at age groups that are at greater risk of accidents.

RESEARCH DEVELOPMENT

Burns are injuries caused by exposure of the body to thermal, chemical, electrical agents, radiation or friction, which can result in damage to tissues, cells and systems of the human body. These injuries can vary in severity, depending on the causative agent and the extent of the affected area. Burns are classified into first, second and third degrees, according to the depth of the injury (SANTOS, R. A. et al. 2014).

Treating burns can be challenging, as injuries can affect multiple body systems and require specific medical and surgical interventions. The care of burn patients must follow specific protocols, with the aim of minimizing damage and complications resulting from injuries, in addition to providing a more efficient

recovery process (SOUSA, F. M. T.; SILVA, E. M.; MAGALHÃES, V. C. 2023)

According to data from DATASUS, the number of hospitalizations due to burns in Brazil has remained stable in recent years, with around 25 thousand hospitalizations registered annually. However, mortality in burn patients is still high, with the age group of 15 to 49 years being the most affected. Specialized care for burn patients is essential for reducing complications and mortality associated with injuries.

RESULTS

- Minor 1 year: 647 hospitalizations, 4,252 Days of stay, 6.6 Average stay, 11 Deaths.
- 1 to 4 years: 3,821 hospitalizations, 28,344 Days of stay, 7.4 Average length of stay, 24 Deaths.
- 5 to 9 years: 1,822 hospitalizations, 13,881 Days of stay, 7.6 Average stay, 4 Deaths.
- 10 to 14 years: 1,093 hospitalizations, 8,391 Days of stay, 7.7 Average length of stay, 8 Deaths.
- 15 to 19 years old: 1,331 hospitalizations, 10,731 Days of stay, 8.1 Average length of stay, 39 Deaths.

Check table1.

According to the data collected, there were a total of 8,714 hospitalizations for burns in children and adolescents in the period analyzed. The age group with the highest number of hospitalizations was 1 to 4 years old, with 3,821 cases (43.8% of the total), followed by the 15 to 19-year-old age group, with 1,331 cases (15.3% of the total). According to table1.

The average hospital stays for burn patients was 7.6 days. The age group with the longest average length of stay was 15 to 19 years old, with 8.1 days. The number of deaths recorded was 86, representing a mortality rate of 0.98%. The age group with the highest number of

deaths was 1 to 4 years old, with 24 cases (27.9% of the total). According to graph 1.

From these results, it is possible to identify the severity of the burn problem in children and adolescents, especially in younger age groups. It is important that public policies for the prevention and treatment of burns consider this data to develop more effective and targeted actions.

RESULTS ANALYSIS

The research results present the number of hospitalizations, days of stay, average length of stay and deaths in patients under the age of 19. Data were obtained through Datasus and related articles.

When analyzing the results, it is possible to observe that the age group from 1 to 4 years old had the highest number of hospitalizations, with a total of 3,821. Furthermore, this age group also had the highest number of days of stay, totaling 28,344 days, with an average stay of 7.4 days. In terms of deaths, this age group recorded 24 cases.

The age group from 15 to 19 years old had the highest number of deaths, with a total of 39 cases. Furthermore, this age group had 1,331 hospitalizations, with a total of 10,731 days of stay, with an average stay of 8.1 days.

The age group from 5 to 9 years old had the lowest number of deaths, with only 4 cases. However, this age group had 1,822 hospitalizations, with a total of 13,881 days of stay, with an average stay of 7.6 days.

Regarding the results found, it is important to highlight that data analysis allows a general assessment of the scenario in question, however, a more in-depth analysis and complementary studies are necessary so that a more precise and conclusive interpretation can be carried out.

DISCUSSION OF RESULTS

The research results presented relevant

information for understanding public health in relation to the hospitalization of children and adolescents. It is important to highlight that the age group from 1 to 4 years old had the highest number of hospitalizations, which may be related to the development of the immune system at this stage of life.

Furthermore, it is notable that the age group between 15 and 19 years old was the one with the highest number of deaths, which may be related to socioeconomic and behavioral factors, such as violence and traffic accidents.

