

BMJ Open

BMJ Open is committed to open peer review. As part of this commitment we make the peer review history of every article we publish publicly available.

When an article is published we post the peer reviewers' comments and the authors' responses online. We also post the versions of the paper that were used during peer review. These are the versions that the peer review comments apply to.

The versions of the paper that follow are the versions that were submitted during the peer review process. They are not the versions of record or the final published versions. They should not be cited or distributed as the published version of this manuscript.

BMJ Open is an open access journal and the full, final, typeset and author-corrected version of record of the manuscript is available on our site with no access controls, subscription charges or pay-per-view fees (<http://bmjopen.bmj.com>).

If you have any questions on BMJ Open's open peer review process please email info.bmjopen@bmj.com

BMJ Open

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2023-082381
Article Type:	Protocol
Date Submitted by the Author:	22-Nov-2023
Complete List of Authors:	<p>Casais, Gustavo; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Center of Data and and Knowledge Integration for Health</p> <p>Guimarães, Nathalia ; Federal University of Minas Gerais</p> <p>Cortes, Taísa ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Center of Data and and Knowledge Integration for Health</p> <p>Pescarini , Julia ; London School of Hygiene & Tropical Medicine</p> <p>Rebouças de Magalhães, Poliana; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA</p> <p>Wells, Valerie; University of Glasgow</p> <p>de Sousa Filho, José Firmino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA</p> <p>Delgado Neves, Danielson; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA</p> <p>Shimonovich , Michal ; University of Glasgow</p> <p>Olsen, Jonathan; University of Glasgow</p> <p>de Carvalho Neto, Edgar Marcelino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA</p> <p>Cooper, Philip; Universidad Internacional del Ecuador; St George's, University of London</p> <p>Katikireddi, Srinivasa; University of Glasgow</p> <p>Emanuel, Lucas; Federal University of Bahia; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA</p> <p>Andrade , Roberto F. S. ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia</p> <p>Ferreira dos Santos, Gervasio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia</p> <p>Barreto, Mauricio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia</p>
Keywords:	EPIDEMIOLOGY, PUBLIC HEALTH, STATISTICS & RESEARCH METHODS, TROPICAL MEDICINE

SCHOLARONE™
Manuscripts

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Authors

Gustavo Casais*, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, gustavo.casais@hotmail.com, +55 (71) 99127 3345.

Nathalia Sernizon Guimarães, PhD, Federal University of Minas Gerais, Avenida Antonio Carlos 6627, Belo Horizonte – MG, Brazil, 31270-901, nasernizon@gmail.com, +55 (31) 3409 4124.

Táisa Rodrigues Cortes, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, taisacortes@gmail.com, +55 (71) 99127 3345.

Julia Pescarini, PhD, London School of Hygiene and Tropical Medicine, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Keppel Street, London, WC1E 7HT, United Kingdom, julia.pescarini1@lshtm.ac.uk, +44 (0)20 7636 8636.

Poliana Rebouças de Magalhães, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, poliana.reboucas@fiocruz.br, +55 (71) 99127 3345.

Valerie Wells, Ms, MRC/CSO Social and Public Health Sciences Unit, University of Glasgow. 90 Byres Road, Glasgow, G12 8TB, United Kingdom, Valerie.Wells@glasgow.ac.uk, +44 0141 330 4042.

José Firmino de Sousa Filho, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, jose.ffilho@fiocruz.br, +55 (71) 99127 3345.

Danielson Jorge Delgado Neves¹, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, danielson.neves@fiocruz.br, +55 (71) 99127 3345.

Michal Shimonovich, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow, Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom, Michal.Shimonovich@glasgow.ac.uk, +44 0141 330 4042.

Jonathan R Olsen, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow, Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom, Jonathan.Olsen@glasgow.ac.uk, +44 0141 330 4042.

Edgar Marcelino de Carvalho Neto, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, edgar.neto@fiocruz.br, +55 (71) 99127 3345.

1
2
3 Philip J. Cooper, PhD, St George's, University of London; School of Medicine, Universidad
4 Internacional del Ecuador, Av. Simón Bolívar y Av. Jorge Fernández, Quito, Ecuador,
5 pcooper@sgul.ac.uk, +593 2 2985 600.
6

7
8 Srinivasa Vittal Katikireddi, PhD, MRC/CSO Social & Public Health Sciences Unit, University of
9 Glasgow, Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
10 Vittal.Katikireddi@glasgow.ac.uk, +44 0141 330 4042.
11

12
13 Lucas Emanuel, Federal University of Bahia; Center of Data and Knowledge Integration for Health
14 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
15 - Trobogy, Salvador - BA, Brazil, 41745-715, lucasemanuel@ufba.br, +55 (71) 99127 3345.
16

17
18 Dr. Roberto Andrade, Federal University of Bahia; Center of Data Knowledge Integration for
19 Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 -
20 sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, randrade@ufba.br, +55 (71) 99127 3345.
21

22
23 Dr. Gervasio Ferreira dos Santos, Federal University of Bahia; Center of Data Knowledge
24 Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R.
25 Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, gervasios@ufba.br, +55 (71)
26 99127 3345.
27

28
29 Mauricio L. Barreto, Federal University of Bahia; Center of Data Knowledge Integration for Health
30 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
31 - Trobogy, Salvador - BA, Brazil, 41745-715, mauricio@ufba.br, +55 (71) 99127 3345.
32

33 *Corresponding author, Email: gustavo.casais@hotmail.com.
34
35
36

37 **Word count:** 1,864
38
39
40

41 **Keywords:** Wildfire; Deforestation; Tropical Climate; Rainforest; Health
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Authors

Gustavo Casais¹, Nathalia Sernizon Guimarães², Taísa Rodrigues Cortes¹, Julia Pescarini^{1,3}, Poliana Rebouças de Magalhães¹, Valerie Wells⁴, José Firmino de Sousa Filho¹, Danielson Jorge Delgado Neves¹, Michal Shimonovich⁴, Jonathan R Olsen⁴, Edgar Marcelino de Carvalho Neto¹, Philip J. Cooper^{5,6}, Srinivasa Vittal Katikireddi⁴, Lucas Emanuel^{1,7}, Roberto F. S. Andrade^{1,7}, Gervasio Ferreira dos Santos^{1,7}, Mauricio L. Barreto^{1,7}, on behalf of the Unit on the Social and Environmental Determinants of Health Inequalities (SEDHI)

¹Center for Data and Knowledge Integration for Healthcare (CIDACS)

²Federal University of Minas Gerais

³London School of Hygiene and Tropical Medicine

⁴MRC/CSO Social and Public Health Sciences Unit, University of Glasgow

⁵St George's, University of London

⁶School of Medicine, Universidad Internacional del Ecuador, Quito, Ecuador

⁷Federal University of Bahia

Abstract

Introduction: Wildfires and deforestation potentially have direct effect on multiple health outcomes as well as indirect consequences for climate change. Tropical rainforest areas are characterized by high rainfall, humidity, and temperature, and they are predominantly found in low- and middle-income countries. This study will map the methods, data, and health outcomes of the scientific papers on the wildfire and deforestation in these locations.

Methods and analysis: We will carry out a scoping review according to the Joanna Briggs Institute's manual for scoping reviews and the framework proposed by Arksey and O'Malley, and Levac et al. The search for articles will be performed in 16 electronic databases using MeSH Terms and adaptations for each database. The search for local studies will be complemented by the manual search in the list of references of the studies selected to compose this review. The text screening will be done in pairs. Subsequently, we will tabulate the data by the of origin of the data source used, the methods, and the main findings on health impacts the extracted data. The results will provide descriptive statistics, along with visual representations in diagrams and tables, complemented by narrative summaries as detailed in the JBI guidelines.

Ethics and dissemination: The study does not require an ethical review due to its nature. The submission of results for publication in a peer-reviewed journal and presentation at scientific and policymakers conferences is expected.

Link to the protocol record in the Open Science Framework (OSF): <https://osf.io/pnqc7/>.

Strengths and limitations of this study:

- The proposed scoping review will be the first study to focus on assessing the wildfires and deforestation impacts on health in the tropical rainforest areas.
- The search will include several different databases, such as those from Latin America and Africa.
- It will include manuscripts in all languages with no limitations on date.
- The selected papers will be sensitive to the resolution of the tropical rainforest mapping, potentially implying improper exclusion or inclusion of studies.
- It will not conduct critical appraisal, which may result in the inclusion of studies with low relevance, reliability, validity, and applicability.

Introduction

Wildfires and deforestation have been increasingly drawing attention for their potential consequences, not only for climate change but also on the health outcomes of both local and global populations. Understanding the health effects of wildfire and deforestation on health in the low- and middle-income countries is critical for the design of evidence-based and successful mitigation plans and policies [1]. Governments across the world have been expressing this concern by adopting climate mitigation policies to contain environmental degradation. Agriculture is a significant economic sector in many of these countries, suggesting that the expansion of agricultural areas can be influenced by fluctuations in global food prices, which may lead to deforestation [2] [3]. Wildfires are directly associated with illegal forest clearing, agricultural burning of crop residue, hotter and drier conditions [4] [5] and over the past few decades, there has been an increase in the occurrence of extreme events like drought, extreme temperatures, storms, and wildfires globally. This rise is closely linked to climate change [6].

Wildfires have the potential to cause direct bodily injuries, impact housing infrastructure, and release toxic gases and particulate matter into the air [7]. Exposure to smoke from wildfires can cause acute respiratory illness and exacerbate existing disease, especially among children and elderly [8]. Additionally, the long-term effects of accumulated exposures to wildfires may be multiple including premature death, cardiovascular disease, cancer, respiratory illness, mental health, and other chronic conditions [9]. Deforestation has different causal mechanisms for public health outcomes. Deforestation can alter environmental niches, changing habitats for parasites and insects, including disease-carrying mosquitoes, which may increase the human risk of contracting vector-borne diseases such as malaria and dengue [10] [11] [12].

Although previous scoping reviews have documented potential impacts of wildfires on health outcomes [9] [13] [14] [15] [16], none have focused on rainforests in tropical regions that are located primarily in the low- and middle-income countries. Populations living in rainforest regions of the

1
2
3 Tropics include a disproportionate number of indigenous and other marginalized groups. Such
4 populations are likely be particularly vulnerable to the adverse health effects of wildfires and
5 deforestation given that they tend to be resource-poor, are at greater risk of premature morbidity and
6 mortality, and have limited access to healthcare. Climate variations, including elevated temperatures,
7 intense rainfall, and high humidity, can further impact health conditions [17]. Moreover, scoping
8 reviews on wildfires conducted previously have certain limitations, including their focus on (i)
9 specific population subgroups, (ii) a limited number of health outcomes, or (iii) a restricted search
10 across only a few databases and years. The two most recent scoping reviews on health effects of
11 deforestation were done five years ago, highlighting the need for an updated assessment [18] [19].
12 Conducting an updated review is crucial, especially considering the recent escalation of wildfires and
13 deforestation. This issue is particularly significant in Brazil, where fire outbreaks have been steadily
14 increasing, even though they have not reached the peak observed in 2004 [20] [21]. Such a review
15 will help identify and understand the specific ways in which wildfires and deforestation affect health
16 outcomes, hospitalizations, and vital statistics, the quantitative methods employed, and the data
17 sources used for these analyses.

18
19 Other critical areas of investigation include geographical mapping and the analytical methods
20 employed for analysis. There is a wide variety of information sources that provide mapping for the
21 occurrence of wildfires and deforestation, differentiating based on geographical scale and the time
22 period of change. Disparities in high-quality environmental data around the world highlight how some
23 places possess better information than others, which can be considered part of the phenomenon known
24 as the 'digital divide' [22]. Additionally, various analytical methods exist to study how wildfires and
25 deforestation impact people's health. The outcomes of such analyses heavily rely on the modelling
26 techniques employed, underscoring the crucial need to understand and utilize an array of available
27 methods. This understanding is pivotal in creating thorough and accurate insights to inform the
28 creation of future high-quality research and understand what key research gaps exist.

29
30 This scoping review aims to comprehensively map the intricate relationships between wildfires,
31 deforestation, and their impact on health outcomes in tropical regions. Our more specific objectives
32 will be to map: (i) the health outcomes affected by wildfires and deforestation in the tropical areas;
33 (ii) the methods used; (iii) and the data sources related to the wildfires and deforestation. This will
34 equip policymakers and researchers with essential information about this research area, highlighting
35 knowledge gaps and paving the way for future research and development.

36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 **Methods and Analysis**

This scoping review protocol follows the guidelines of the Joanna Briggs Institute. The protocol is based on the framework suggested by Peters, et al [23], Arksey and O'Malley [24], and enhanced by Levac et al. [25]. It was written according to the checklist provided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) [26].

The scoping review will follow the steps below: (1) identifying the research question; (2) identifying relevant studies; (3) study selection; (4) charting the data; (5) collating, summarising, and reporting the results. The scoping review protocol was previously registered with the Open Science Framework to identify ongoing reviews and avoid unnecessary duplication of research [27].

Step 1: identifying the research question

To enhance the organization of our research question and the criteria for inclusion and exclusion we adhered to the mnemonic PCC (Population, Concept, Context), which is described with the research question in the Table 1.

According to the Oxford Dictionary, wildfire means: "a very big fire that spreads quickly and burns natural areas like woods, forests and grassland". We adopt this definition; therefore, we consider any large fire that occur in different types of vegetation which can affect urban, peri urban or rural area. The deforestation is usually associated with human activity pursuing an economic purpose (e.g., farming timber logging, expansion and infrastructure, and mining). The tropical rainforest is a warm and humid biome characterized by year-round rainfall. Renowned for its thick layers of vegetation, it consists of three distinct canopy levels located between the Tropic of Cancer and the Tropic of Capricorn [28]. We will consider the deforestation of the tropical forests located in urban, peri-urban, or rural areas.

Table 1 – Scoping review questions and PCC mnemonic

Question	Population (P)	Concept (C)	Context (C)
----------	----------------	-------------	-------------

<p>1. What are the impacts of the wildfire and deforestation on the health outcomes, hospitalization, and vital statistics in the tropical rainforest areas?</p> <p>2. What are the methods and data sources used for this assessment?</p>	All individuals	Mapping of the wildfire and deforestation on the health outcomes	All the areas located in the tropical rainforests
--	-----------------	--	---

Step 2: Identifying relevant studies

Data sources

The search for scientific articles will be conducted in several databases: (1) Nursing Database (BDENF – Enfermagem), (2) National Bibliography in Argentine Health Sciences (BINACIS), (3) Coleciona SUS, (4) Desastres, (5) EconLit, (6) Embase, (7) Latin American and Caribbean Literature in Health Sciences (Lilacs), (8) Literature in Health Sciences from Caribbean countries (MedCaribe), (9) MEDLINE, (10) MEDLINE/PubMed, (11) Virtual Health Library of the Ministry of Health of Peru (MINSAPERU), (12) Literature from the Pan American Health Organization Headquarters Library (PAHO-IRIS), (13) Health Documentation Network in Mozambique (RDSM), (14) Recursos Multimídia, (15) Scopus, (16) Western Pacific Region Index Medicus (WPRIM). Access to Scopus database will be via the Capes Platform, while the databases corresponding to the previous identification number: (1), (2), (3), (4), (7), (8), (9), (11), (12), (13), (14), and (16) are available via the Virtual Health Library platform (Biblioteca Virtual da Saúde in Portuguese). In addition, references relevant to the topic will be scrutinised in the included articles.

Table 2 – Search terms by topics

<p>1. 'Wildfire' OR 'Deforestation'</p> <p>2. 'All categories of disease' OR 'Vital statistics' OR 'Hospitalization'</p> <p>3. 'Tropical rainforest' OR 'All country names with tropical rainforest'</p> <p>4. (1) AND (2) AND (3)</p>
--

Note: The complete list of terms used can be found in the appendix.

