

INCIDENCE OF OPHID ACCIDENTS IN THE STATE OF CEARÁ FROM 2017 TO 2021; AN ECO/ EPIDEMIOLOGICAL DISCUSSION

Ivens Balduino dos Santos Carneiro

Universidade Estadual do Ceará, Health
Sciences Center/Biological Sciences Course,
Fortaleza - Ceará
<http://lattes.cnpq.br/7645702570421594>

Francisca Raiane Machado da Cruz

Universidade Estadual do Ceará, Health
Sciences Center/Biological Sciences Course,
Fortaleza - Ceará
<https://lattes.cnpq.br/0188700205049169>

Fernando Virgílio Albuquerque de Oliveira

Training: Physiotherapy by: Universidade
Federal do Ceará (UFC), Master in Collective
Health by: Universidade Estadual do Ceará
(UECE), specialist in clinical osteopathy
by: Académie de Thérapie Manuelle et
Sportive Belgique (ATMS), Doctoral student:
Universidade Estadual do Ceará, Health
Sciences Center/Medical Course/Doctorate
in Public Health, Fortaleza - Ceará
<http://lattes.cnpq.br/0487525646265750>

Emanuele Ribeiro Ramos

Nursing by: “Faculdade Grande Fortaleza”,
Master Student: Universidade Estadual do
Ceará, Health Sciences Center/Master in
Health Teaching, Fortaleza - Ceará
<http://lattes.cnpq.br/7693813636056159>

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



Luis Flávio Mendes Saraiva

Agronomy by: "Universidade Federal do Ceará" (UFC), Master and Doctorate in the Department of Biochemistry and Molecular Biology of "Universidade Federal do Ceará" (UFC), Effective Professor of the Institution: Universidade Estadual do Ceará, Health Sciences Center/Biological Sciences Course, Fortaleza - Ceará
<http://lattes.cnpq.br/1188264875313588>

Abstract: The state of Ceará is covered largely by the Caatinga biome, where the presence of snakes is common and, therefore, there is a certain frequency of accidents with species of the genus *Bothrops*. In this paper, data from Sinan was discussed for the State of Ceará, from 2017 to 2021, in which the type of serpent and the distribution of cases by macroregion was considered. The predominance of *Bothrop* accidents was observed, except in the Fortaleza region, in which notifications of species without venom prevailed; However, there was a large percentage of ignored or blank records, which impairs the consistency of relevant data to discuss these accidents. Thus, the role of the biologist in SUS (Unified Health System) is emphasized, promoting health education, to identify species and prevent the aggravation of cases.

KeyWords: *Bothrops*. Epidemiology. Ofidism.

INTRODUCTION

Brazil is in a tropical track conducive to having Ophid accidents, which are caused by serpents who have venom. Most of these accidents occur with *Bothrops* and *Crotalus* species, rarely having cases with *Lachesis* and *Micrurus* (Pinho; Pereira, 2001).

According to Bernarde (2014), there are approximately 29,000 cases per year, having 0.4% mortality. According to him, this statistics results in 200 fatal cases, given below the homicide statistics, so it is easier for a man to be attacked by another man than by a snake.

Even so, this annual average is worrying and relevant to epidemiology because of its occurrences. According to Azevedo and collaborators (2021), Ophidic accidents occur in rural areas, where human activities come into contact quite often with the snakes. The authors comment that the most affected body region are exposed parts such as arms and legs. Therefore, working conditions provide risks to those involved.

Another factor to be taken into consideration, even if the fatality of cases are quite low, is to worry about medical complications. The effects of poison are usually of an anticoagulant, neurotoxic, myotoxic, sgoutoxic and proteolytic nature, there is a possibility of an evolution of the systemic picture for severe complications such as shock and acute renal failure, as well as the local complications can gangrene and lead to Member necrosis (SANTOS et al, 2016; ALMEIDA et al., 2021). Thus, as many accidents occur mostly away from the emergency room, the time the victim takes to arrive can be crucial to his rescue depending on which one with a little bit of him.