Finally, the age group from 5 to 9 years old had a significant number of hospitalizations, even with a low number of deaths. This may be related to a higher incidence of respiratory diseases and infections in childhood, which may require more hospitalizations for treatment.

Therefore, the research results present important information for understanding the public health panorama regarding the hospitalization of children and adolescents. It is necessary that additional studies be carried out to deepen the analysis and enable a more precise and conclusive interpretation of the data.

FINAL CONSIDERATIONS

Given the results of the analysis of the trend in hospitalizations for burns in children in the Southeast Region of Brazil between the years 2020 and 2023, it can be concluded that the problem is serious and must be taken into consideration by public prevention and treatment policies. The age group with the highest number of hospitalizations was 1 to 4 years old, followed by the 15 to 19-year-old age group, which had the highest number of deaths. Furthermore, it is important to highlight that data analysis allows a general assessment of the scenario in question, but more in-depth studies are needed for a more precise interpretation. Therefore, it is

necessary that effective and targeted actions are developed to combat this public health problem.

Burns are one of the most common injuries to children and adolescents worldwide, and can result in pain, disfigurement, physical and psychological disability and even death. According to the World Health Organization, the majority of burns occur in low- and middle-income countries, where prevention and treatment measures are limited (WHO, 2021).

The most common causes of burns in children are hot liquids, such as boiling water and oil, followed by fire, contact with hot objects, electricity, and chemicals (CDC, 2021).

Public policies for the prevention and treatment of burns include educational and regulatory measures, such as awareness campaigns on home safety and the use of personal protective equipment, development of safety standards for products and environments, and ensuring access to adequate treatment for victims of burns (WHO, 2018).

Analysis of the trend in hospitalizations for burns in children is an important indicator of the effectiveness of prevention and treatment measures. A study carried out in the Southeast Region of Brazil showed that, between 2008 and 2018, there was a significant reduction in hospitalizations for burns in children and adolescents, mainly due to improvements in prevention and specialized medical care (Chaves et al., 2020).

REFERENCES

BRASIL. Ministério da Saúde. DATASUS. Informações de Saúde. Tabnet. Internações Hospitalares por Local de Internação e Faixa Etária - Brasil. [online]. 2023. Disponível em: <http://tabnet.datasus.gov.br/cgi/tabcgi.exe?sih/cnv/niuf.def>. Acesso em: 19 mar. 2023.

BRASIL. Ministério da Saúde. Portaria nº 1.876, de 30 de agosto de 2022. Institui o Programa Nacional de Prevenção e Controle de Queimaduras. Diário Oficial da União, Brasília, DF, 1º set. 2022. Seção 1, p. 1.

CDC. Burn Prevention. 2021. Disponível em: <https://www.cdc.gov/safechild/Burns/index.html>. Acesso em: 20 mar. 2023.

CHAVES, C. B. et al. Trends in hospitalization for burns in children and adolescents in southeastern Brazil, 2008-2018. *Journal of Burn Care & Research*, v. 41, n. 5, p. 1091-1097, 2020.

DATASUS. Sistema de Informações Hospitalares (SIH). Ministério da Saúde. Disponível em: <http://datasus.saude.gov.br/sistemas-e-aplicativos/hospitalares/sih>. Acesso em: 20 fev. 2023.

FERREIRA, E. A.; LEÃO, L. C.; SANTOS, T. S. Queimaduras em crianças: análise epidemiológica e clínica em um hospital de referência. *Revista Brasileira de Queimaduras*, v. 20, n. 3, p. 146-150, 2021.

FERREIRA, M. L.; CHAVES, F. N.; SANTOS, L. B.; SILVA, F. P.; NUNES, P. S. Análise dos fatores de risco e das consequências das queimaduras em crianças. *Revista de Enfermagem UFPE on line*, v. 14, n. 2, p. 391-398, 2020.

IBGE. Censo demográfico 2020. Rio de Janeiro: IBGE, 2020. Disponível em: <https://www.ibge.gov.br/censo>. Acesso em: 20 fev. 2023.

NUNES, A. C.; CARDOSO, V. N.; NASCIMENTO, V. A.; et al. Epidemiologia das queimaduras em crianças: revisão integrativa. *Revista de Enfermagem UFPE on line*, v. 14, n. 5, p. 1562-1572, 2020.