Search strategy

1
2
3 The search strategy will be defined for each database, following the inclusion and exclusion criteria.
4 The search terms were used according to the Medical Subject Headings (MeSH). The remaining
5 databases were adapted by Emtree and DeCS. The expression terms were categorized into three broad
6 aspects according to Table 2: (i) the exposure, including the wildfires and the deforestation terms, (ii)
7 a comprehensive list of diseases, hospitalization, vital statistics terms, and (iii) tropical rainforest
8 areas, including a list of countries with tropical rainforests [29]. The expression terms will be
9 combined with the Boolean operators 'AND' and 'OR' in the refinement. The complete search terms
10 in every database are in the appendix.
11
12
13
14
15
16
17
18
19

20 ***Step 3: Study selection***

21 To increase the consistency of the reading of the works, a team with two reviewers will participate,
22 in pairs, in the sequential evaluation stage of the titles, abstracts and text, independently, and then
23 will evaluate each abstract to the inclusion criteria. In case of disagreement between the authors, it
24 must be resolved by consensus or by the decision of one or two more authors.
25
26
27
28

29 The process will be registered in a flowchart of the review process according to the PRISMA-ScR
30 [26]. All studies were exported to the Rayyan Qatar Computing Research Institute (Rayyan®), and
31 then deduplicated by one reviewer.
32
33
34
35
36

37 **Inclusion criteria**

38 To determine and choose pertinent publications concerning the topic, the subsequent inclusion criteria
39 will be applied: (i) quantitative studies, such as correlational, ecological, cohort, experimental, and
40 cross-sectional studies, (ii) any individual or population groups exposed to wildfires, wildfire smoke
41 or deforestation regardless of the exposure duration, (iii) any disease, hospitalization, or vital
42 statistics, considered here as birth, death rate, and life expectancy, (iv) self-reported health condition.
43
44
45
46
47
48
49
50

51 **Exclusion criteria**

52 Studies will be excluded according to the following criteria: (i) theoretical studies; literature review
53 (e.g., scoping review and systematic review), letter and editorials; (ii) qualitative studies (interviews,
54 case studies etc.); (iii) environmental change only (e.g., extinction of wildlife, mosquitoes' habitats);
55 (iv) air pollution only (e.g., air pollution from factories, mines, vehicles, without any relation to
56 wildfires); (v) indoor fire; (vi) we will exclude studies solely focusing on health inequalities according
57
58
59
60

1
2
3 to PROGRESS Plus; and (vii) studies in which the exposed population is entirely outside the tropical
4 area, as delimited by the Tropic of Cancer and the Tropic of Capricorn.
5
6
7
8

9 ***Step 4: Charting the data***

10
11 The data of interest will be extracted with the data extraction tables and by filling out the data
12 extraction form (in the appendix) in Microsoft Excel. During the pilot stage, two reviewers will
13 independently conduct the task. Afterward, one reviewer will proceed, while the work will be
14 reviewed by a second reviewer for quality assurance. The results will be categorised according to the
15 review questions and charted in an iterative process, allowing the reviewers to continuously update
16 these charts when additional unforeseen data are encountered. The data extraction table will be
17 developed and tested, containing variables on the study reference (year of publication, author, journal,
18 full title), intervention type, exposure, and data source (e.g., country, origin of the exposure data
19 source), methods and findings (study design and modelling, health outcome, control, and treated
20 group, point estimate, and causal identification strategy), and limitations of the study.
21
22
23
24
25
26
27
28
29
30

31 ***Step 5: Collating, summarising and reporting the results***

32
33 All gathered data will be displayed in either tabular or diagrammatic formats to visually summarise
34 the outcomes of the studies. Initially, a table containing comprehensive information about the selected
35 papers will be provided, such as the number of studies, study design, exposure assessment (temporal
36 and spatial scale, and data sources), statistical methods (statistical models and identification
37 strategies), characteristics of study populations, and the countries where the studies were conducted.
38 The data will be categorized separately for wildfires and deforestation. Different tables will be used
39 to describe the detailed methods and data sources, followed by tables focused on findings and their
40 subgroups. Finally, we will consider the overall implications of the results to ensure that the scoping
41 review will provide relevant answers to the two main research questions previously posed.
42
43
44
45
46
47
48
49
50

51 **Author Contributions**

52 Gustavo Casais¹²³, Nathalia Sernizon Guimarães¹³⁴, Taísa Rodrigues Cortes²³, Julia Pescarini¹⁴,
53 Poliana Rebouças de Magalhães²³, Valerie Wells¹, José Firmino de Sousa Filho⁴, Danielson Jorge
54 Delgado Neves⁴, Michal Shimonovich³⁴, Jonathan Olsen⁴, Edgar Marcelino de Carvalho Neto¹, Philip
55 J. Cooper⁴, Srinivasa Vittal Katikireddi⁴, Lucas Emanuel⁴, Roberto F. S. Andrade⁴, Gervasio Ferreira
56 dos Santos⁴, Mauricio L. Barreto⁴.
57
58
59
60

1
2
3 ¹ Data search

4
5 ² Text Screening

6
7 ³ Data extraction

8
9 ⁴ Review

10 11 12 **Patient and public involvement**

13 There was no patient or public involvement in the design of this scoping review protocol.

14 15 16 17 **Competing Interests**

18 None declared.

19 20 21 22 **Funding sources/sponsors**

23 This research was funded by the NIHR (NIHR134801) using UK aid from the UK Government to
24 support global health research and by the Wellcome Trust grant (226306/Z/22/Z) awarded to the
25 CIDACS Climate and Environmental Platform (CIDACS-Clima). The views expressed in this
26 publication are those of the author(s) and not necessarily those of the NIHR or the UK government.
27 JO, MS, VW and SVK are employed by the MRC/CSO Social and Public Health Sciences Unit,
28 University of Glasgow, and supported by the Medical Research Council [grant numbers
29 MC_UU_00022/2; MC_UU_00022/4; and Chief Scientist Office [grant numbers SPHSU17;
30 SPHSU19]. The researchers were independent of the funders; the funders had no role in the study
31 design, data collection, analysis and interpretation of data, the decision to publish, or the preparation
32 of the manuscript.
33
34
35
36
37
38

39 **References**

- 40
41
42
43
44 [1] S. M. Hartinger, M. Yglesias-González, L. Blanco-Villafuerte, Y. K. Palmeiro-Silva, A. G.
45 Lescano, A. Stewart-Ibarra, ... and M. Romanello, "The 2022 South America report of The
46 Lancet Countdown on health and climate change: trust the science. Now that we know, we
47 must act.," *The Lancet Regional Health–Americas*, vol. 20, 2023.
- 48
49 [2] D. Da Mata and M. Dotta, "Commodity booms and the environment," SSRN 3900793, 2021.
- 50
51 [3] P. Dasgupta, *The economics of biodiversity: the Dasgupta review*, Hm Treasury, 2021.
- 52
53 [4] P. M. Lemieux, C. C. Lutes and D. A. Santoianni, "Emissions of organic air toxics from open
54 burning: a comprehensive review," *Progress in energy and combustion science*, vol. 30, no. 1,
55 2004.
56
57
58
59
60

- 1
2
3 [5] R. Xu, P. Yu, M. J. Abramson, F. H. Johnston, J. M. Samet, M. L. Bell, ... and Y. Guo,
4 "Wildfires, global climate change, and human health," *New England Journal of Medicine*, vol.
5 383, no. 22, pp. 2173-2181, 2020.
6
7 [6] Centre for Research on the Epidemiology of Disasters, United Nations Office for Disaster Risk
8 Reduction, "The human cost of disasters: an overview of the last 20 years (2000-2019)," 2020.
9
10 [7] C. Black and et al, "Wildfire smoke exposure and human health: Significant gaps in research
11 for a growing public health issue," *Environmental toxicology and pharmacology*, vol. 55, pp.
12 186-195, 2017.
13
14 [8] R. Rocha and A. A. Sant'Anna, "Winds of fire and smoke: Air pollution and health in the
15 Brazilian Amazon," *World Development*, vol. 151, p. 105722, 2022.
16
17 [9] E. Grant and J. D. Runkle, "Long-term health effects of wildfire exposure: a scoping review,"
18 *The Journal of Climate Change and Health*, vol. 6, p. 100110, 2022.
19
20 [10] S. C. D. C. Xavier, A. L. R. Roque, V. D. S. Lima, K. J. L. Monteiro, J. C. R. Otaviano, L. F.
21 C. Ferreira da Silva and A. M. Jansen, "Lower richness of small wild mammal species and
22 Chagas disease risk," *PLoS neglected tropical diseases*, vol. 6, no. 5, p. e1647.
23
24 [11] J. H. Ellwanger, B. Kulmann-Leal, V. L. Kaminski, J. Valverde-Villegas, A. B. G. VEIGA, F.
25 R. Spilki, ... and J. A. B. Chies, "Beyond diversity loss and climate change: Impacts of
26 Amazon deforestation on infectious diseases and public health," *Anais da Academia Brasileira
27 de Ciências*, vol. 92.
28
29 [12] D. Lawrence and K. Vandecar, "Effects of tropical deforestation on climate and agriculture,"
30 *Nature climate change*, vol. 5, no. 1, pp. 27-36, 2015.
31
32 [13] E. Nanjappan, E. Sullo, S. Shrestha, S. Thomas and E. Nouvet, "Californian Wildfires and
33 Associated Human Health Outcomes: An Epidemiological Scoping Review," *International
34 Journal of Trend in Scientific Research and Development*, vol. 5, no. 5, pp. 944-953, 2021.
35
36 [14] P. To, E. Eboime and V. I. Agyapong, "The impact of wildfires on mental health: a scoping
37 review," *Behavioral Sciences*, vol. 11, no. 9, p. 126, 2021.
38
39 [15] C. C. Melton, C. M. Fries, R. M. Smith and L. R. Mason, "Wildfires and Older Adults: A
40 Scoping Review of Impacts, Risks, and Interventions," *International journal of environmental
41 research and public health*, vol. 20, no. 13, p. 6252, 2023.
42
43 [16] C. E. Reid, M. Brauer, F. H. Johnston, M. Jerrett, J. R. Balmes and C. T. Elliott, "Critical
44 review of health impacts of wildfire smoke exposure," *Environmental health perspectives*, vol.
45 124, no. 9, pp. 1334-1343, 2016.
46
47 [17] R. Davis, G. R. McGregor and K. B. Enfield, "Humidity: A review and primer on atmospheric
48 moisture and human health," *Environmental research*, vol. 144, pp. 106-116, 2016.
49
50 [18] N. D. Burkett-Cadena and A. Y. Vittor, "Deforestation and vector-borne disease: forest
51 conversion favors important mosquito vectors of human pathogens," *Basic and applied
52 ecology*, vol. 26, pp. 101-110, 2018.
53
54
55
56
57
58
59
60

- 1
2
3 [19] M. Mastel, A. Bussalleu, V. A. Paz-Soldán, G. Salmón-Mulanovich, A. Valdés-Velásquez and
4 S. M. Hartinger, “Critical linkages between land use change and human health in the Amazon
5 region: A scoping review,” *PloS one*, vol. 13, no. 6, p. e0196414, 2018.
6
7
8 [20] M. Osborne, “Wildfires Reached a Five-Year High in the Brazilian Amazon,” *Smithsonian*
9 *Magazine*, 9 September 2022. [Online]. Available: [https://www.smithsonianmag.com/smart-](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/)
10 [news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/). [Accessed 31
11 October 2023].
12
13 [21] G. Alecrim, “Número de queimadas na Amazônia em 2022 supera 2021, mas é inferior ao
14 recorde de 2004,” *CNN Brasil*, 20 September 2022. [Online]. Available:
15 [https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004)
16 [2021-mas-e-inferior-ao-recorde-de-2004](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004). [Accessed 2023 October 31].
17
18 [22] N. Kshetri, D. C. Rojas Torres, H. Besada and M. A. Moros Ochoa, “Big data as a tool to
19 monitor and deter environmental offenders in the global south: A multiple case study,”
20 *Sustainability*, vol. 12, no. 24, p. 10436, 2020.
21
22 [23] M. D. Peters, C. M. Godfrey, H. Khalil, P. McInerney, D. Parker and C. B. Soares, “Guidance
23 for conducting systematic scoping reviews,” *JBI Evidence Implementation*, vol. 13, no. 3, pp.
24 141-146, 2015.
25
26 [24] H. Arksey and L. O'Malley, “Scoping studies: towards a methodological framework,”
27 *International journal of social research methodology*, vol. 8, no. 1, pp. 19-32, 2005.
28
29 [25] D. Levac, H. Colquhoun and K. K. O'Brien, “Scoping studies: advancing the methodology,”
30 *Implementation science*, vol. 5, pp. 1-9, 2010.
31
32 [26] A. C. Tricco, E. Lillie, W. Zarin, K. K. O'Brien, H. Colquhoun, D. Levac, ... and S. E. Straus,
33 “PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation,” *Annals*
34 *of internal medicine*, vol. 169, no. 7, pp. 467-473, 2018.
35
36 [27] G. Casais, N. S. Guimarães, T. R. Cortes, J. Pescarini, P. R. d. Magalhães, V. Wells, J. F. d.
37 Sousa Filho, D. J. D. Neves, M. Shimonovich, J. R. Olsen, E. M. d. Carvalho Neto, P. J.
38 Cooper, S. V. Katikireddi, R. Andrade, G. F. d. Santos and M. L. Barreto, “Wildfire,
39 deforestation, and health in tropical rainforest: a scoping review protocol,” 2023. [Online].
40 Available: <https://osf.io/pnqc7/>.
41
42 [28] Nasa Earth Observatory, “Rainforest,” [Online]. Available:
43 <https://earthobservatory.nasa.gov/biome/biorainforest.php>.
44
45 [29] D. M. Olson, E. Dinerstein, N. D. Wikramanayake, ... and K. Kassem, “Terrestrial ecoregions
46 of the world: A new map of life on Earth,” *BioScience*, vol. 51, no. 11, pp. 933-938, 2001.
47
48 [30] G. Dahlgren and M. Whitehead, “The Dahlgren-Whitehead model of health determinants: 30
49 years on and still chasing rainbows,” *Public health*, vol. 199, pp. 20-24, 2021.
50
51 [31] Pan American Health Organization, “Social Determinants of Health,” [Online]. Available:
52 <https://www.paho.org/en/topics/social-determinants-health>. [Accessed 12 July 2023].
53
54
55
56
57
58
59
60

- 1
2
3 [32] M. Marmot, "Social determinants of health inequalities," *The lancet*, vol. 365, no. 9464, pp.
4 1099-1104, 2005.
5
6 [33] B. Armstrong, F. Sera, A. M. Vicedo-Cabrera, R. Abrutzky, D. O. Åström, M. L. Bell, ... and
7 A. Gasparri, "The role of humidity in associations of high temperature with mortality: a
8 multicountry, multicity study," *Environmental health perspectives*, vol. 127, no. 9, p. 097007,
9 2019.
10
11 [34] J. Gao, Y. Sun, Y. Lu and L. Li, "Impact of ambient humidity on child health: a systematic
12 review," *PloS one*, vol. 9, no. 12, p. e112508, 2014.
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Appendices

Appendix I – Literature search

MEDLINE/PubMed

("wildfires"[MeSH Terms] OR "wildfires"[Text Word] OR "Wildfire"[All Fields] OR "Wildland Fires"[All Fields] OR "Brush Fires"[All Fields] OR "Brush Fire"[All Fields] OR "Forest Fires"[All Fields] OR "fire forest"[All Fields] OR "fires forest"[All Fields] OR "Forest Fire"[All Fields] OR "Wild Fires"[All Fields] OR "Wild Fire"[All Fields] OR "Fires"[MeSH Terms] OR "Fires"[Text Word] OR "Fire"[All Fields] OR "fire outbreaks"[All Fields] OR "Deforestation"[All Fields] OR "Grassfire"[All Fields] OR "prescribed burn"[All Fields] OR "prescribed fire"[All Fields]) AND ("Tropical Climate"[MeSH Terms] OR "Tropical Climate"[Text Word] OR "climate tropical"[All Fields] OR "climates tropical"[All Fields] OR "Tropical Climates"[All Fields] OR "Rainforest"[MeSH Terms] OR "Rainforest"[Text Word] OR "Rainforests"[All Fields] OR "Rain Forest"[All Fields] OR "forest rain"[All Fields] OR "Rain Forests"[All Fields] OR "Tropical Rainforest"[All Fields] OR "rainforest tropical"[All Fields] OR "rainforests tropical"[All Fields] OR "Tropical Rainforests"[All Fields] OR "Amazon"[All Fields] OR "Brazil"[All Fields] OR "Argentina"[All Fields] OR "Peru"[All Fields] OR "Ecuador"[All Fields] OR "Bolivia"[All Fields] OR "Colombia"[All Fields] OR "Venezuela"[All Fields] OR "Guyana"[All Fields] OR "Suriname"[All Fields] OR "French Guiana"[All Fields] OR "Paraguay"[All Fields] OR "Panama"[All Fields] OR "El Salvador"[All Fields] OR "Belize"[All Fields] OR "Costa Rica"[All Fields] OR "El Salvador"[All Fields] OR "Guatemala"[All Fields] OR "Honduras"[All Fields] OR "Nicaragua"[All Fields] OR "Panama"[All Fields] OR "Anguilla"[All Fields] OR "Antigua and Barbuda"[All Fields] OR "Aruba"[All Fields] OR "Bahamas"[All Fields] OR "Barbados"[All Fields] OR "British Virgin Islands"[All Fields] OR "Cayman Islands"[All Fields] OR "Cuba"[All Fields] OR "Dominica"[All Fields] OR "Dominican Republic"[All Fields] OR "Grenada"[All Fields] OR "Guadeloupe"[All Fields] OR "Haiti"[All Fields] OR "Jamaica"[All Fields] OR "Martinique"[All Fields] OR "Montserrat"[All Fields] OR "Netherlands Antilles"[All Fields] OR "Puerto Rico"[All Fields] OR "Saint Barthelemy"[All Fields] OR "Saint Kits and Nevis"[All Fields] OR "Saint Lucia"[All Fields] OR "Saint Martin"[All Fields] OR "Saint Vincent and the Grenadines"[All Fields] OR "Trinidad and Tobago"[All Fields] OR "United States Virgin Islands"[All Fields] OR "Mexico"[All Fields] OR "Hawaii"[All Fields] OR "Cape Verde"[All Fields] OR "Sao Tome and Principe"[All Fields] OR "Gambia"[All Fields] OR "Senegal"[All Fields] OR "Guinea-Bissau"[All Fields] OR "Guinea"[All Fields] OR "Sierra Leone"[All Fields] OR "Liberia"[All Fields] OR "Ivory Coast"[All Fields] OR "Ghana"[All Fields] OR "Togo"[All Fields] OR "Benin"[All Fields] OR "Nigeria"[All Fields] OR "Cameroon"[All Fields] OR "Central African Republic"[All Fields] OR "South Sudan"[All Fields] OR "Ethiopia"[All Fields] OR "Equatorial Guinea"[All Fields] OR "Gabon"[All Fields] OR "Congo"[All Fields] OR "Democratic Republic of the Congo"[All Fields] OR "Uganda"[All Fields] OR "Rwanda"[All Fields] OR "Burundi"[All Fields] OR "Kenya"[All Fields] OR "Somalia"[All Fields] OR "Tanzania"[All Fields] OR "Zambia"[All Fields] OR "Mozambique"[All Fields] OR "Madagascar"[All Fields] OR "Seychelles"[All Fields] OR "Mauritius"[All Fields] OR "Comoros"[All Fields] OR "Botswana"[All Fields] OR "Malawi"[All Fields] OR "Brunei"[All Fields] OR "Burma"[All Fields] OR "Myanmar"[All Fields] OR "Cambodia"[All Fields] OR "East Timor"[All Fields] OR