The Northeast region has a significant extension of the caatinga biome, being one of the main morphoclimatic domains to occur with ophidic accidents, especially with snakes of the genus *Bothrops* (Matos, 2020). In Ceará, the cases are quite consistent and need attention (BELMINO, 2015).

This work aims to identify the incidence of Ophidic accidents with the genus *Bothrops* in the state of Ceará. Given that this state has 88% of its territory occupied by the Caatinga biome (Brazil, 2016). Therefore, a region relevant to Ophidic accidents of this species, as it understands its natural habitat.

METHODOLOGY

This work comes from the discipline of Epidemiology of the Biological Sciences course. It is a descriptive epidemiological study of quantitative approach to Ophidic accidents. Indirectly, as a result that the data analyzed were obtained from the Datasus platform, from the Disease and Notifications Information System (Sinan). The study had public data, not requiring submission to ethics committee.

The methodology therefore consisted of making a comparative analysis of Ophid

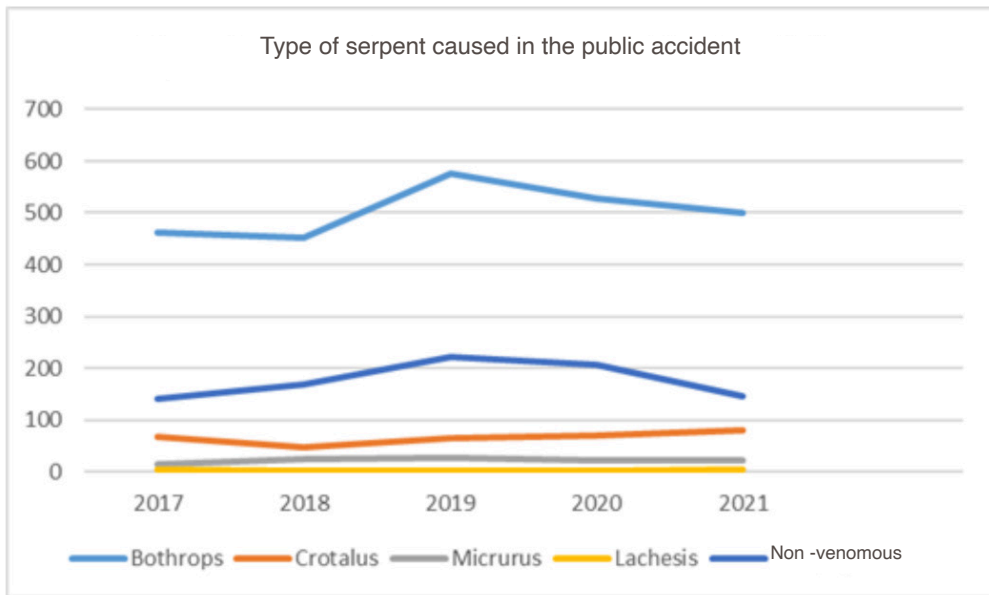
accidents from 2017 to 2021, in the state of Ceará. This method was chosen, as it can show us in a small cut of how is the evolution of current staff of epidemiological cases with accidents by serpents, considering the distribution of records by macroregion of health and species of serpent described in the notification.