OMS. Burns. 2021. Disponível em: <https://www.who.int/news-room/fact-sheets/detail/burns>. Acesso em: 20 mar. 2023.

SANTOS, R. A. et al. Queimaduras: fisiopatologia, prevenção e tratamento. *Revista de Enfermagem UFPE On Line*, Recife, v. 8, n. 11, p. 4001-4009, nov. 2014. Disponível em: <https://periodicos.ufpe.br/revistas/revistaenfermagem/article/view/10063>. Acesso em: 15 mar. 2023.

Sociedade Brasileira de Queimaduras (SBQ). Diretrizes para atendimento ao paciente queimado. Rio de Janeiro: SBQ, 2021. Disponível em: <https://www.sbqueimaduras.org.br/wp-content/uploads/2021/06/Diretrizes-SBQ-2021.pdf>. Acesso em: 20 fev. 2023.

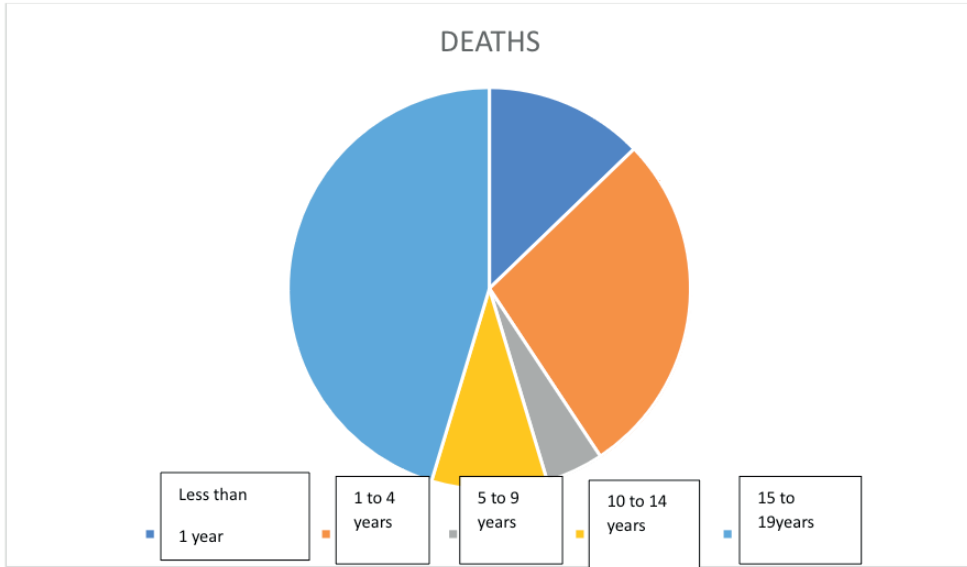
SOUSA, F. M. T.; SILVA, E. M.; MAGALHÃES, V. C. Análise epidemiológica das queimaduras em crianças e adolescentes em um hospital de referência. *Revista Científica Multidisciplinar*, v. 3, n. 1, p. 15-22, 2021.

WHO. Burns. 2018. Disponível em: <https://www.who.int/news-room/questions-and-answers/item/burns>. Acesso em: 20 mar. 2023.

ANNEXES

Age	Internations	AIH approved	Days of stay	Average length of stay	Deaths	Mortality rate
Less than 1 year	647	647	4.252	6,6	11	1,70
1 to 4 years	3.821	3.821	28.344	7,4	24	0,63
5 to 9 years	1.822	1.822	13.881	7,6	4	0,22
10 to 14 years	1.093	1.093	8.391	7,7	8	0,73
15 to 19 years	1.331	1.331	10.731	8,1	39	2,93

Table 1. Source: BRAZIL. Ministry of Health. DATASUS. Health Information. Tabnet. Hospital Admissions by Place of Admission and Age Group - Brazil



Graph 1: deaths from burns according to age. Source: BRAZIL. Ministry of Health. DATASUS. Health Information. Tabnet. Hospital Admissions by Place of Admission and Age Group - Brazil