1
2
3 "Indonesia"[All Fields] OR "Laos"[All Fields] OR "Malaysia"[All Fields] OR "Philippines"[All
4 Fields] OR "Singapore"[All Fields] OR "Thailand"[All Fields] OR "Vietnam"[All Fields] OR
5 "India"[All Fields] OR "Papua New Guinea"[All Fields] OR "Australia"[All Fields] OR "Solomon
6 Islands"[All Fields] OR "Vanuatu"[All Fields] OR "New Caledonia"[All Fields]) AND
7 ("cardiovascular diseases"[MeSH Terms] OR "cardiovascular diseases"[Text Word] OR
8 "Cardiovascular Disease"[All Fields] OR "disease cardiovascular"[All Fields] OR "Major Adverse
9 Cardiac Events"[All Fields] OR "Cardiac Events"[All Fields] OR "Cardiac Event"[All Fields] OR
10 "event cardiac"[All Fields] OR "Adverse Cardiac Event"[All Fields] OR "Adverse Cardiac
11 Events"[All Fields] OR "cardiac events adverse"[All Fields] OR "chemically induced
12 disorders"[MeSH Terms] OR "chemically induced disorders"[Text Word] OR "chemically induced
13 disorders"[All Fields] OR "Chemically-Induced Disorder"[All Fields] OR "congenital, hereditary,
14 and neonatal diseases and abnormalities"[MeSH Terms] OR "congenital hereditary and neonatal
15 diseases and abnormalities"[Text Word] OR "Congenital Disorders"[All Fields] OR "disorder
16 congenital"[All Fields] OR "disorders congenital"[All Fields] OR "Neonatal Diseases and
17 Abnormalities"[All Fields] OR "Digestive System Diseases"[MeSH Terms] OR "Digestive System
18 Diseases"[Text Word] OR "Digestive System Disease"[All Fields] OR "Digestive System
19 Disorders"[All Fields] OR "Digestive System Disorder"[All Fields] OR "system disorders
20 digestive"[All Fields] OR "Hepatobiliary Disorders"[All Fields] OR "Hepatobiliary Disorder"[All
21 Fields] OR "Hepatobiliary Diseases"[All Fields] OR "Hepatobiliary Disease"[All Fields] OR
22 "Disorders of Environmental Origin"[MeSH Terms] OR "Disorders of Environmental Origin"[Text
23 Word] OR "Endocrine System Diseases"[MeSH Terms] OR "Endocrine System Diseases"[Text
24 Word] OR "disease endocrine system"[All Fields] OR "diseases endocrine system"[All Fields] OR
25 "Endocrine System Disease"[All Fields] OR "system disease endocrine"[All Fields] OR "system
26 diseases endocrine"[All Fields] OR "Endocrine Diseases"[All Fields] OR "disease endocrine"[All
27 Fields] OR "diseases endocrine"[All Fields] OR "Endocrine Disease"[All Fields] OR "Diseases of
28 Endocrine System"[All Fields] OR "Eye Diseases"[MeSH Terms] OR "Eye Diseases"[Text Word]
29 OR "Eye Disease"[All Fields] OR "Eye Disorders"[All Fields] OR "Eye Disorder"[All Fields] OR
30 "Hemic and Lymphatic Diseases"[MeSH Terms] OR "Hemic and Lymphatic Diseases"[Text Word]
31 OR "Blood and Lymphatic System Disorders"[All Fields] OR "Immune System Diseases"[MeSH
32 Terms] OR "Immune System Diseases"[Text Word] OR "disease immune system"[All Fields] OR
33 "Immune System Disease"[All Fields] OR "Immunologic Diseases"[All Fields] OR "disease
34 immunologic"[All Fields] OR "Immunologic Disease"[All Fields] OR "Immunological
35 Diseases"[All Fields] OR "disease immunological"[All Fields] OR "Immunological Disease"[All
36 Fields] OR "Immune Diseases"[All Fields] OR "disease immune"[All Fields] OR "Immune
37 Disease"[All Fields] OR "Diseases of Immune System"[All Fields] OR "Immune Disorders"[All
38 Fields] OR "Immune Disorder"[All Fields] OR "Immune System Disorders"[All Fields] OR
39 "disorder immune system"[All Fields] OR "Immune System Disorder"[All Fields] OR
40 "Infections"[MeSH Terms] OR "Infections"[Text Word] OR "Infection and Infestation"[All Fields]
41 OR "Infestation and Infection"[All Fields] OR "Infections and Infestations"[All Fields] OR
42 "Infestations and Infections"[All Fields] OR "Infection"[All Fields] OR "Musculoskeletal
43 Diseases"[MeSH Terms] OR "Musculoskeletal Diseases"[Text Word] OR "Musculoskeletal
44 Disease"[All Fields] OR "Orthopedic Disorders"[All Fields] OR "Orthopedic Disorder"[All Fields]
45 OR "Neoplasms"[MeSH Terms] OR "Neoplasms"[Text Word] OR "Tumor"[All Fields] OR
46 "Neoplasm"[All Fields] OR "Tumors"[All Fields] OR "Neoplasia"[All Fields] OR "Neoplasias"[All
47 Fields] OR "Cancer"[All Fields] OR "Cancers"[All Fields] OR "Malignant Neoplasm"[All Fields]
48 OR "Malignancy"[All Fields] OR "Malignancies"[All Fields] OR "Malignant Neoplasms"[All
49 Fields] OR "neoplasm malignant"[All Fields] OR "neoplasms malignant"[All Fields] OR "Benign
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Neoplasms"[All Fields] OR "Benign Neoplasm"[All Fields] OR "neoplasms benign"[All Fields]
4 OR "neoplasm benign"[All Fields] OR "Nervous System Diseases"[MeSH Terms] OR "Nervous
5 System Diseases"[Text Word] OR "disease nervous system"[All Fields] OR "diseases nervous
6 system"[All Fields] OR "Nervous System Disease"[All Fields] OR "Neurologic Disorders"[All
7 Fields] OR "disorder neurologic"[All Fields] OR "disorders neurologic"[All Fields] OR
8 "Neurologic Disorder"[All Fields] OR "Neurological Disorders"[All Fields] OR "disorder
9 neurological"[All Fields] OR "disorders neurological"[All Fields] OR "Neurological Disorder"[All
10 Fields] OR "Nervous System Disorders"[All Fields] OR "disorder nervous system"[All Fields] OR
11 "disorders nervous system"[All Fields] OR "Nervous System Disorder"[All Fields] OR "Nutritional
12 and Metabolic Diseases"[MeSH Terms] OR "Nutritional and Metabolic Diseases"[Text Word] OR
13 "Occupational Diseases"[MeSH Terms] OR "Occupational Diseases"[Text Word] OR "disease
14 occupational"[All Fields] OR "Occupational Disease"[All Fields] OR "Occupational Illnesses"[All
15 Fields] OR "illnesses occupational"[All Fields] OR "diseases occupational"[All Fields] OR
16 "Otorhinolaryngologic Diseases"[MeSH Terms] OR "Otorhinolaryngologic Diseases"[Text Word]
17 OR "Otorhinolaryngological Disease"[All Fields] OR "Otorhinolaryngological Diseases"[All
18 Fields] OR "Otolaryngological Diseases"[All Fields] OR "diseases otolaryngological"[All Fields]
19 OR "Otolaryngological Disease"[All Fields] OR "Otorhinolaryngologic Disease"[All Fields] OR
20 "ENT Diseases"[All Fields] OR "disease ent"[All Fields] OR "diseases ent"[All Fields] OR "ENT
21 Disease"[All Fields] OR "Otolaryngologic Diseases"[All Fields] OR "disease otolaryngologic"[All
22 Fields] OR "diseases otolaryngologic"[All Fields] OR "Otolaryngologic Disease"[All Fields] OR
23 "pathological conditions, signs and symptoms"[MeSH Terms] OR "pathological conditions signs
24 and symptoms"[Text Word] OR "Respiratory Tract Diseases"[MeSH Terms] OR "Respiratory Tract
25 Diseases"[Text Word] OR "disease respiratory tract"[All Fields] OR "Respiratory Tract
26 Disease"[All Fields] OR "Respiratory Diseases"[All Fields] OR "Respiratory System Diseases"[All
27 Fields] OR "disease respiratory system"[All Fields] OR "Respiratory System Disease"[All Fields]
28 OR "Skin and Connective Tissue Diseases"[MeSH Terms] OR "Skin and Connective Tissue
29 Diseases"[Text Word] OR "Stomatognathic Diseases"[MeSH Terms] OR "Stomatognathic
30 Diseases"[Text Word] OR "Stomatognathic Disease"[All Fields] OR "Mouth and Tooth
31 Diseases"[All Fields] OR "Dental Diseases"[All Fields] OR "Dental Disease"[All Fields] OR
32 "disease dental"[All Fields] OR "diseases dental"[All Fields] OR "Urogenital Diseases"[MeSH
33 Terms] OR "Urogenital Diseases"[Text Word] OR "disease urogenital"[All Fields] OR "Urogenital
34 Disease"[All Fields] OR "Genitourinary Diseases"[All Fields] OR "disease genitourinary"[All
35 Fields] OR "Genitourinary Disease"[All Fields] OR "Wounds and Injuries"[MeSH Terms] OR
36 "Wounds and Injuries"[Text Word] OR "Injuries and Wounds"[All Fields] OR "Wounds and
37 Injury"[All Fields] OR "Injury and Wounds"[All Fields] OR "wounds injury"[All Fields] OR
38 "Trauma"[All Fields] OR "Traumas"[All Fields] OR "injuries wounds"[All Fields] OR "research
39 related injuries"[All Fields] OR "research related injuries"[All Fields] OR "Research-Related
40 Injury"[All Fields] OR "Injuries"[All Fields] OR "Injury"[All Fields] OR "Wounds"[All Fields] OR
41 "Wound"[All Fields] OR "Vital Statistics"[MeSH Terms] OR "Vital Statistics"[Text Word] OR
42 "statistics vital"[All Fields] OR "Vital Statistics Registration"[All Fields] OR "Registration of Vital
43 Statistics"[All Fields] OR "Vital Statistics Registrations"[All Fields] OR "registration vital
44 statistics"[All Fields] OR "registrations vital statistics"[All Fields] OR "Patient Care"[MeSH
45 Terms] OR "Patient Care"[Text Word] OR "care patient"[All Fields] OR "Informal care"[All
46 Fields] OR "Informal cares"[All Fields] OR "care informal"[All Fields])
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Date of search: August 18, 2023

1
2
3 Results: 2,296 [4]
4
5
6

7 Scopus

8
9 Search: ("wildfires" OR "wildfire" OR "wildland fires" OR "brush fires" OR "brush fire" OR "forest
10 fires" OR "fire forest" OR "fires forest" OR "forest fire" OR "wild fires" OR "wild fire" OR "fires"
11 OR "fire" OR "fire outbreaks" OR "deforestation" OR "grassfire" OR "prescribed burn" OR
12 "prescribed fire")AND ("tropical climate" OR "climate tropical" OR "climates tropical" OR
13 "tropical climates" OR "rainforest" OR "rainforests" OR "rain forest" OR "forest rain" OR "rain
14 forests" OR "tropical rainforest" OR "rainforest tropical" OR "rainforests tropical" OR "tropical
15 rainforests" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia"
16 OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR
17 "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR
18 "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and
19 Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman
20 Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe"
21 OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR
22 "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint
23 Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and Tobago" OR "United States
24 Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR
25 "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR
26 "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central
27 African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR
28 "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR
29 "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR "Mozambique" OR "Madagascar" OR
30 "Seychelles" OR "Mauritius" OR "Comoros" OR "Botswana" OR "Malawi" OR "Brunei" OR
31 "Burma" OR "Myanmar" OR "Cambodia" OR "East Timor" OR "Indonesia" OR "Laos" OR
32 "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam" OR "India" OR
33 "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR "Vanuatu" OR "New Caledonia")
34 AND ("cardiovascular diseases" OR "Cardiovascular Disease" OR "disease cardiovascular" OR
35 "Major Adverse Cardiac Events" OR "Cardiac Events" OR "Cardiac Event" OR "event cardiac" OR
36 "Adverse Cardiac Event" OR "Adverse Cardiac Events" OR "cardiac events adverse" OR
37 "chemically induced disorders" OR "chemically induced disorders" OR "Chemically-Induced
38 Disorder" OR "congenital, hereditary, and neonatal diseases and abnormalities" OR "Congenital
39 Disorders" OR "disorder congenital" OR "disorders congenital" OR "Neonatal Diseases and
40 Abnormalities" OR "Digestive System Diseases" OR "Digestive System Disease" OR "Digestive
41 System Disorders" OR "Digestive System Disorder" OR "system disorders digestive" OR
42 "Hepatobiliary Disorders" OR "Hepatobiliary Disorder" OR "Hepatobiliary Diseases" OR
43 "Hepatobiliary Disease" OR "Disorders of Environmental Origin" OR "Endocrine System Diseases"
44 OR "disease endocrine system" OR "diseases endocrine system" OR "Endocrine System Disease"
45 OR "system disease endocrine" OR "system diseases endocrine" OR "Endocrine Diseases" OR
46 "disease endocrine" OR "diseases endocrine" OR "Endocrine Disease" OR "Diseases of Endocrine
47 System" OR "Eye Diseases" OR "Eye Disease" OR "Eye Disorders" OR "Eye Disorder" OR
48 "Hemic and Lymphatic Diseases" OR "Blood and Lymphatic System Disorders" OR "Immune
49 System Diseases" OR "disease immune system" OR "Immune System Disease" OR "Immunologic
50 Diseases" OR "disease immunologic" OR "Immunologic Disease" OR "Immunological Diseases"

1
2
3 OR "disease immunological" OR "Immunological Disease" OR "Immune Diseases" OR "disease
4 immune" OR "Immune Disease" OR "Diseases of Immune System" OR "Immune Disorders" OR
5 "Immune Disorder" OR "Immune System Disorders" OR "disorder immune system" OR "Immune
6 System Disorder" OR "Infections" OR "Infection and Infestation" OR "Infestation and Infection"
7 OR "Infections and Infestations" OR "Infestations and Infections" OR "Infection" OR
8 "Musculoskeletal Diseases" OR "Musculoskeletal Disease" OR "Orthopedic Disorders" OR
9 "Orthopedic Disorder" OR "Neoplasms" OR "Tumor" OR "Neoplasm" OR "Tumors" OR
10 "Neoplasia" OR "Neoplasias" OR "Cancer" OR "Cancers" OR "Malignant Neoplasm" OR
11 "Malignancy" OR "Malignancies" OR "Malignant Neoplasms" OR "neoplasm malignant" OR
12 "neoplasms malignant" OR "Benign Neoplasms" OR "Benign Neoplasm" OR "neoplasms benign"
13 OR "neoplasm benign" OR "Nervous System Diseases" OR "disease nervous system" OR "diseases
14 nervous system" OR "Nervous System Disease" OR "Neurologic Disorders" OR "disorder
15 neurologic" OR "disorders neurologic" OR "Neurologic Disorder" OR "Neurological Disorders"
16 OR "disorder neurological" OR "disorders neurological" OR "Neurological Disorder" OR "Nervous
17 System Disorders" OR "disorder nervous system" OR "disorders nervous system" OR "Nervous
18 System Disorder" OR "Nutritional and Metabolic Diseases" OR "Occupational Diseases" OR
19 "disease occupational" OR "Occupational Disease" OR "Occupational Illnesses" OR "illnesses
20 occupational" OR "diseases occupational" OR "Otorhinolaryngologic Diseases" OR
21 "Otorhinolaryngological Disease" OR "Otorhinolaryngological Diseases" OR "Otolaryngological
22 Diseases" OR "diseases otolaryngological" OR "Otolaryngological Disease" OR
23 "Otorhinolaryngologic Disease" OR "ENT Diseases" OR "disease ent" OR "diseases ent" OR "ENT
24 Disease" OR "Otolaryngologic Diseases" OR "disease otolaryngologic" OR "diseases
25 otolaryngologic" OR "Otolaryngologic Disease" OR "pathological conditions, signs and symptoms"
26 OR "Respiratory Tract Diseases" OR "disease respiratory tract" OR "Respiratory Tract Disease" OR
27 "Respiratory Diseases" OR "Respiratory System Diseases" OR "disease respiratory system" OR
28 "Respiratory System Disease" OR "Skin and Connective Tissue Diseases" OR "Stomatognathic
29 Diseases" OR "Stomatognathic Disease" OR "Mouth and Tooth Diseases" OR "Dental Diseases"
30 OR "Dental Disease" OR "disease dental" OR "diseases dental" OR "Urogenital Diseases" OR
31 "disease urogenital" OR "Urogenital Disease" OR "Genitourinary Diseases" OR "disease
32 genitourinary" OR "Genitourinary Disease" OR "Wounds and Injuries" OR "Injuries and Wounds"
33 OR "Wounds and Injury" OR "Injury and Wounds" OR "wounds injury" OR "Trauma" OR
34 "Traumas" OR "injuries wounds" OR "research related injuries" OR "research related injuries" OR
35 "Research-Related Injury" OR "Injuries" OR "Injury" OR "Wounds" OR "Wound" OR "Vital
36 Statistics" OR "statistics vital" OR "Vital Statistics Registration" OR "Registration of Vital
37 Statistics" OR "Vital Statistics Registrations" OR "registration vital statistics" OR "registrations
38 vital statistics" OR "Patient Care" OR "care patient" OR "Informal care" OR "Informal cares" OR
39 "care informal")

40
41
42
43
44
45
46
47
48
49
50
51 Date of search: August 18, 2023

52
53 Results: 1,604

54
55
56
57
58 **Biblioteca Virtual em Saúde**
59
60

1
2
3 #1 "Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires"
4 OR "Incendios"

5
6 #2 "Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR "Rainforest" OR "Bosque
7 Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR
8 "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR
9 "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR
10 "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba"
11 OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR
12 "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica"
13 OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint
14 Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and
15 the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR
16 "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-
17 Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo"
18 OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR
19 "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the
20 Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR
21 "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros"
22 OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East
23 Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand"
24 OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR
25 "Vanuatu" OR "New Caledonia"