RESULTS AND DISCUSSION

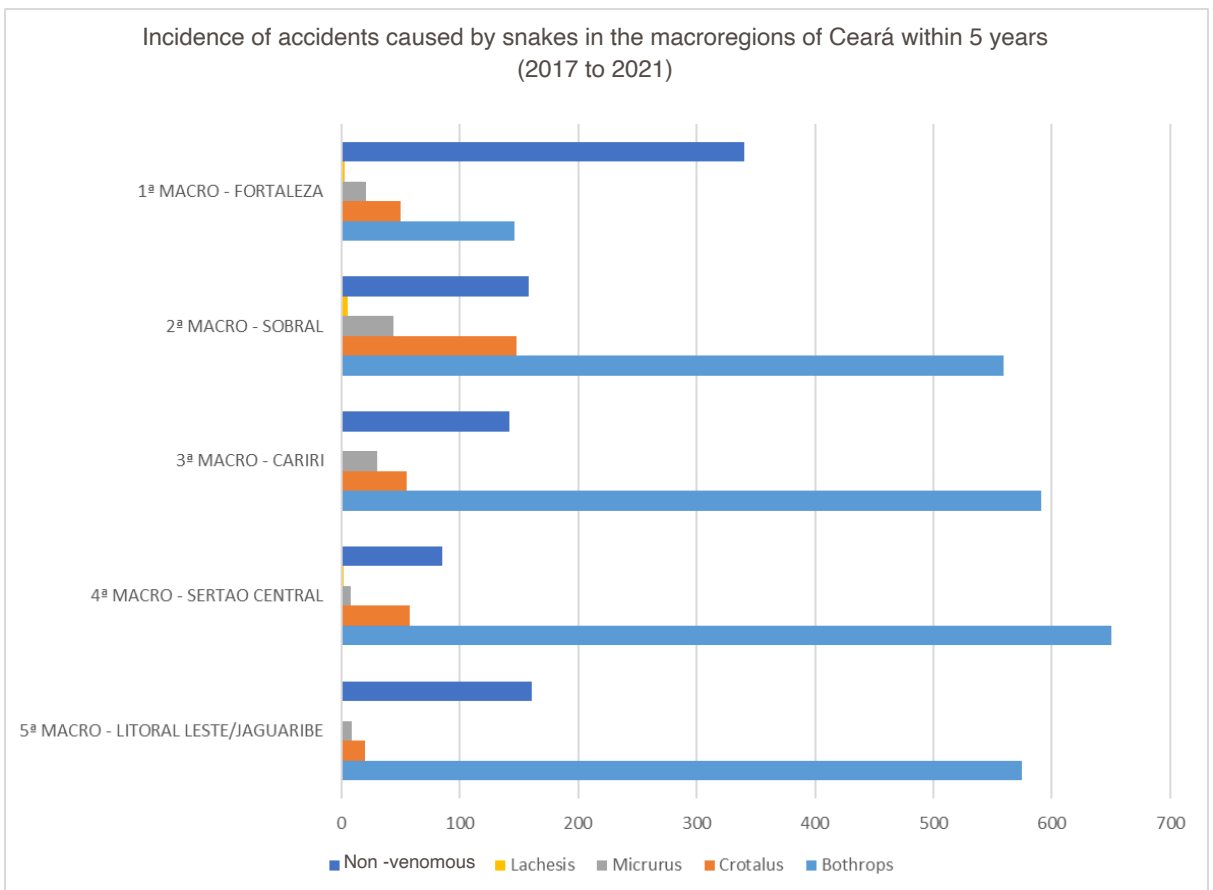
The results raised were satisfactory, in accordance with our hypothesis: most cases in Ceará are by *Bothrops*. However, most data were ignored or blank. Possibly this is because most health professionals do not know how to identify the species of serpent. According to Oliveira et al. (2022), the lack of identification, hinders the understanding of the royal epidemiological panorama, affecting the redistribution of anti -phase sera.

Therefore, graph 1 resulted from data analysis only of the species that were identified. In this case, the species of the genus *Bothrops* was the most identified, having its highest incidence in 2019, whose year had more than 500 accident identifications with this genre, representing 20.87% of the total cases occurred during this 5 -year cutout. It is inferred that accidents occurred by botropic snakes are most commonly reported because they have a wide geographical distribution, being quite abundant and having a great diversity of species (BOCHNER & STRUCHINER, 2003).

Concomitantly, biotrophic accidents occurred in macroregions, where habitat distribution of *Bothrops* genus occurs, as can be viewed in Figure 2. Our analysis stood out in the Central Sertão, Cariri, East and Sobral macroregion. Regions that are inside the Caatinga biome (Moro et al., 2015). These are precisely places that favor the survival of these snakes, both by vegetative characteristics, as well as having



Graph 1: Number of notifications by type of serpent in Ceará (2017-2021).