26
27 #3 "Doenças Cardiovasculares" OR "Cardiovascular Diseases" OR "Enfermedades
28 Cardiovasculares" OR "Distúrbios Induzidos Quimicamente" OR "Chemically-Induced Disorders"
29 OR "Trastornos Químicamente Inducidos" OR "Doenças e Anormalidades Congênicas, Hereditárias
30 e Neonatais" OR "Congenital, Hereditary, and Neonatal Diseases and Abnormalities" OR
31 "Enfermedades y Anomalías Neonatales Congénitas y Hereditarias" OR "Doenças do Sistema
32 Digestório" OR "Digestive System Diseases" OR "Transtornos de Origem Ambiental" OR
33 "Disorders of Environmental Origin" OR "Trastornos de Origen Ambiental" OR "Doenças do
34 Sistema Endócrino" OR "Endocrine System Diseases" OR "Enfermedades del Sistema Endocrino"
35 OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças Sanguíneas e Linfáticas" OR "Hemic and
36 Lymphatic Diseases" OR "Enfermedades Hematológicas y Linfáticas" OR "Doenças do Sistema
37 Imunitário" OR "Immune System Diseases" OR "Enfermedades del Sistema Inmune" OR
38 "Infecções" OR "Infections" OR "Infecciones" OR "Doenças Musculoesqueléticas" OR
39 "Musculoskeletal Diseases" OR "Enfermedades Musculoesqueléticas" OR "Neoplasias" OR
40 "Neoplasms" OR "Doenças do Sistema Nervoso" OR "Nervous System Diseases" OR
41 "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais e Metabólicas" OR "Nutritional
42 and Metabolic Diseases" OR "Enfermedades Nutricionales y Metabólicas OR Doenças
43 Profissionais" OR "Occupational Diseases" OR "Enfermedades Profesionales" OR
44 "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR "Enfermedades
45 Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR "Pathological
46 Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças
47 Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças
48 da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades
49 de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases"
50 OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR

"Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente"

Detailed search:

("Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires" OR "Incendios") AND ("Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR "Rainforest" OR "Bosque Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros" OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR "Vanuatu" OR "New Caledonia") AND ("Doenças Cardiovasculares" OR "Cardiovascular Diseases" OR "Enfermedades Cardiovasculares" OR "Distúrbios Induzidos Quimicamente" OR "Chemically-Induced Disorders" OR "Trastornos Químicamente Inducidos" OR "Doenças e Anormalidades Congênitas, Hereditárias e Neonatais" OR "Congenital, Hereditary, and Neonatal Diseases and Abnormalities" OR "Enfermedades y Anomalías Neonatales Congénitas y Hereditarias" OR "Doenças do Sistema Digestório" OR "Digestive System Diseases" OR "Transtornos de Origem Ambiental" OR "Disorders of Environmental Origin" OR "Trastornos de Origen Ambiental" OR "Doenças do Sistema Endócrino" OR "Endocrine System Diseases" OR "Enfermedades del Sistema Endocrino" OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças Sanguíneas e Linfáticas" OR "Hemic and Lymphatic Diseases" OR "Enfermedades Hematológicas y Linfáticas" OR "Doenças do Sistema Imunitário" OR "Immune System Diseases" OR "Enfermedades del Sistema Inmune" OR "Infecções" OR "Infections" OR "Infecciones" OR "Doenças Musculoesqueléticas" OR "Musculoskeletal Diseases" OR "Enfermedades Musculoesqueléticas" OR "Neoplasias" OR "Neoplasms" OR "Doenças do Sistema Nervoso" OR "Nervous System Diseases" OR "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais e Metabólicas" OR "Nutritional and Metabolic Diseases" OR "Enfermedades Nutricionales y Metabólicas" OR "Doenças Profissionais" OR "Occupational Diseases" OR "Enfermedades Profesionales" OR "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR "Enfermedades Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR

"Pathological Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases" OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR "Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente")

Date of search: August 18, 2023

Results: Lilacs (n = 44), Medline (n = 246), WPRIM (n = 3), BDENF – Enfermagem (n = 2), MINASPERÚ (n = 2), Recursos Multimídia (n = 2), BINACIS (n = 1), Desastres (n = 1), MedCarib (n = 1), PAHO-IRIS (n = 1), RDSM (n = 1), Coleciona SUS (n = 1).

Embase

	#4
#1 AND #2 AND #3	
	4,019

	#3
('wildfires'/syn OR 'fire'/syn OR 'deforestation'/syn) AND [embase]/lim	
	42,804

	#2
--	----

('tropical climate'/syn OR 'climate tropical' OR 'climates tropical' OR 'tropical climates' OR 'rainforest'/syn OR 'rainforests' OR 'rain forest'/syn OR 'forest rain' OR 'rain forests' OR 'tropical rainforest'/syn OR 'rainforest tropical'/syn OR 'rainforests tropical' OR 'tropical rainforests' OR 'amazon'/syn OR 'brazil'/syn OR 'argentina'/syn OR 'peru'/syn OR 'ecuador'/syn OR 'bolivia'/syn OR 'colombia'/syn OR 'venezuela'/syn OR 'guyana'/syn OR 'suriname'/syn OR 'french guiana'/syn OR 'paraguay'/syn OR 'belize'/syn OR 'costa rica'/syn OR 'el salvador'/syn OR 'guatemala'/syn OR 'honduras'/syn OR 'nicaragua'/syn OR 'panama'/syn OR 'anguilla'/syn OR 'antigua and barbuda'/syn OR 'aruba'/syn OR 'bahamas'/syn OR 'barbados'/syn OR 'british virgin islands'/syn OR 'cayman islands'/syn OR 'cuba'/syn OR 'dominica'/syn OR 'dominican republic'/syn OR 'grenada'/syn OR 'guadeloupe'/syn OR 'haiti'/syn OR 'jamaica'/syn OR 'martinique'/syn OR 'montserrat'/syn OR 'netherlands antilles'/syn OR 'puerto rico'/syn OR 'saint barthelemy'/syn OR 'saint kits and nevis' OR 'saint lucia'/syn OR 'saint martin'/syn OR 'saint vincent and the grenadines'/syn OR 'trinidad and tobago'/syn OR 'united states virgin islands'/syn OR 'mexico'/syn OR 'hawaii'/syn OR 'cape verde'/syn OR 'sao tome and principe'/syn OR 'gambia'/syn OR 'senegal'/syn OR 'guinea-bissau'/syn OR 'guinea'/syn OR 'sierra leone'/syn OR 'liberia'/syn OR 'ivory coast'/syn OR 'ghana'/syn OR 'togo'/syn OR 'benin'/syn OR 'nigeria'/syn

OR 'cameroon'/syn OR 'central african republic'/syn OR 'south sudan'/syn OR 'ethiopia'/syn
 OR 'equatorial guinea'/syn OR 'gabon'/syn OR 'congo'/syn OR 'democratic republic of the
 congo'/syn OR 'uganda'/syn OR 'rwanda'/syn OR 'burundi'/syn OR 'kenya'/syn OR 'somalia'/syn
 OR 'tanzania'/syn OR 'zambia'/syn OR 'mozambique'/syn OR 'madagascar'/syn OR 'seychelles'/syn
 OR 'mauritius'/syn OR 'comoros'/syn OR 'botswana'/syn OR 'malawi'/syn OR 'brunei'/syn
 OR 'burma'/syn OR 'myanmar'/syn OR 'cambodia'/syn OR 'east timor'/syn OR 'indonesia'/syn
 OR 'laos'/syn OR 'malaysia'/syn OR 'philippines'/syn OR 'singapore'/syn OR 'thailand'/syn
 OR 'vietnam'/syn OR 'india'/syn OR 'papua new guinea'/syn OR 'australia'/syn OR 'solomon
 islands'/syn OR 'vanuatu'/syn OR 'new caledonia'/syn) AND [embase]/lim

[4,621,441](#)

#1

('patient care'/syn OR 'vital statistics'/syn OR 'wounds and injuries'/syn OR 'urogenital tract
 disease'/syn OR 'stomatognathic diseases'/syn OR 'skin and connective tissue diseases'/syn
 OR 'respiratory tract diseases'/syn OR 'pathological conditions, signs and symptoms'/syn
 OR 'otorhinolaryngologic diseases'/syn OR 'occupational diseases'/syn OR 'nutritional and
 metabolic diseases'/syn OR 'nervous system diseases'/syn OR 'neoplasms'/syn OR 'musculoskeletal
 disease'/syn OR 'infection'/syn OR 'immune system diseases'/syn OR 'hemic and lymphatic
 diseases'/syn OR 'eye diseases'/syn OR 'endocrine disease'/syn OR 'environmental disease'/syn
 OR 'digestive system diseases'/syn OR 'congenital, hereditary, and neonatal diseases and
 abnormalities'/syn OR 'chemically induced disorder'/syn OR 'cardiovascular diseases'/syn) AND
 [embase]/lim

Date of search: August 18, 2023

Records: 4,020

EconLit

((('wildfires' or 'fire' or 'deforestation') and (((((((((((('tropical climate' or 'climate tropical' or
 'climates tropical' or 'tropical climates' or 'rainforest' or 'rainforests' or 'rain forest' or 'forest rain' or
 'rain
 forests' or 'tropical rainforest' or 'rainforest tropical' or 'rainforests tropical' or 'tropical rainforests' or
 'Amazon' or 'Brazil' or 'Argentina' or 'Peru' or 'Ecuador' or 'Bolivia' or 'Colombia' or 'Venezuela' or
 'Guyana' or
 'Suriname' or 'French Guiana' or 'Paraguay' or 'Panama' or 'El Salvador' or 'Belize' or 'Costa Rica' or
 'El Salvador' or
 'Guatemala' or 'Honduras' or 'Nicaragua' or 'Panama' or 'Anguilla' or 'Antigua) and Barbuda') or
 'Aruba' or 'Bahamas' or
 'Barbados' or 'British Virgin Islands' or 'Cayman Islands' or 'Cuba' or 'Dominica' or 'Dominican
 Republic' or 'Grenada'
 or 'Guadeloupe' or 'Haiti' or 'Jamaica' or 'Martinique' or 'Montserrat' or 'Netherlands Antilles' or
 'Puerto Rico' or
 'Saint Barthelemy' or 'Saint Kits) and Nevis') or 'Saint Lucia' or 'Saint Martin' or 'Saint Vincent) and
 the

1
2
3 Grenadines') or 'Trinidad) and Tobago') or 'United States Virgin Islands' or 'Mexico' or 'Hawaii' or
4 'Cape Verde' or
5 'Sao Tome) and Principe') or 'Gambia' or 'Senegal' or 'Guinea-Bissau' or 'Guinea' or 'Sierra Leone'
6 or 'Liberia' or
7 'Ivory Coast' or 'Ghana' or 'Togo' or 'Benin' or 'Nigeria' or 'Cameroon' or 'Central African Republic'
8 or 'South Sudan'
9 or 'Ethiopia' or 'Equatorial Guinea' or 'Gabon' or 'Congo' or 'Democratic Republic of the Congo' or
10 'Uganda' or 'Rwanda'
11 or 'Burundi' or 'Kenya' or 'Somalia' or 'Tanzania' or 'Zambia' or 'Mozambique' or 'Madagascar' or
12 'Seychelles' or
13 'Mauritius' or 'Comoros' or 'Botswana' or 'Malawi' or 'Brunei' or 'Burma' or 'Myanmar' or
14 'Cambodia' or 'East Timor' or
15 'Indonesia' or 'Laos' or 'Malaysia' or 'Philippines' or 'Singapore' or 'Thailand' or 'Vietnam' or 'India'
16 or 'Papua New
17 Guinea' or 'Australia' or 'Solomon Islands' or 'Vanuatu' or 'New Caledonia') and (((((((((((('patient
18 care' or 'vital
19 statistics' or 'wounds) and injuries') or 'urogenital tract disease' or 'stomatognathic diseases' or 'skin'
20 and
21 connective tissue diseases') or 'respiratory tract diseases' or 'pathological conditions, signs) and
22 symptoms') or
23 'otorhinolaryngologic diseases' or 'occupational diseases' or 'nutritional) and metabolic diseases') or
24 'nervous system
25 diseases' or 'neoplasms' or 'musculoskeletal disease' or 'infection' or 'immune system diseases' or
26 'hemic) and
27 lymphatic diseases') or 'eye diseases' or 'endocrine disease' or 'environmental disease' or 'digestive
28 system diseases'
29 or 'congenital, hereditary,) and neonatal diseases and abnormalities') or 'chemically induced
30 disorder' or
31 'cardiovascular diseases')).mp. [mp=tx, bt, ti, ab, ct, hw, id]

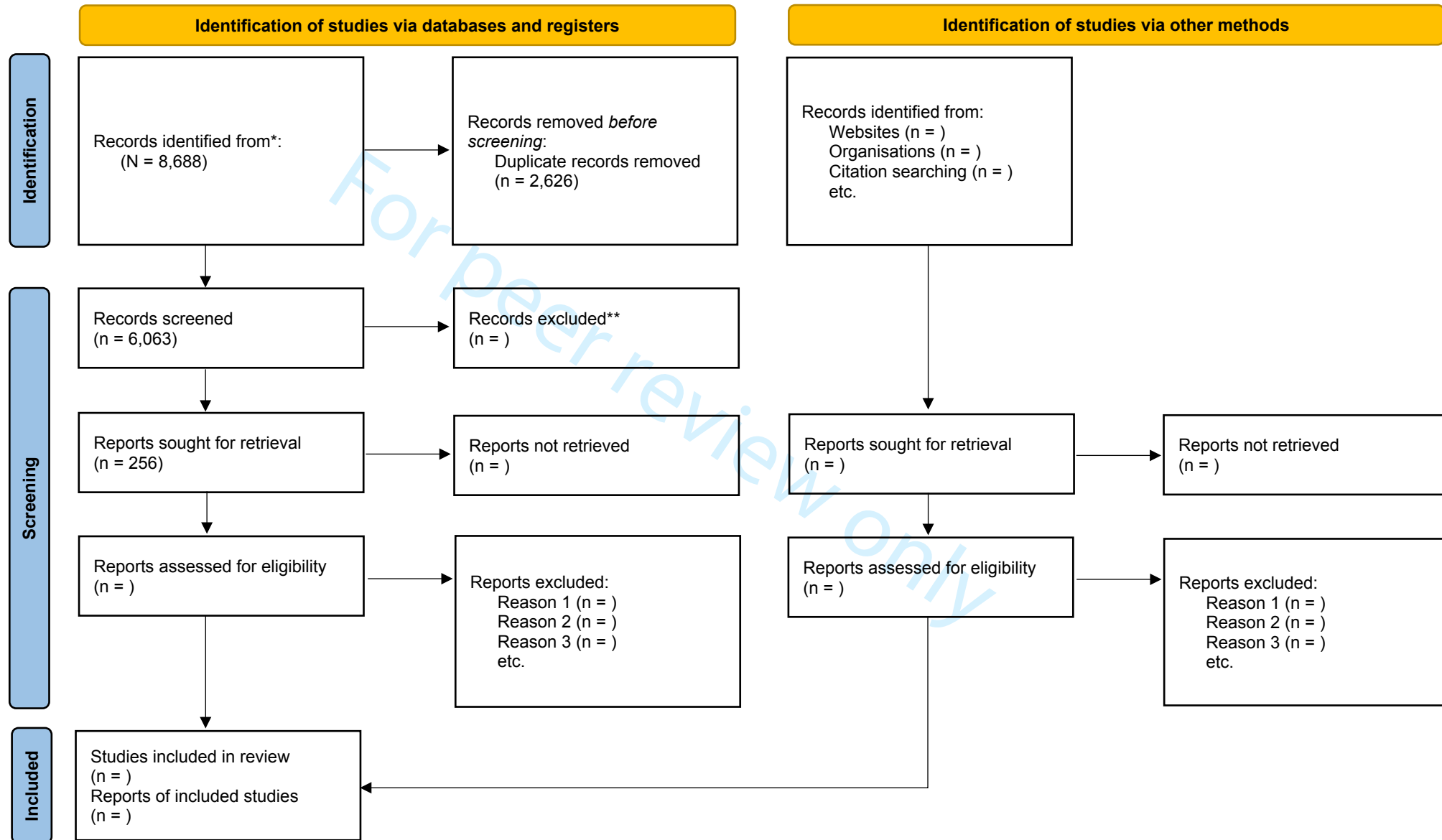
32
33
34
35
36
37
38
39 Date of search: August 18, 2023

40
41 Records: 464
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60**Appendix II - Data extraction form**

General information	
Reviewer who performed the data extraction:	
Date of the data extraction performed:	
Paper database:	
Study identification	
Publication full title:	
DOI number:	
First author name:	
Year of publication:	
Journal of publication:	
Aim of study:	
Exposure and data source	
Area (city, region, country):	
Exposure:	
Exposure temporal level:	
Exposure temporal duration:	
Origin of the exposure data source:	
Origin of the outcome data source:	
Method	
The statistical model applied:	
Study design and findings	
Study population:	
Health outcome:	
Type of disease:	
Study findings as reported by the authors:	
Report the following list: 1. measure of association + standard errors for every different regression specification 2. Subgroups estimates 3. Confounders used 4. Identification strategy if applicable	
Conclusions	
Study limitations identified by the team:	

Appendix III - Ongoing work



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

BMJ Open

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2023-082381.R1
Article Type:	Protocol
Date Submitted by the Author:	20-Mar-2024
Complete List of Authors:	Casais, Gustavo; Fiocruz Brasilia, Center of Data and Knowledge Integration for Health Guimarães, Nathalia ; Federal University of Minas Gerais, Department of Nutrition Cortes, Taísa ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Center of Data and Knowledge Integration for Health Pescarini , Julia ; London School of Hygiene & Tropical Medicine; Center of Data and Knowledge Integration for Health (CIDACS) Rebouças de Magalhães, Poliana; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Wells, Valerie; University of Glasgow de Sousa Filho, José Firmino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Delgado Neves, Danielson; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Shimonovich , Michal ; University of Glasgow Olsen, Jonathan; University of Glasgow de Carvalho Neto, Edgar Marcelino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Cooper, Philip; Universidad Internacional del Ecuador; St George's, University of London Katikireddi, Srinivasa; University of Glasgow Emanuel, Lucas; Federal University of Bahia; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Andrade , Roberto F. S. ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia Ferreira dos Santos, Gervasio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia Barreto, Mauricio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia
Primary Subject Heading:	Public health
Secondary Subject Heading:	Epidemiology, Global health, Health policy, Health economics
Keywords:	EPIDEMIOLOGY, PUBLIC HEALTH, STATISTICS & RESEARCH METHODS, TROPICAL MEDICINE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



1
2
3 Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol
4

5 **Authors**

6
7 Gustavo Casais*, PhD, Center of Data and Knowledge Integration for Health (CIDACS) -
8 Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy,
9 Salvador - BA, Brazil, 41745-715, gustavo.casais@hotmail.com, +55 (71) 99127 3345.
10
11

12 Nathalia Sernizon Guimarães, PhD, Professor at Departament of Nutrition, Federal University of
13 Minas Gerais, Belo Horizonte, Minas Gerais, Brazil zip code 30130100.
14

15 Taísa Rodrigues Cortes, PhD, Center of Data and Knowledge Integration for Health (CIDACS) -
16 Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy,
17 Salvador - BA, Brazil, 41745-715, taisacortes@gmail.com, +55 (71) 99127 3345.
18
19

20 Julia Pescarini, PhD, London School of Hygiene and Tropical Medicine, Center of Data and
21 Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Keppel Street, London, WC1E 7HT,
22 United Kingdom, julia.pescarini1@lshtm.ac.uk, +44 (0)20 7636 8636.
23
24

25 Poliana Rebouças de Magalhães, PhD, Center of Data and Knowledge Integration for Health
26 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala
27 315 - Trobogy, Salvador - BA, Brazil, 41745-715, poliana.reboucas@fiocruz.br, +55 (71) 99127
28 3345.
29
30

31 Valerie Wells, Ms, MRC/CSO Social and Public Health Sciences Unit, University of Glasgow. 90
32 Byres Road, Glasgow, G12 8TB, United Kingdom, Valerie.Wells@glasgow.ac.uk, +44 0141 330
33 4042.
34
35

36 José Firmino de Sousa Filho, PhD, Center of Data and Knowledge Integration for Health (CIDACS)
37 - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 -
38 Trobogy, Salvador - BA, Brazil, 41745-715, jose.ffilho@fiocruz.br, +55 (71) 99127 3345.
39
40

41 Danielson Jorge Delgado Neves¹, PhD, Center of Data and Knowledge Integration for Health
42 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala
43 315 - Trobogy, Salvador - BA, Brazil, 41745-715, danielson.neves@fiocruz.br, +55 (71) 99127
44 3345.
45
46

47 Michal Shimonovich, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow,
48 Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
49 Michal.Shimonovich@glasgow.ac.uk, +44 0141 330 4042.
50
51

52 Jonathan R Olsen, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow,
53 Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
54 Jonathan.Olsen@glasgow.ac.uk, +44 0141 330 4042.
55
56

57 Edgar Marcelino de Carvalho Neto, PhD, Center of Data and Knowledge Integration for Health
58 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
59 - Trobogy, Salvador - BA, Brazil, 41745-715, edgar.neto@fiocruz.br, +55 (71) 99127 3345.
60

1
2
3 Philip J. Cooper, PhD, St George's, University of London; School of Medicine, Universidad
4 Internacional del Ecuador, Av. Simón Bolívar y Av. Jorge Fernández, Quito, Ecuador,
5 pcooper@sgul.ac.uk, +593 2 2985 600.
6

7
8 Srinivasa Vittal Katikireddi, PhD, MRC/CSO Social & Public Health Sciences Unit, University of
9 Glasgow, Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
10 Vittal.Katikireddi@glasgow.ac.uk, +44 0141 330 4042.
11

12
13 Lucas Emanuel, Federal University of Bahia; Center of Data and Knowledge Integration for Health
14 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
15 - Trobogy, Salvador - BA, Brazil, 41745-715, lucasemanuel@ufba.br, +55 (71) 99127 3345.
16

17
18 Dr. Roberto Fernandes Silva Andrade, Federal University of Bahia; Center of Data Knowledge
19 Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R.
20 Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, randrade@ufba.br, +55 (71)
21 99127 3345.
22

23
24 Dr. Gervasio Ferreira dos Santos, Federal University of Bahia; Center of Data Knowledge
25 Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R.
26 Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, gervasios@ufba.br, +55 (71)
27 99127 3345.
28

29
30 Mauricio L. Barreto, Federal University of Bahia; Center of Data Knowledge Integration for Health
31 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
32 - Trobogy, Salvador - BA, Brazil, 41745-715, mauricio@ufba.br, +55 (71) 99127 3345.
33

34 *Corresponding author, Email: gustavo.casais@hotmail.com.
35
36
37

38 **Word count:** 2,501
39
40
41

42
43 **Keywords:** Wildfire; Deforestation; Tropical Climate; Rainforest; Health
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Authors

Gustavo Casais¹, Nathalia Sernizon Guimarães², Taísa Rodrigues Cortes¹, Julia Pescarini^{1,3}, Poliana Rebouças de Magalhães¹, Valerie Wells⁴, José Firmino de Sousa Filho¹, Danielson Jorge Delgado Neves¹, Michal Shimonovich⁴, Jonathan R Olsen⁴, Edgar Marcelino de Carvalho Neto¹, Philip J. Cooper^{5,6}, Srinivasa Vittal Katikireddi⁴, Lucas Emanuel^{1,7}, Roberto F. S. Andrade^{1,7}, Gervasio Ferreira dos Santos^{1,7}, Mauricio L. Barreto^{1,7}, on behalf of the Unit on the Social and Environmental Determinants of Health Inequalities (SEDHI)

¹Center for Data and Knowledge Integration for Healthcare (CIDACS)

²Federal University of Minas Gerais

³London School of Hygiene and Tropical Medicine

⁴MRC/CSO Social and Public Health Sciences Unit, University of Glasgow

⁵St George's, University of London

⁶School of Medicine, Universidad Internacional del Ecuador, Quito, Ecuador

⁷Federal University of Bahia

Abstract

Introduction: Wildfires and deforestation potentially have direct effects on multiple health outcomes as well as indirect consequences for climate change. Tropical rainforest areas are characterized by high rainfall, humidity, and temperature, and they are predominantly found in low- and middle-income countries. This study aims to synthesize the methods, data, and health outcomes reported in scientific papers on wildfires and deforestation in these locations.

Methods and analysis: We will carry out a scoping review according to the Joanna Briggs Institute's manual for scoping reviews and the framework proposed by Arksey and O'Malley, and Levac et al. The search for articles was performed on August 18, 2023, in 16 electronic databases using MeSH Terms and adaptations for each database from database inception. The search for local studies will be complemented by the manual search in the list of references of the studies selected to compose this review. We screened studies written in English, French, Portuguese and Spanish. We included quantitative studies assessing any human disease outcome, hospitalization, and vital statistics in regions of tropical rainforest. We exclude qualitative studies and quantitative studies whose outcomes do not cover those of interest. The text screening was done by two independent reviewers. Subsequently, we will tabulate the data by the origin of the data source used, the methods, and the main findings on health impacts the extracted data. The results will provide descriptive statistics, along with visual representations in diagrams and tables, complemented by narrative summaries as detailed in the JBI guidelines.

Ethics and dissemination: The study does not require an ethical review as it is meta-research and utilizes published, deidentified secondary data sources. The submission of results for publication in a peer-reviewed journal and presentation at scientific and policymakers' conferences is expected.

Link to the protocol record in the Open Science Framework (OSF): <https://osf.io/pnqc7/>.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Strengths and limitations of this study:

- To the best of our knowledge, this scoping review will be the first to assess the health impacts of wildfires and deforestation across a broad range of tropical rainforest regions.
- The search will include several different databases, such as those from Latin America and Africa.
- It will include manuscripts in English, French, Portuguese and Spanish from database inception.
- The ultimate selection of papers will be heavily influenced by the resolution of the shapefile used to delineate the tropical rainforest biome. This sensitivity to the map's resolution may result in the improper exclusion or inclusion of studies.
- A major limitation is the absence of critical appraisal. This means studies with potentially low relevance, reliability, validity and applicability might be included.

Introduction

One of the significant contributors to climate change is improper land use resulting from agriculture, logging, and mining, which potentially leads to wildfires and deforestation [1] [2]. Currently, wildfires and deforestation have been increasingly drawing attention for their potential consequences, not only for climate change but also for the health outcomes of both local and global populations. Governments across the world have been expressing this concern by adopting climate mitigation policies to contain environmental degradation. Understanding the health effects of wildfires and deforestation on populations in low- and middle-income countries is critical for designing evidence-based and successful mitigation plans and policies [3].

Tropical rainforests are home to not only a vast array of animal and plant species but also play a vital role in sustaining human well-being [4]. These ecosystems provide essential resources such as cocoa, coffee beans, bananas, vanilla, and cinnamon, which are used in everyday products. Furthermore, they are a rich source of chemical compounds instrumental in the development of medicines. These biomes are the ancestral homes of Indigenous and traditional peoples who not only live within these ecosystems but also actively preserve them along with their cultures. Rainforests are crucial in stabilizing the climate and maintaining the water cycle, contributing to the overall balance of global weather patterns [5] [6]. Without these rainforests, the dynamics and control of zoonotic diseases and vector-borne infections would be significantly disrupted [7]. The loss of rainforests would have severe consequences for the economy, global biodiversity and ecosystem services [8].

While wildfires and deforestation often stem from common causes, they are also influenced by distinct drivers. Human activities, such as land clearing for agriculture, logging and development, play a significant role in both phenomena [9] [10]. In low- and middle-income countries, where

1
2
3 agriculture constitutes a substantial portion of the economy, fluctuations in global demand can drive
4 the expansion of agricultural areas, contributing to deforestation and increasing wildfire susceptibility
5 [11] [12]. Additionally, inadequate policies, weak enforcement of regulations, and governance issues
6 exacerbate both deforestation and wildfire risks by permitting unsustainable land use practices and
7 inadequately allocating resources for fire prevention and suppression efforts [13]. Moreover, the
8 escalating frequency and intensity of extreme events, such as droughts, extreme temperatures, and
9 storms, linked to climate change, have been amplifying wildfire occurrences globally over the past
10 few decades [14]. Also, due to the usually high humidity in tropical rainforests, wildfires very rarely
11 occur by natural causes, so that both deforestations and wildfires are much closely related to human
12 activity [15] [16].

20
21 Wildfires have the potential to cause bodily injuries, impact housing infrastructure, and release toxic
22 gases and particulate matter into the air [17]. Exposure to smoke from wildfires can cause acute
23 respiratory illness and exacerbate existing disease, especially among children and elderly [18].
24 Additionally, the long-term effects of accumulated exposures to wildfires may be multiple including
25 premature death, cardiovascular disease, cancer, respiratory illness, mental health, and other chronic
26 conditions [19].

31
32 Deforestation has different causal mechanisms for public health outcomes. Deforestation can alter
33 environmental niches, changing habitats for parasites and insects, including disease-carrying
34 mosquitoes, which may increase the human risk of contracting vector-borne diseases such as malaria
35 and dengue [20] [7] [21]. Additionally, in the long run, deforestation can reduce the level of water in
36 the atmosphere, lead to soil erosion, desertification, flooding, and increase the local temperature [22]
37 [23] [24].

42
43 We have noticed that previous reviews on the health impacts of wildfires and deforestation have some
44 limitations. They often focus on specific population groups or a limited number of health outcomes,
45 and they might not search comprehensively across databases or years [19] [25] [26] [27] [28] [29]
46 [30]. Notably, no review has specifically addressed the health effects of wildfires in tropical rainforest
47 areas, which are mainly found in low- and middle-income countries. These regions are home to many
48 Indigenous and marginalized groups who are particularly vulnerable due to limited resources, higher
49 risk of health problems, and limited access to healthcare [31] [32] [33]. Tropical climate,
50 characterized by elevated temperatures, intense rainfall, and high humidity, can further impact health
51 conditions [34] [35]. Moreover, the most recent reviews on the health effects of deforestation are at
52 least four years old, indicating the need for an updated assessment [29] [30].

1
2
3 Conducting an updated review is crucial, especially considering the recent escalation of wildfires and
4 deforestation. This issue is particularly significant in Brazil, where fire outbreaks have been steadily
5 increasing, even though they have not reached the peak observed in 2004 [36] [37]. Such a review
6 will help identify and understand the specific ways in which wildfires and deforestation affect health
7 outcomes, hospitalizations, and vital statistics, the quantitative methods employed, and the data
8 sources used for these analyses.
9

10
11
12
13
14 Other critical areas of investigation include geographical mapping and the analytical methods
15 employed for analysis. There is a wide variety of information sources that provide mapping for the
16 occurrence of wildfires and deforestation, differentiating based on geographical scale and the time
17 period of change. Disparities in high-quality environmental data around the world highlight how some
18 places possess better information than others, which can be considered part of the phenomenon known
19 as the 'digital divide' [38]. Additionally, various analytical methods exist to study how wildfires and
20 deforestation impact people's health. The outcomes of such analyses heavily rely on the modelling
21 techniques employed, underscoring the crucial need to understand and utilize an array of available
22 methods. This understanding is pivotal in creating thorough and accurate insights to inform the
23 creation of future high-quality research and understand what key research gaps exist.
24
25
26
27
28
29
30

31
32 This scoping review aims to comprehensively synthesize the intricate relationships between wildfires,
33 deforestation, and their impact on health outcomes in tropical rainforest regions. Our more specific
34 objectives will be to characterize: (i) the health outcomes affected by wildfires and deforestation in
35 the tropical areas; (ii) the methods used to identify and measure their impact; (iii) the data sources
36 related to the wildfires and deforestation; (iv) and the policy recommendations from the studies. This
37 will equip policymakers and researchers with essential information about this research area,
38 highlighting knowledge gaps and paving the way for future research and development.
39
40
41
42
43

44 **Methods and Analysis**

45
46 This scoping review protocol follows the guidelines of the Joanna Briggs Institute. The protocol is
47 based on the framework suggested by Peters, et al [39], Arksey and O'Malley [40], and enhanced by
48 Levac et al. [41]. It was written according to the checklist provided by the Preferred Reporting Items
49 for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) [42].
50
51
52

53
54 The scoping review will follow the steps below: (1) identifying the research question; (2) identifying
55 relevant studies; (3) study selection; (4) charting the data; (5) collating, summarising, and reporting
56 the results. The scoping review protocol was previously registered with the Open Science Framework
57 to identify ongoing reviews and avoid unnecessary duplication of research [43].
58
59
60

Step 1: identifying the research question

To enhance the organization of our research question and the criteria for inclusion and exclusion we adhered to the mnemonic PCC (Population, Concept, Context), which is described with the research question in the Table 1.

According to the Oxford Dictionary, wildfire means: “a very big fire that spreads quickly and burns natural areas like woods, forests and grassland”. We adopt this definition; therefore, we consider any large fire that occur in different types of vegetation which can affect urban, peri urban or rural area. The deforestation is usually associated with human activity pursuing an economic purpose (e.g., farming, timber logging, expansion and infrastructure, and mining). The tropical rainforest is a warm and humid biome characterized by year-round rainfall. Renowned for its thick layers of vegetation, it consists of three distinct canopy levels located between the Tropic of Cancer and the Tropic of Capricorn [44]. We will consider the deforestation of the tropical forests located in urban, peri-urban, or rural areas.

Table 1 – Scoping review questions and PCC mnemonic

Question	Population (P)	Concept (C)	Context (C)
1. What are the impacts of the wildfire and deforestation on the health outcomes, hospitalization, and vital statistics in the tropical rainforest areas? 2. What are the methods and data sources used for this assessment?	All individuals	Health impacts of wildfires and deforestation	All the areas located in the tropical rainforests

Step 2: Identifying relevant studies

Data sources

The search for scientific articles were conducted on August 18, 2023, across several databases: (1) Nursing Database (BDENF – Enfermagem), (2) National Bibliography in Argentine Health Sciences (BINACIS), (3) Coleciona SUS, (4) Desastres, (5) EconLit, (6) Embase, (7) Latin American and Caribbean Literature in Health Sciences (Lilacs), (8) Literature in Health Sciences from Caribbean countries (MedCaribe), (9) MEDLINE, (10) MEDLINE/PubMed, (11) Virtual Health Library of the Ministry of Health of Peru (MINSAPERU), (12) Literature from the Pan American Health Organization Headquarters Library (PAHO-IRIS), (13) Health Documentation Network in Mozambique (RDSM), (14) Recursos Multimídia, (15) Scopus, (16) Western Pacific Region Index

1
2
3 Medicus (WPRIM). Access to Scopus database will be via the Capes Platform, while the databases
4 corresponding to the previous identification number: (1), (2), (3), (4), (7), (8), (9), (11), (12), (13),
5 (14), and (16) are available via the Virtual Health Library platform (Biblioteca Virtual da Saúde in
6 Portuguese). To strengthen this review, we will also perform a manual search of the references in the
7 included studies.
8
9

10
11
12 Table 2 – Search terms by topics
13

- | | |
|--|--|
| 14
15
16
17
18
19
20
21
22
23
24 | 1. "Wildfires"[MeSH Terms] OR "Deforestation"[All Fields]
2. 'All categories of human diseases' OR "Vital Statistics"[MeSH Terms] OR "Patient
Care"[MeSH Terms]
3. "Rainforest"[MeSH Terms] OR 'All country names with tropical rainforest'
4. (1) AND (2) AND (3) |
|--|--|

25 *Note:* The complete list of terms used can be found in the Appendix I.
26

27 **Search strategy**

28
29 The search strategy will be defined for each database, following the inclusion and exclusion criteria.
30 The search terms were used according to the Medical Subject Headings (MeSH) and the respective
31 Entry Terms. The remaining databases were adapted by Emtree and DeCS. The expression terms
32 were categorized into three broad aspects according to Table 2: (i) the exposure, including the
33 wildfires and the deforestation terms, (ii) a comprehensive list of diseases, hospitalization, vital
34 statistics terms, and (iii) tropical rainforest areas, including a list of countries with tropical rainforests.
35 The countries that harbour tropical rainforests were selected according to two maps [44] [45]. The
36 expression terms will be combined with the Boolean operators 'AND' and 'OR' in the refinement.
37 The complete search terms in every database are in the Appendix I.
38
39
40
41
42
43
44

45 **Step 3: Study selection**

46
47 To ensure consistent evaluation of the literature, a two-stage screening process was employed by two
48 reviewers. This process involved initial screening of titles and abstracts, followed by a more in-depth
49 review of full texts. Regarding any disagreements among the authors, they were resolved either
50 through consensus or by the decision of one or two additional authors.
51
52
53

54
55 The process will be registered in a flowchart of the review process according to the PRISMA-ScR
56 [42]. All studies were exported to the Rayyan Qatar Computing Research Institute (Rayyan®), and
57 then deduplicated by one reviewer. The partial results of the text screening are available in Appendix
58 II.
59
60

Inclusion criteria

To determine and choose pertinent publications concerning the topic, the subsequent inclusion criteria will be applied: (i) quantitative studies from database inception, such as correlational, ecological, cohort, experimental, and cross-sectional studies, (ii) any individual or population groups exposed to wildfires, wildfire smoke or deforestation regardless of the exposure duration, (iii) any disease, hospitalization, or vital statistics, considered here as birth, death rate, and life expectancy, (iv) self-reported health condition. Only studies written in English, French, Portuguese and Spanish will be considered for inclusion.