Graph 2: Incidence of accidents caused by serpents in the macroregions of Ceará within 5 years (2017-2021).

contact with humans, as they are locations with various economic activities (Lira-da-Silva et al., 2009). While in the macroregion of Fortaleza, the species without venom were the main causes of accidents, considering their own ethology.

FINAL CONSIDERATIONS

Through this analysis, we can see that most notifications do not identify the species of serpents that caused accidents, impairing the epidemiological survey that is important for the distribution of anti-phaffy sera. With this, we can also infer that most of these accidents can be with botropic snakes, but with the absence of various data we cannot conclude

this statement. Thus, health education is essential, especially the role of the biologist in assisting in identification, as well as to explain the actions and first aid that are valuable to the non -aggravation of the bite. Above all, it is visible that affected victims need better working conditions, as well as always with safety equipment to avoid any kind of interlocutory.

REFERENCES

- AZEVEDO, Larissa Rachel Príncipe; RODRIGUES, Kerolaine da Cruz; MACEDO, Valdenora Patrícia Rodrigues; FARIA, Carolina Arruda de. Perfil clínico-epidemiológico dos acidentes ofídicos ocorridos no Brasil. *Saúde Coletiva* (Barueri), [S.L.], v. 11, n. 61, p. 4876-4887, 1 fev. 2021.
- BELMINO, José Franscidavid Barbosa. **Epidemiologia dos acidentes ofídicos, Estado do Ceará, Brasil**. 2015. 117 f. Dissertação (Mestrado) - Curso de Mestrado Acadêmico em Ciências Naturais e Biotecnologia, Universidade Federal de Campina Grande, Cuité, 2015.
- BERNARDE, Paulo Sérgio. *Serpentes peçonhentas e acidentes ofídicos no Brasil*. São Paulo: Anolisbooks, 2014. 224 p.
- BRASIL. SEMACE.. **Inventário Florestal Nacional**: Ceará. Brasília: Serviço Florestal Brasileiro, 2016.
- BOCHNER, Rosany; STRUCHINER, Claudio José. Epidemiologia dos acidentes ofídicos nos últimos 100 anos no Brasil: uma revisão. **Cadernos de Saúde Pública**, [S.L.], v. 19, n. 1, p. 07- 16, fev. 2003.
- LIRA-DA-SILVA, Rejâne M. *et al.* Serpentes de Importância Médica do Nordeste do Brasil. **Gazeta Médica da Bahia**, Bahia, v. 143, n. 1, p. 7-20, jul. 2009.
- MATOS, Rafael Rodrigues; IGNOTTI, Eliane. Incidência de acidentes ofídicos por gêneros de serpentes nos biomas brasileiros. *Ciência & Saúde Coletiva*, [S.L.], v. 25, n. 7, p. 2837- 2846, jul. 2020.
- MORO, Marcelo Freire *et al.* Vegetação, unidades fitoecológicas e diversidade paisagística do estado do Ceará. **Rodriguésia**, [S.L.], v. 66, n. 3, p. 717-743, set. 2015.
- OLIVEIRA, Nayana da Rocha *et al.* Epidemiologia de acidentes ofídicos no Brasil. **Realize Eventos Científicos & Editora**, Campina Grande, v. 1, n. 1, p. 1-11, set. 2022.
- PINHO, F.M.O.; PEREIRA, I.D.. Ofidismo. *Revista da Associação Médica Brasileira*, [S.L.], v. 47, n. 1, p. 24-29, mar. 2001.
- SILVA, Elder Oliveira da; PARDAL, Pedro Pereira de Oliveira. Envenenamento por serpente Bothrops no município de Afuá, Ilha de Marajó, estado do Pará, Brasil. **Revista Pan- Amazônica de Saúde**, [S.L.], v. 9, n. 3, p. 57-62, set. 2018.