Exclusion criteria

Studies will be excluded according to the following criteria: (i) theoretical studies; literature review (e.g., scoping review and systematic review), letter and editorials; (ii) qualitative studies (interviews, case studies etc.); (iii) environmental change only (e.g., extinction of wildlife, mosquitoes' habitats); (iv) air pollution only (e.g., air pollution from factories, mines, vehicles, without any relation to wildfires); (v) indoor fire; (vi) we will exclude studies solely focusing on health inequalities according to PROGRESS Plus; and (vii) studies in which the exposed population is entirely outside the tropical area, as delimited by the Tropic of Cancer and the Tropic of Capricorn.

The expansive nature of this review, encompassing diverse outcomes, countries, and databases, necessitates a streamlined approach. To ensure a comprehensive yet efficient exploration of the literature within the constraints of time and resources, we have opted to focus on quantitative studies. Quantitative studies often provide a more readily comparable data set, facilitating the data extraction and the synthesis of the existing research landscape in this complex field. Additionally, the exclusion of the grey literature also relies on the constraints of time and resources.

Step 4: Charting the data

The data of interest will be extracted with the data extraction tables and by filling out the data extraction form (in the Appendix III) in Microsoft Excel. During the pilot stage, two reviewers will independently conduct the task. Afterward, one reviewer will proceed, while the work will be reviewed by a second reviewer for quality assurance. The results will be categorised according to the review questions and charted in an iterative process, allowing the reviewers to continuously update these charts when additional unforeseen data are encountered. The data extraction table will be developed and tested, containing variables on the study reference (year of publication, author, journal, full title), intervention type, exposure, and data source (e.g., country, origin of the exposure data source), methods and findings (study design and modelling, health outcome, control, and treated

1
2
3 group, point estimate, and causal identification strategy, lag between exposure and the health
4 consequences and limitations of the study.
5

6 7 ***Step 5: Collating, summarising and reporting the results*** 8

9 All gathered data will be displayed in either tabular or diagrammatic formats to visually summarise
10 the outcomes of the studies. Initially, a table containing comprehensive information about the selected
11 papers will be provided, such as the number of studies, study design, exposure assessment (temporal
12 and spatial scale, and data sources), statistical methods (statistical models and identification
13 strategies), characteristics of study populations, and the countries where the studies were conducted.
14 The data will be categorized separately for wildfires and deforestation. Different tables will be used
15 to describe the detailed methods and data sources, followed by tables focused on findings and their
16 subgroups. Finally, we will consider the overall implications of the results to ensure that the scoping
17 review will provide relevant answers to the two main research questions previously posed.
18
19
20
21
22
23
24

25 **Discussion** 26

27 The resulting scoping review will offer novel insights by synthesizing a wide array of health outcomes
28 associated with wildfires and deforestation. It will elucidate the methodologies and data sources
29 utilized in existing literature to assess the impact of these phenomena on public health. Moreover, the
30 review will provide policymakers with actionable recommendations derived from studies addressing
31 the health effects of wildfires and deforestation, including considerations of magnitude and temporal
32 lag between exposure and outcome.
33
34
35
36
37

38 While the scoping review will offer valuable insights, it is important to acknowledge that it may
39 encounter certain limitations. The level of detail in the map defining the tropical rainforest biome will
40 significantly influence which studies are included in the final selection. This can lead to the
41 unintended exclusion or inclusion of relevant research. The exclusion of the grey literature is
42 contingent upon limitations in both time and resources available for the study. It often contains
43 valuable insights and data that may not be found in traditional academic sources, potentially resulting
44 in an incomplete understanding of the topic under investigation. Additionally, the scoping review will
45 not conduct critical appraisal. This means they can't assess the quality of included studies, potentially
46 incorporating biased or flawed research. Consequently, drawing definitive conclusions about the
47 effectiveness of interventions or pinpointing areas needing strong future studies becomes difficult.
48 While valuable for initial exploration, these limitations necessitate cautious interpretation of the
49 findings.
50
51
52
53
54
55
56
57
58

59 **Patient and public involvement** 60

1
2
3 There was no patient or public involvement in the design of this scoping review protocol.
4

5 **Ethics and dissemination:**

6
7 The study is exempt from ethics review as it is meta-research and utilizes published, deidentified
8 secondary data sources. The submission of results for publication in a peer-reviewed journal and
9 presentation at scientific and policymakers' conferences is expected.
10

11 **Contributors**

12
13 G.C. is the primary and corresponding author and was responsible for the first and all subsequent
14 drafts of this scoping review protocol. Study conception: J.F.S.F, P.J.C., J.O., S.V.K., L.E., R.F.S.A.,
15 G.F.S., M.L.B. Designed the search strategy: J.P., P.B.R., V.W., N.S.G., M.S. Data search: G.C., J.P.,
16 N.S.G., M.S., E.M.C.N. Text screening: G.C., T.C. Geographical map: G.C., D.J.D.N. All authors
17 participated in discussions on the study design and critically revised drafts for improvements.
18
19

20 **Competing Interests**

21 None.
22

23 **Funding**

24
25 This research was funded by the NIHR (NIHR134801) using UK aid from the UK Government to
26 support global health research and by the Wellcome Trust grant (226306/Z/22/Z) awarded to the
27 CIDACS Climate and Environmental Platform (CIDACS-Clima). The views expressed in this
28 publication are those of the author(s) and not necessarily those of the NIHR or the UK government.
29 JO, MS, VW and SVK are employed by the MRC/CSO Social and Public Health Sciences Unit,
30 University of Glasgow, and supported by the Medical Research Council [grant numbers
31 MC_UU_00022/2; MC_UU_00022/4; and Chief Scientist Office [grant numbers SPHSU17;
32 SPHSU19]. The researchers were independent of the funders; the funders had no role in the study
33 design, data collection, analysis and interpretation of data, the decision to publish, or the preparation
34 of the manuscript.
35
36
37
38

39 **References**

- 40
41
42
43 [1] P. W. Ellis, T. Gopalakrishna, R. C. Goodman, F. E. Putz, A. Roopsind, P. M. Umunay, J.
44 Zalman, E. A. Ellis, M. Karen, T. G. Gregoire and B. W. Griscom, "Reduced-impact logging
45 for climate change mitigation (RIL-C) can halve selective logging emissions from tropical
46 forests," *Forest Ecology and Management*, vol. 438, 2019.
47
48 [2] L. Ying, H. Cheng, Z. Shen, P. Guan, C. Luo and X. Peng, "Relative humidity and agricultural
49 activities dominate wildfire ignitions in Yunnan, Southwest China: Patterns, thresholds, and
50 implications," *Agricultural and Forest Meteorology*, vol. 307, 2021.
51
52 [3] S. M. Hartinger, M. Yglesias-González, L. Blanco-Villafuerte, Y. K. Palmeiro-Silva, A. G.
53 Lescano, A. Stewart-Ibarra, ... and M. Romanello, "The 2022 South America report of The
54 Lancet Countdown on health and climate change: trust the science. Now that we know, we
55 must act.," *The Lancet Regional Health—Americas*, vol. 20, 2023.
56
57
58
59
60

- 1
2
3 [4] C. Y. Shimamoto, A. A. Padial, C. M. Rosa and M. C. M. Marques, "Restoration of ecosystem
4 services in tropical forests: A global meta-analysis," *Plos One*, vol. 13(12), 2018.
5
6 [5] D. Ellison, M. N. Futter and K. Bishop, "On the forest cover–water yield debate: from
7 demand- to supply-sind thinking," *Global Change Biology*, vol. 18, 2012.
8
9 [6] F. B. F. Silvio, K. M. P. M. B. Ferraz, C. C. Cassiano, P. H. S. Brancalion, D. T. A. d. Luz, T.
10 N. Azevedo, L. R. Tambosi and J. P. Metzger, "How good are tropical forest patches for
11 ecosystem services?," *Landscape Ecology*, vol. 29, 2014.
12
13 [7] J. H. Ellwanger, B. Kulmann-Leal, V. L. Kaminski, J. Valverde-Villegas, A. B. G. VEIGA, F.
14 R. Spilki, ... and J. A. B. Chies, "Beyond diversity loss and climate change: Impacts of
15 Amazon deforestation on infectious diseases and public health," *Anais da Academia Brasileira*
16 *de Ciências*, vol. 92.
17
18 [8] C. Vera, J. Baez, M. Douglas, C. B. Emmanuel, J. Marengo, J. Meitin, M. Nicolini, J. Noguez-
19 Paegle, J. Paegle, O. Penalba, P. Salio, C. Saulo, M. A. Silva Dias, P. Silva Dias and E. Zipser,
20 "The South American Low-Level Jet Experiment," *Bulletin of the American Meteorological*
21 *Society*, vol. 87, 2006.
22
23 [9] P. M. Lemieux, C. C. Lutes and D. A. Santoianni, "Emissions of organic air toxics from open
24 burning: a comprehensive review," *Progress in energy and combustion science*, vol. 30, no. 1,
25 2004.
26
27 [10] R. Xu, P. Yu, M. J. Abramson, F. H. Johnston, J. M. Samet, M. L. Bell, ... and Y. Guo,
28 "Wildfires, global climate change, and human health," *New England Journal of Medicine*, vol.
29 383, no. 22, pp. 2173-2181, 2020.
30
31 [11] D. Da Mata and M. Dotta, "Commodity booms and the environment," SSRN 3900793, 2021.
32
33 [12] P. Dasgupta, *The economics of biodiversity: the Dasgupta review*, Hm Treasury, 2021.
34
35 [13] J. Assunção, C. Gandour and R. Rocha, "Deforestation slowdown in the Brazilian Amazon:
36 prices or policies?," *Environment and Development Economics*, vol. 20, pp. 697-722, 2015.
37
38 [14] Centre for Research on the Epidemiology of Disasters, United Nations Office for Disaster Risk
39 Reduction, "The human cost of disasters: an overview of the last 20 years (2000-2019)," 2020.
40
41 [15] M. Adámek, Z. Jankovská, V. Hadincová, E. Kula and J. Wild , "Drivers of forest fire
42 occurrence in the cultural landscape of Central Europe," *Landscape Ecology*, vol. 33, p. 2031–
43 2045, 2018.
44
45 [16] K. Thonicke, S. Venevsky, S. Sitch and W. Cramer, "The Role of Fire Disturbance for Global
46 Vegetation Dynamics: Coupling Fire into a," *Global Ecology and Biogeography*, vol. 10, pp.
47 661-677, 2001.
48
49 [17] C. Black and et al, "Wildfire smoke exposure and human health: Significant gaps in research
50 for a growing public health issue," *Environmental toxicology and pharmacology*, vol. 55, pp.
51 186-195, 2017.
52
53
54
55
56
57
58
59
60

- 1
2
3 [18] R. Rocha and A. A. Sant'Anna, "Winds of fire and smoke: Air pollution and health in the
4 Brazilian Amazon," *World Development*, vol. 151, p. 105722, 2022.
5
6 [19] E. Grant and J. D. Runkle, "Long-term health effects of wildfire exposure: a scoping review,"
7 *The Journal of Climate Change and Health*, vol. 6, p. 100110, 2022.
8
9 [20] S. C. D. C. Xavier, A. L. R. Roque, V. D. S. Lima, K. J. L. Monteiro, J. C. R. Otaviano, L. F.
10 C. Ferreira da Silva and A. M. Jansen, "Lower richness of small wild mammal species and
11 Chagas disease risk," *PLoS neglected tropical diseases*, vol. 6, no. 5, p. e1647.
12
13 [21] D. Lawrence and K. Vandecar, "Effects of tropical deforestation on climate and agriculture,"
14 *Nature climate change*, vol. 5, no. 1, pp. 27-36, 2015.
15
16 [22] P. Alliance, "Effects of Deforestation," [Online]. Available: [https://pachamama.org/effects-of-](https://pachamama.org/effects-of-deforestation)
17 deforestation. [Accessed 05 Mar 2024].
18
19 [23] B. F. A. d. Oliveira, M. J. Bottino, P. Nobre and C. A. Nobre, "Deforestation and climate
20 change are projected to increase heat stress risk in the Brazilian Amazon,"
21 *COMMUNICATIONS EARTH & ENVIRONMENT*, 2021.
22
23 [24] R. Becerril-Piña and C. A. Mastachi-Loza, "Desertification: Causes and Countermeasures," in
24 *Life on land*, Springer, 2020.
25
26 [25] E. Nanjappan, E. Sullo, S. Shrestha, S. Thomas and E. Nouvet, "Californian Wildfires and
27 Associated Human Health Outcomes: An Epidemiological Scoping Review," *International*
28 *Journal of Trend in Scientific Research and Development*, vol. 5, no. 5, pp. 944-953, 2021.
29
30 [26] P. To, E. Eboime and V. I. Agyapong, "The impact of wildfires on mental health: a scoping
31 review," *Behavioral Sciences*, vol. 11, no. 9, p. 126, 2021.
32
33 [27] C. C. Melton, C. M. Fries, R. M. Smith and L. R. Mason, "Wildfires and Older Adults: A
34 Scoping Review of Impacts, Risks, and Interventions," *International journal of environmental*
35 *research and public health*, vol. 20, no. 13, p. 6252, 2023.
36
37 [28] C. E. Reid, M. Brauer, F. H. Johnston, M. Jerrett, J. R. Balmes and C. T. Elliott, "Critical
38 review of health impacts of wildfire smoke exposure," *Environmental health perspectives*, vol.
39 124, no. 9, pp. 1334-1343, 2016.
40
41 [29] T. M. Davey and L. A. Selvey, "Relationship between Land Use/Land-Use Change and
42 Human Health in Australia: A Scoping Study," *International Journal of Environmental*
43 *Research and Public Health*, vol. 17, 2020.
44
45 [30] M. Mastel, A. Bussalleu, V. A. Paz-Soldán, G. Salmón-Mulanovich, A. Valdés-Velásquez and
46 S. M. Hartinger, "Critical linkages between land use change and human health in the Amazon
47 region: A scoping review," *PloS one*, vol. 13, no. 6, p. e0196414, 2018.
48
49 [31] R. Leichenko and J. A. Silva, "Climate change and poverty: vulnerability, impacts, and
50 alleviation strategies," *WIREs Climate Change*, vol. 5, 2014.
51
52 [32] S. Hallegatte, M. Fay and E. B. Barbier, "Poverty and climate change: introduction,"
53 *Environment and Development Economics*, vol. 23, 2018.
54
55
56
57
58
59
60

- 1
2
3 [33] R. Mendelsohn, A. Dinar and L. Williams, "The distributional impact of climate change on
4 rich and poor countries," *Environment and Development Economics*, vol. 11, pp. 159-178,
5 2006.
6
7 [34] R. Davis, G. R. McGregor and K. B. Enfield, "Humidity: A review and primer on atmospheric
8 moisture and human health," *Environmental research*, vol. 144, pp. 106-116, 2016.
9
10 [35] J. Gao, Y. Sun, Y. Lu and L. Li, "Impact of ambient humidity on child health: a systematic
11 review," *PloS one*, vol. 9, no. 12, p. e112508, 2014.
12
13 [36] M. Osborne, "Wildfires Reached a Five-Year High in the Brazilian Amazon," *Smithsonian*
14 *Magazine*, 9 September 2022. [Online]. Available: [https://www.smithsonianmag.com/smart-](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/)
15 [news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/). [Accessed 31
16 October 2023].
17
18 [37] G. Alecrim, "Número de queimadas na Amazônia em 2022 supera 2021, mas é inferior ao
19 recorde de 2004," *CNN Brasil*, 20 September 2022. [Online]. Available:
20 [https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004)
21 [2021-mas-e-inferior-ao-recorde-de-2004](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004). [Accessed 2023 October 31].
22
23 [38] N. Kshetri, D. C. Rojas Torres, H. Besada and M. A. Moros Ochoa, "Big data as a tool to
24 monitor and deter environmental offenders in the global south: A multiple case study,"
25 *Sustainability*, vol. 12, no. 24, p. 10436, 2020.
26
27 [39] M. D. Peters, C. M. Godfrey, H. Khalil, P. McInerney, D. Parker and C. B. Soares, "Guidance
28 for conducting systematic scoping reviews," *JBI Evidence Implementation*, vol. 13, no. 3, pp.
29 141-146, 2015.
30
31 [40] H. Arksey and L. O'Malley, "Scoping studies: towards a methodological framework,"
32 *International journal of social research methodology*, vol. 8, no. 1, pp. 19-32, 2005.
33
34 [41] D. Levac, H. Colquhoun and K. K. O'Brien, "Scoping studies: advancing the methodology,"
35 *Implementation science*, vol. 5, pp. 1-9, 2010.
36
37 [42] A. C. Tricco, E. Lillie, W. Zarin, K. K. O'Brien, H. Colquhoun, D. Levac, ... and S. E. Straus,
38 "PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation," *Annals*
39 *of internal medicine*, vol. 169, no. 7, pp. 467-473, 2018.
40
41 [43] G. Casais, N. S. Guimarães, T. R. Cortes, J. Pescarini, P. R. d. Magalhães, V. Wells, J. F. d.
42 Sousa Filho, D. J. D. Neves, M. Shimonovich, J. R. Olsen, E. M. d. Carvalho Neto, P. J.
43 Cooper, S. V. Katikireddi, R. Andrade, G. F. d. Santos and M. L. Barreto, "Wildfire,
44 deforestation, and health in tropical rainforest: a scoping review protocol," 2023. [Online].
45 Available: <https://osf.io/pnqc7/>.
46
47 [44] Nasa Earth Observatory, "Rainforest," [Online]. Available:
48 <https://earthobservatory.nasa.gov/biome/biorainforest.php>.
49
50 [45] D. M. Olson, E. Dinerstein, N. D. Wikramanayake, ... and K. Kassem, "Terrestrial ecoregions
51 of the world: A new map of life on Earth," *BioScience*, vol. 51, no. 11, pp. 933-938, 2001.
52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

Appendices

Appendix I – Literature search

MEDLINE/PubMed

("wildfires"[MeSH Terms] OR "wildfires"[Text Word] OR "Wildfire"[All Fields] OR "Wildland Fires"[All Fields] OR "Brush Fires"[All Fields] OR "Brush Fire"[All Fields] OR "Forest Fires"[All Fields] OR "fire forest"[All Fields] OR "fires forest"[All Fields] OR "Forest Fire"[All Fields] OR "Wild Fires"[All Fields] OR "Wild Fire"[All Fields] OR "Fires"[MeSH Terms] OR "Fires"[Text Word] OR "Fire"[All Fields] OR "fire outbreaks"[All Fields] OR "Deforestation"[All Fields] OR "Grassfire"[All Fields] OR "prescribed burn"[All Fields] OR "prescribed fire"[All Fields]) AND ("Tropical Climate"[MeSH Terms] OR "Tropical Climate"[Text Word] OR "climate tropical"[All Fields] OR "climates tropical"[All Fields] OR "Tropical Climates"[All Fields] OR "Rainforest"[MeSH Terms] OR "Rainforest"[Text Word] OR "Rainforests"[All Fields] OR "Rain Forest"[All Fields] OR "forest rain"[All Fields] OR "Rain Forests"[All Fields] OR "Tropical Rainforest"[All Fields] OR "rainforest tropical"[All Fields] OR "rainforests tropical"[All Fields] OR "Tropical Rainforests"[All Fields] OR "Amazon"[All Fields] OR "Brazil"[All Fields] OR "Argentina"[All Fields] OR "Peru"[All Fields] OR "Ecuador"[All Fields] OR "Bolivia"[All Fields] OR "Colombia"[All Fields] OR "Venezuela"[All Fields] OR "Guyana"[All Fields] OR "Suriname"[All Fields] OR "French Guiana"[All Fields] OR "Paraguay"[All Fields] OR "Panama"[All Fields] OR "El Salvador"[All Fields] OR "Belize"[All Fields] OR "Costa Rica"[All Fields] OR "El Salvador"[All Fields] OR "Guatemala"[All Fields] OR "Honduras"[All Fields] OR "Nicaragua"[All Fields] OR "Panama"[All Fields] OR "Anguilla"[All Fields] OR "Antigua and Barbuda"[All Fields] OR "Aruba"[All Fields] OR "Bahamas"[All Fields] OR "Barbados"[All Fields] OR "British Virgin Islands"[All Fields] OR "Cayman Islands"[All Fields] OR "Cuba"[All Fields] OR "Dominica"[All Fields] OR "Dominican Republic"[All Fields] OR "Grenada"[All Fields] OR "Guadeloupe"[All Fields] OR "Haiti"[All Fields] OR "Jamaica"[All Fields] OR "Martinique"[All Fields] OR "Montserrat"[All Fields] OR "Netherlands Antilles"[All Fields] OR "Puerto Rico"[All Fields] OR "Saint Barthelemy"[All Fields] OR "Saint Kits and Nevis"[All Fields] OR "Saint Lucia"[All Fields] OR "Saint Martin"[All Fields] OR "Saint Vincent and the Grenadines"[All Fields] OR "Trinidad and Tobago"[All Fields] OR "United States Virgin Islands"[All Fields] OR "Mexico"[All Fields] OR "Hawaii"[All Fields] OR "Cape Verde"[All Fields] OR "Sao Tome and Principe"[All Fields] OR "Gambia"[All Fields] OR "Senegal"[All Fields] OR "Guinea-Bissau"[All Fields] OR "Guinea"[All Fields] OR "Sierra Leone"[All Fields] OR "Liberia"[All Fields] OR "Ivory Coast"[All Fields] OR "Ghana"[All Fields] OR "Togo"[All Fields] OR "Benin"[All Fields] OR "Nigeria"[All Fields] OR "Cameroon"[All Fields] OR "Central African Republic"[All Fields] OR "South Sudan"[All Fields] OR "Ethiopia"[All Fields] OR "Equatorial Guinea"[All Fields] OR "Gabon"[All Fields] OR "Congo"[All Fields] OR "Democratic Republic of the Congo"[All Fields] OR "Uganda"[All Fields] OR "Rwanda"[All Fields] OR "Burundi"[All Fields] OR "Kenya"[All Fields] OR "Somalia"[All Fields] OR "Tanzania"[All Fields] OR "Zambia"[All Fields] OR "Mozambique"[All Fields] OR "Madagascar"[All Fields] OR "Seychelles"[All Fields] OR "Mauritius"[All Fields] OR "Comoros"[All Fields] OR "Botswana"[All Fields] OR "Malawi"[All Fields] OR "Brunei"[All Fields] OR "Burma"[All Fields] OR "Myanmar"[All Fields] OR "Cambodia"[All Fields] OR "East Timor"[All Fields] OR

1
2
3 "Indonesia"[All Fields] OR "Laos"[All Fields] OR "Malaysia"[All Fields] OR "Philippines"[All
4 Fields] OR "Singapore"[All Fields] OR "Thailand"[All Fields] OR "Vietnam"[All Fields] OR
5 "India"[All Fields] OR "Papua New Guinea"[All Fields] OR "Australia"[All Fields] OR "Solomon
6 Islands"[All Fields] OR "Vanuatu"[All Fields] OR "New Caledonia"[All Fields]) AND
7 ("cardiovascular diseases"[MeSH Terms] OR "cardiovascular diseases"[Text Word] OR
8 "Cardiovascular Disease"[All Fields] OR "disease cardiovascular"[All Fields] OR "Major Adverse
9 Cardiac Events"[All Fields] OR "Cardiac Events"[All Fields] OR "Cardiac Event"[All Fields] OR
10 "event cardiac"[All Fields] OR "Adverse Cardiac Event"[All Fields] OR "Adverse Cardiac
11 Events"[All Fields] OR "cardiac events adverse"[All Fields] OR "chemically induced
12 disorders"[MeSH Terms] OR "chemically induced disorders"[Text Word] OR "chemically induced
13 disorders"[All Fields] OR "Chemically-Induced Disorder"[All Fields] OR "congenital, hereditary,
14 and neonatal diseases and abnormalities"[MeSH Terms] OR "congenital hereditary and neonatal
15 diseases and abnormalities"[Text Word] OR "Congenital Disorders"[All Fields] OR "disorder
16 congenital"[All Fields] OR "disorders congenital"[All Fields] OR "Neonatal Diseases and
17 Abnormalities"[All Fields] OR "Digestive System Diseases"[MeSH Terms] OR "Digestive System
18 Diseases"[Text Word] OR "Digestive System Disease"[All Fields] OR "Digestive System
19 Disorders"[All Fields] OR "Digestive System Disorder"[All Fields] OR "system disorders
20 digestive"[All Fields] OR "Hepatobiliary Disorders"[All Fields] OR "Hepatobiliary Disorder"[All
21 Fields] OR "Hepatobiliary Diseases"[All Fields] OR "Hepatobiliary Disease"[All Fields] OR
22 "Disorders of Environmental Origin"[MeSH Terms] OR "Disorders of Environmental Origin"[Text
23 Word] OR "Endocrine System Diseases"[MeSH Terms] OR "Endocrine System Diseases"[Text
24 Word] OR "disease endocrine system"[All Fields] OR "diseases endocrine system"[All Fields] OR
25 "Endocrine System Disease"[All Fields] OR "system disease endocrine"[All Fields] OR "system
26 diseases endocrine"[All Fields] OR "Endocrine Diseases"[All Fields] OR "disease endocrine"[All
27 Fields] OR "diseases endocrine"[All Fields] OR "Endocrine Disease"[All Fields] OR "Diseases of
28 Endocrine System"[All Fields] OR "Eye Diseases"[MeSH Terms] OR "Eye Diseases"[Text Word]
29 OR "Eye Disease"[All Fields] OR "Eye Disorders"[All Fields] OR "Eye Disorder"[All Fields] OR
30 "Hemic and Lymphatic Diseases"[MeSH Terms] OR "Hemic and Lymphatic Diseases"[Text Word]
31 OR "Blood and Lymphatic System Disorders"[All Fields] OR "Immune System Diseases"[MeSH
32 Terms] OR "Immune System Diseases"[Text Word] OR "disease immune system"[All Fields] OR
33 "Immune System Disease"[All Fields] OR "Immunologic Diseases"[All Fields] OR "disease
34 immunologic"[All Fields] OR "Immunologic Disease"[All Fields] OR "Immunological
35 Diseases"[All Fields] OR "disease immunological"[All Fields] OR "Immunological Disease"[All
36 Fields] OR "Immune Diseases"[All Fields] OR "disease immune"[All Fields] OR "Immune
37 Disease"[All Fields] OR "Diseases of Immune System"[All Fields] OR "Immune Disorders"[All
38 Fields] OR "Immune Disorder"[All Fields] OR "Immune System Disorders"[All Fields] OR
39 "disorder immune system"[All Fields] OR "Immune System Disorder"[All Fields] OR
40 "Infections"[MeSH Terms] OR "Infections"[Text Word] OR "Infection and Infestation"[All Fields]
41 OR "Infestation and Infection"[All Fields] OR "Infections and Infestations"[All Fields] OR
42 "Infestations and Infections"[All Fields] OR "Infection"[All Fields] OR "Musculoskeletal
43 Diseases"[MeSH Terms] OR "Musculoskeletal Diseases"[Text Word] OR "Musculoskeletal
44 Disease"[All Fields] OR "Orthopedic Disorders"[All Fields] OR "Orthopedic Disorder"[All Fields]
45 OR "Neoplasms"[MeSH Terms] OR "Neoplasms"[Text Word] OR "Tumor"[All Fields] OR
46 "Neoplasm"[All Fields] OR "Tumors"[All Fields] OR "Neoplasia"[All Fields] OR "Neoplasias"[All
47 Fields] OR "Cancer"[All Fields] OR "Cancers"[All Fields] OR "Malignant Neoplasm"[All Fields]
48 OR "Malignancy"[All Fields] OR "Malignancies"[All Fields] OR "Malignant Neoplasms"[All
49 Fields] OR "neoplasm malignant"[All Fields] OR "neoplasms malignant"[All Fields] OR "Benign
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Neoplasms"[All Fields] OR "Benign Neoplasm"[All Fields] OR "neoplasms benign"[All Fields]
4 OR "neoplasm benign"[All Fields] OR "Nervous System Diseases"[MeSH Terms] OR "Nervous
5 System Diseases"[Text Word] OR "disease nervous system"[All Fields] OR "diseases nervous
6 system"[All Fields] OR "Nervous System Disease"[All Fields] OR "Neurologic Disorders"[All
7 Fields] OR "disorder neurologic"[All Fields] OR "disorders neurologic"[All Fields] OR
8 "Neurologic Disorder"[All Fields] OR "Neurological Disorders"[All Fields] OR "disorder
9 neurological"[All Fields] OR "disorders neurological"[All Fields] OR "Neurological Disorder"[All
10 Fields] OR "Nervous System Disorders"[All Fields] OR "disorder nervous system"[All Fields] OR
11 "disorders nervous system"[All Fields] OR "Nervous System Disorder"[All Fields] OR "Nutritional
12 and Metabolic Diseases"[MeSH Terms] OR "Nutritional and Metabolic Diseases"[Text Word] OR
13 "Occupational Diseases"[MeSH Terms] OR "Occupational Diseases"[Text Word] OR "disease
14 occupational"[All Fields] OR "Occupational Disease"[All Fields] OR "Occupational Illnesses"[All
15 Fields] OR "illnesses occupational"[All Fields] OR "diseases occupational"[All Fields] OR
16 "Otorhinolaryngologic Diseases"[MeSH Terms] OR "Otorhinolaryngologic Diseases"[Text Word]
17 OR "Otorhinolaryngological Disease"[All Fields] OR "Otorhinolaryngological Diseases"[All
18 Fields] OR "Otolaryngological Diseases"[All Fields] OR "diseases otolaryngological"[All Fields]
19 OR "Otolaryngological Disease"[All Fields] OR "Otorhinolaryngologic Disease"[All Fields] OR
20 "ENT Diseases"[All Fields] OR "disease ent"[All Fields] OR "diseases ent"[All Fields] OR "ENT
21 Disease"[All Fields] OR "Otolaryngologic Diseases"[All Fields] OR "disease otolaryngologic"[All
22 Fields] OR "diseases otolaryngologic"[All Fields] OR "Otolaryngologic Disease"[All Fields] OR
23 "pathological conditions, signs and symptoms"[MeSH Terms] OR "pathological conditions signs
24 and symptoms"[Text Word] OR "Respiratory Tract Diseases"[MeSH Terms] OR "Respiratory Tract
25 Diseases"[Text Word] OR "disease respiratory tract"[All Fields] OR "Respiratory Tract
26 Disease"[All Fields] OR "Respiratory Diseases"[All Fields] OR "Respiratory System Diseases"[All
27 Fields] OR "disease respiratory system"[All Fields] OR "Respiratory System Disease"[All Fields]
28 OR "Skin and Connective Tissue Diseases"[MeSH Terms] OR "Skin and Connective Tissue
29 Diseases"[Text Word] OR "Stomatognathic Diseases"[MeSH Terms] OR "Stomatognathic
30 Diseases"[Text Word] OR "Stomatognathic Disease"[All Fields] OR "Mouth and Tooth
31 Diseases"[All Fields] OR "Dental Diseases"[All Fields] OR "Dental Disease"[All Fields] OR
32 "disease dental"[All Fields] OR "diseases dental"[All Fields] OR "Urogenital Diseases"[MeSH
33 Terms] OR "Urogenital Diseases"[Text Word] OR "disease urogenital"[All Fields] OR "Urogenital
34 Disease"[All Fields] OR "Genitourinary Diseases"[All Fields] OR "disease genitourinary"[All
35 Fields] OR "Genitourinary Disease"[All Fields] OR "Wounds and Injuries"[MeSH Terms] OR
36 "Wounds and Injuries"[Text Word] OR "Injuries and Wounds"[All Fields] OR "Wounds and
37 Injury"[All Fields] OR "Injury and Wounds"[All Fields] OR "wounds injury"[All Fields] OR
38 "Trauma"[All Fields] OR "Traumas"[All Fields] OR "injuries wounds"[All Fields] OR "research
39 related injuries"[All Fields] OR "research related injuries"[All Fields] OR "Research-Related
40 Injury"[All Fields] OR "Injuries"[All Fields] OR "Injury"[All Fields] OR "Wounds"[All Fields] OR
41 "Wound"[All Fields] OR "Vital Statistics"[MeSH Terms] OR "Vital Statistics"[Text Word] OR
42 "statistics vital"[All Fields] OR "Vital Statistics Registration"[All Fields] OR "Registration of Vital
43 Statistics"[All Fields] OR "Vital Statistics Registrations"[All Fields] OR "registration vital
44 statistics"[All Fields] OR "registrations vital statistics"[All Fields] OR "Patient Care"[MeSH Terms]
45 OR "Patient Care"[Text Word] OR "care patient"[All Fields] OR "Informal care"[All Fields] OR
46 "Informal cares"[All Fields] OR "care informal"[All Fields])
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Date of search: August 18, 2023

Results: 2,296

Scopus

Search: ("wildfires" OR "wildfire" OR "wildland fires" OR "brush fires" OR "brush fire" OR "forest fires" OR "fire forest" OR "fires forest" OR "forest fire" OR "wild fires" OR "wild fire" OR "fires" OR "fire" OR "fire outbreaks" OR "deforestation" OR "grassfire" OR "prescribed burn" OR "prescribed fire")AND ("tropical climate" OR "climate tropical" OR "climates tropical" OR "tropical climates" OR "rainforest" OR "rainforests" OR "rain forest" OR "forest rain" OR "rain forests" OR "tropical rainforest" OR "rainforest tropical" OR "rainforests tropical" OR "tropical rainforests" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros" OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR "Vanuatu" OR "New Caledonia") AND ("cardiovascular diseases" OR "Cardiovascular Disease" OR "disease cardiovascular" OR "Major Adverse Cardiac Events" OR "Cardiac Events" OR "Cardiac Event" OR "event cardiac" OR "Adverse Cardiac Event" OR "Adverse Cardiac Events" OR "cardiac events adverse" OR "chemically induced disorders" OR "chemically induced disorders" OR "Chemically-Induced Disorder" OR "congenital, hereditary, and neonatal diseases and abnormalities" OR "Congenital Disorders" OR "disorder congenital" OR "disorders congenital" OR "Neonatal Diseases and Abnormalities" OR "Digestive System Diseases" OR "Digestive System Disease" OR "Digestive System Disorders" OR "Digestive System Disorder" OR "system disorders digestive" OR "Hepatobiliary Disorders" OR "Hepatobiliary Disorder" OR "Hepatobiliary Diseases" OR "Hepatobiliary Disease" OR "Disorders of Environmental Origin" OR "Endocrine System Diseases" OR "disease endocrine system" OR "diseases endocrine system" OR "Endocrine System Disease" OR "system disease endocrine" OR "system diseases endocrine" OR "Endocrine Diseases" OR "disease endocrine" OR "diseases endocrine" OR "Endocrine Disease" OR "Diseases of Endocrine System" OR "Eye Diseases" OR "Eye Disease" OR "Eye Disorders" OR "Eye Disorder" OR "Hemic and Lymphatic Diseases" OR "Blood and Lymphatic System Disorders" OR "Immune System Diseases" OR "disease immune system" OR "Immune System Disease" OR "Immunologic Diseases" OR "disease immunologic" OR "Immunologic Disease" OR "Immunological Diseases"

OR "disease immunological" OR "Immunological Disease" OR "Immune Diseases" OR "disease immune" OR "Immune Disease" OR "Diseases of Immune System" OR "Immune Disorders" OR "Immune Disorder" OR "Immune System Disorders" OR "disorder immune system" OR "Immune System Disorder" OR "Infections" OR "Infection and Infestation" OR "Infestation and Infection" OR "Infections and Infestations" OR "Infestations and Infections" OR "Infection" OR "Musculoskeletal Diseases" OR "Musculoskeletal Disease" OR "Orthopedic Disorders" OR "Orthopedic Disorder" OR "Neoplasms" OR "Tumor" OR "Neoplasm" OR "Tumors" OR "Neoplasia" OR "Neoplasias" OR "Cancer" OR "Cancers" OR "Malignant Neoplasm" OR "Malignancy" OR "Malignancies" OR "Malignant Neoplasms" OR "neoplasm malignant" OR "neoplasms malignant" OR "Benign Neoplasms" OR "Benign Neoplasm" OR "neoplasms benign" OR "neoplasm benign" OR "Nervous System Diseases" OR "disease nervous system" OR "diseases nervous system" OR "Nervous System Disease" OR "Neurologic Disorders" OR "disorder neurologic" OR "disorders neurologic" OR "Neurologic Disorder" OR "Neurological Disorders" OR "disorder neurological" OR "disorders neurological" OR "Neurological Disorder" OR "Nervous System Disorders" OR "disorder nervous system" OR "disorders nervous system" OR "Nervous System Disorder" OR "Nutritional and Metabolic Diseases" OR "Occupational Diseases" OR "disease occupational" OR "Occupational Disease" OR "Occupational Illnesses" OR "illnesses occupational" OR "diseases occupational" OR "Otorhinolaryngologic Diseases" OR "Otorhinolaryngological Disease" OR "Otorhinolaryngological Diseases" OR "Otolaryngological Diseases" OR "diseases otolaryngological" OR "Otolaryngological Disease" OR "Otorhinolaryngologic Disease" OR "ENT Diseases" OR "disease ent" OR "diseases ent" OR "ENT Disease" OR "Otolaryngologic Diseases" OR "disease otolaryngologic" OR "diseases otolaryngologic" OR "Otolaryngologic Disease" OR "pathological conditions, signs and symptoms" OR "Respiratory Tract Diseases" OR "disease respiratory tract" OR "Respiratory Tract Disease" OR "Respiratory Diseases" OR "Respiratory System Diseases" OR "disease respiratory system" OR "Respiratory System Disease" OR "Skin and Connective Tissue Diseases" OR "Stomatognathic Diseases" OR "Stomatognathic Disease" OR "Mouth and Tooth Diseases" OR "Dental Diseases" OR "Dental Disease" OR "disease dental" OR "diseases dental" OR "Urogenital Diseases" OR "disease urogenital" OR "Urogenital Disease" OR "Genitourinary Diseases" OR "disease genitourinary" OR "Genitourinary Disease" OR "Wounds and Injuries" OR "Injuries and Wounds" OR "Wounds and Injury" OR "Injury and Wounds" OR "wounds injury" OR "Trauma" OR "Traumas" OR "injuries wounds" OR "research related injuries" OR "research related injuries" OR "Research-Related Injury" OR "Injuries" OR "Injury" OR "Wounds" OR "Wound" OR "Vital Statistics" OR "statistics vital" OR "Vital Statistics Registration" OR "Registration of Vital Statistics" OR "Vital Statistics Registrations" OR "registration vital statistics" OR "registrations vital statistics" OR "Patient Care" OR "care patient" OR "Informal care" OR "Informal cares" OR "care informal")

Date of search: August 18, 2023

Results: 1,604

Biblioteca Virtual em Saúde

1
2
3 #1 "Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires"
4 OR "Incendios"

5
6 #2 "Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR "Rainforest" OR "Bosque
7 Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR
8 "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR
9 "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR
10 "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba"
11 OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR
12 "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica"
13 OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint
14 Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and
15 the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR
16 "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-
17 Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo"
18 OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR
19 "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the
20 Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR
21 "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros"
22 OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East
23 Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand"
24 OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR
25 "Vanuatu" OR "New Caledonia"

26
27 #3 "Doenças Cardiovasculares" OR "Cardiovascular Diseases" OR "Enfermedades
28 Cardiovasculares" OR "Distúrbios Induzidos Quimicamente" OR "Chemically-Induced Disorders"
29 OR "Trastornos Químicamente Inducidos" OR "Doenças e Anormalidades Congênicas, Hereditárias
30 e Neonatais" OR "Congenital, Hereditary, and Neonatal Diseases and Abnormalities" OR
31 "Enfermedades y Anomalías Neonatales Congénitas y Hereditarias" OR "Doenças do Sistema
32 Digestório" OR "Digestive System Diseases" OR "Transtornos de Origem Ambiental" OR
33 "Disorders of Environmental Origin" OR "Trastornos de Origen Ambiental" OR "Doenças do
34 Sistema Endócrino" OR "Endocrine System Diseases" OR "Enfermedades del Sistema Endocrino"
35 OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças Sanguíneas e Linfáticas" OR "Hemic and
36 Lymphatic Diseases" OR "Enfermedades Hematológicas y Linfáticas" OR "Doenças do Sistema
37 Imunitário" OR "Immune System Diseases" OR "Enfermedades del Sistema Inmune" OR
38 "Infecções" OR "Infections" OR "Infecciones" OR "Doenças Musculoesqueléticas" OR
39 "Musculoskeletal Diseases" OR "Enfermedades Musculoesqueléticas" OR "Neoplasias" OR
40 "Neoplasms" OR "Doenças do Sistema Nervoso" OR "Nervous System Diseases" OR
41 "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais e Metabólicas" OR "Nutritional
42 and Metabolic Diseases" OR "Enfermedades Nutricionales y Metabólicas OR Doenças
43 Profissionais" OR "Occupational Diseases" OR "Enfermedades Profesionales" OR
44 "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR "Enfermedades
45 Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR "Pathological
46 Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças
47 Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças
48 da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades
49 de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases"
50 OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR

1
2
3 "Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas
4 y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR
5 "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente"
6
7
8
9

10 Detailed search:

11 ("Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires" OR
12 "Incendios") AND ("Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR
13 "Rainforest" OR "Bosque Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR
14 "Ecuador" OR "Bolivia" OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR
15 "French Guiana" OR "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica"
16 OR "El Salvador" OR "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla"
17 OR "Antigua and Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin
18 Islands" OR "Cayman Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR
19 "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR
20 "Netherlands Antilles" OR "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR
21 "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and
22 Tobago" OR "United States Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao
23 Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra
24 Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR
25 "Cameroon" OR "Central African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial
26 Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR
27 "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR
28 "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros" OR
29 "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East
30 Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR
31 "Thailand" OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon
32 Islands" OR "Vanuatu" OR "New Caledonia") AND ("Doenças Cardiovasculares" OR
33 "Cardiovascular Diseases" OR "Enfermedades Cardiovasculares" OR "Distúrbios Induzidos
34 Quimicamente" OR "Chemically-Induced Disorders" OR "Trastornos Químicamente Inducidos"
35 OR "Doenças e Anormalidades Congênicas, Hereditárias e Neonatais" OR "Congenital, Hereditary,
36 and Neonatal Diseases and Abnormalities" OR "Enfermedades y Anomalías Neonatales Congénitas
37 y Hereditarias" OR "Doenças do Sistema Digestório" OR "Digestive System Diseases" OR
38 "Transtornos de Origem Ambiental" OR "Disorders of Environmental Origin" OR "Trastornos de
39 Origen Ambiental" OR "Doenças do Sistema Endócrino" OR "Endocrine System Diseases" OR
40 "Enfermedades del Sistema Endocrino" OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças
41 Sanguíneas e Linfáticas" OR "Hemic and Lymphatic Diseases" OR "Enfermedades Hematológicas
42 y Linfáticas" OR "Doenças do Sistema Imunitário" OR "Immune System Diseases" OR
43 "Enfermedades del Sistema Inmune" OR "Infecções" OR "Infections" OR "Infecciones" OR
44 "Doenças Musculoesqueléticas" OR "Musculoskeletal Diseases" OR "Enfermedades
45 Musculoesqueléticas" OR "Neoplasias" OR "Neoplasms" OR "Doenças do Sistema Nervoso" OR
46 "Nervous System Diseases" OR "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais
47 e Metabólicas" OR "Nutritional and Metabolic Diseases" OR "Enfermedades Nutricionales y
48 Metabólicas" OR "Doenças Profissionais" OR "Occupational Diseases" OR "Enfermedades
49 Profesionales" OR "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR
50 "Enfermedades Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR
51
52
53
54
55
56
57
58
59
60

"Pathological Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases" OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR "Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente")

Date of search: August 18, 2023

Results: Lilacs (n = 44), Medline (n = 246), WPRIM (n = 3), BDENF – Enfermagem (n = 2), MINASPERÚ (n = 2), Recursos Multimídia (n = 2), BINACIS (n = 1), Desastres (n = 1), MedCarib (n = 1), PAHO-IRIS (n = 1), RDSM (n = 1), Coleciona SUS (n = 1).

Embase

	#4
#1 AND #2 AND #3	<u>4,019</u>

	#3
('wildfires'/syn OR 'fire'/syn OR 'deforestation'/syn) AND [embase]/lim	<u>42,804</u>

	#2
--	----

('tropical climate'/syn OR 'climate tropical' OR 'climates tropical' OR 'tropical climates' OR 'rainforest'/syn OR 'rainforests' OR 'rain forest'/syn OR 'forest rain' OR 'rain forests' OR 'tropical rainforest'/syn OR 'rainforest tropical'/syn OR 'rainforests tropical' OR 'tropical rainforests' OR 'amazon'/syn OR 'brazil'/syn OR 'argentina'/syn OR 'peru'/syn OR 'ecuador'/syn OR 'bolivia'/syn OR 'colombia'/syn OR 'venezuela'/syn OR 'guyana'/syn OR 'suriname'/syn OR 'french guiana'/syn OR 'paraguay'/syn OR 'belize'/syn OR 'costa rica'/syn OR 'el salvador'/syn OR 'guatemala'/syn OR 'honduras'/syn OR 'nicaragua'/syn OR 'panama'/syn OR 'anguilla'/syn OR 'antigua and barbuda'/syn OR 'aruba'/syn OR 'bahamas'/syn OR 'barbados'/syn OR 'british virgin islands'/syn OR 'cayman islands'/syn OR 'cuba'/syn OR 'dominica'/syn OR 'dominican republic'/syn OR 'grenada'/syn OR 'guadeloupe'/syn OR 'haiti'/syn OR 'jamaica'/syn OR 'martinique'/syn OR 'montserrat'/syn OR 'netherlands antilles'/syn OR 'puerto rico'/syn OR 'saint barthelemy'/syn OR 'saint kits and nevis' OR 'saint lucia'/syn OR 'saint martin'/syn OR 'saint vincent and the grenadines'/syn OR 'trinidad and tobago'/syn OR 'united states virgin islands'/syn OR 'mexico'/syn OR 'hawaii'/syn OR 'cape verde'/syn OR 'sao tome and principe'/syn OR 'gambia'/syn OR 'senegal'/syn OR 'guinea-bissau'/syn OR 'guinea'/syn OR 'sierra leone'/syn OR 'liberia'/syn OR 'ivory coast'/syn OR 'ghana'/syn OR 'togo'/syn OR 'benin'/syn OR 'nigeria'/syn

OR 'cameroon'/syn OR 'central african republic'/syn OR 'south sudan'/syn OR 'ethiopia'/syn
 OR 'equatorial guinea'/syn OR 'gabon'/syn OR 'congo'/syn OR 'democratic republic of the
 congo'/syn OR 'uganda'/syn OR 'rwanda'/syn OR 'burundi'/syn OR 'kenya'/syn OR 'somalia'/syn
 OR 'tanzania'/syn OR 'zambia'/syn OR 'mozambique'/syn OR 'madagascar'/syn OR 'seychelles'/syn
 OR 'mauritius'/syn OR 'comoros'/syn OR 'botswana'/syn OR 'malawi'/syn OR 'brunei'/syn
 OR 'burma'/syn OR 'myanmar'/syn OR 'cambodia'/syn OR 'east timor'/syn OR 'indonesia'/syn
 OR 'laos'/syn OR 'malaysia'/syn OR 'philippines'/syn OR 'singapore'/syn OR 'thailand'/syn
 OR 'vietnam'/syn OR 'india'/syn OR 'papua new guinea'/syn OR 'australia'/syn OR 'solomon
 islands'/syn OR 'vanuatu'/syn OR 'new caledonia'/syn) AND [embase]/lim

[4,621,441](#)

#1

('patient care'/syn OR 'vital statistics'/syn OR 'wounds and injuries'/syn OR 'urogenital tract
 disease'/syn OR 'stomatognathic diseases'/syn OR 'skin and connective tissue diseases'/syn
 OR 'respiratory tract diseases'/syn OR 'pathological conditions, signs and symptoms'/syn
 OR 'otorhinolaryngologic diseases'/syn OR 'occupational diseases'/syn OR 'nutritional and
 metabolic diseases'/syn OR 'nervous system diseases'/syn OR 'neoplasms'/syn OR 'musculoskeletal
 disease'/syn OR 'infection'/syn OR 'immune system diseases'/syn OR 'hemic and lymphatic
 diseases'/syn OR 'eye diseases'/syn OR 'endocrine disease'/syn OR 'environmental disease'/syn
 OR 'digestive system diseases'/syn OR 'congenital, hereditary, and neonatal diseases and
 abnormalities'/syn OR 'chemically induced disorder'/syn OR 'cardiovascular diseases'/syn) AND
 [embase]/lim

Date of search: August 18, 2023

Records: 4,020

EconLit

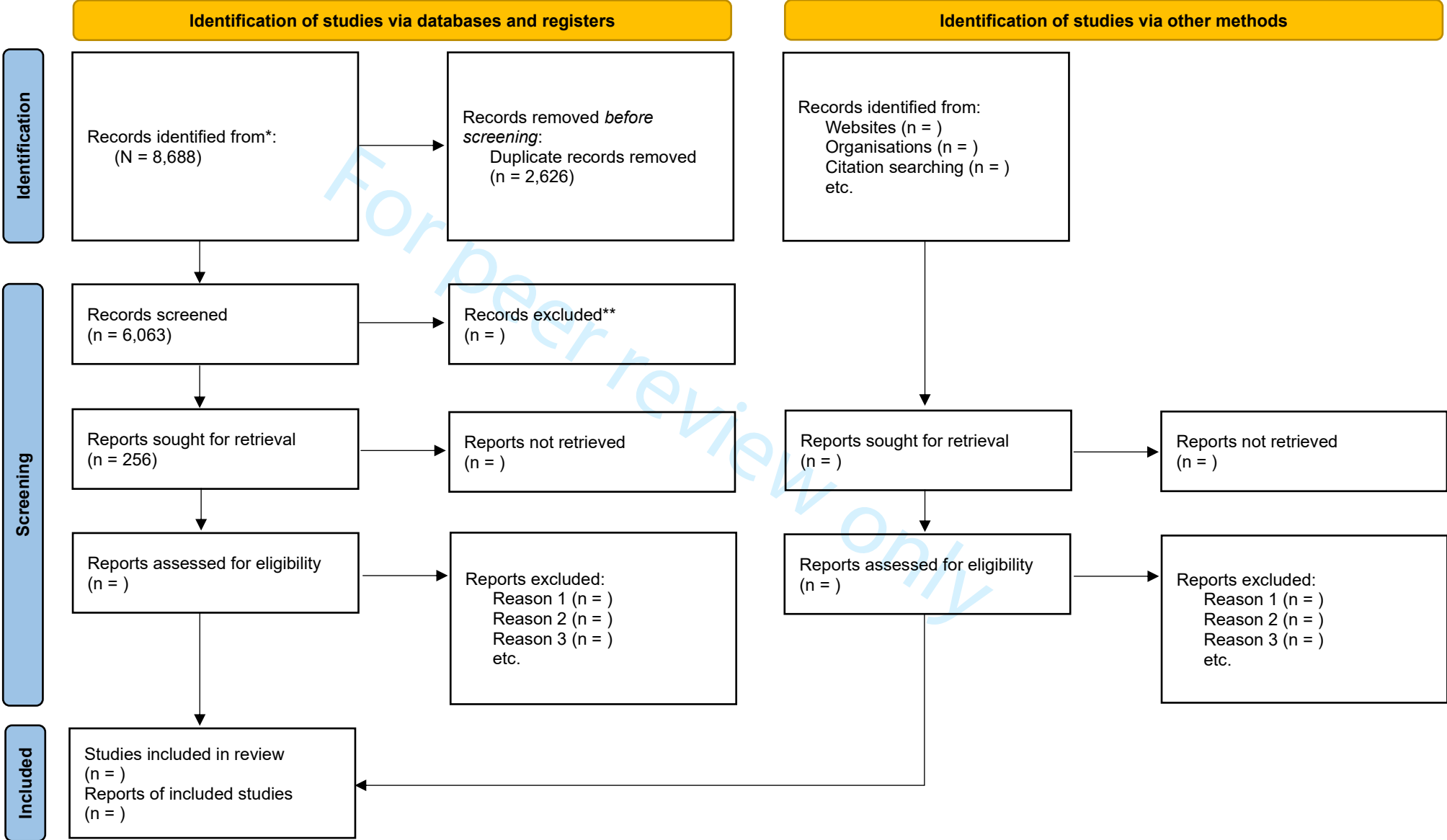
((('wildfires' or 'fire' or 'deforestation') and (((((((((((('tropical climate' or 'climate tropical' or
 'climates tropical' or 'tropical climates' or 'rainforest' or 'rainforests' or 'rain forest' or 'forest rain' or
 'rain
 forests' or 'tropical rainforest' or 'rainforest tropical' or 'rainforests tropical' or 'tropical rainforests' or
 'Amazon' or 'Brazil' or 'Argentina' or 'Peru' or 'Ecuador' or 'Bolivia' or 'Colombia' or 'Venezuela' or
 'Guyana' or
 'Suriname' or 'French Guiana' or 'Paraguay' or 'Panama' or 'El Salvador' or 'Belize' or 'Costa Rica' or
 'El Salvador' or
 'Guatemala' or 'Honduras' or 'Nicaragua' or 'Panama' or 'Anguilla' or 'Antigua) and Barbuda') or
 'Aruba' or 'Bahamas' or
 'Barbados' or 'British Virgin Islands' or 'Cayman Islands' or 'Cuba' or 'Dominica' or 'Dominican
 Republic' or 'Grenada'
 or 'Guadeloupe' or 'Haiti' or 'Jamaica' or 'Martinique' or 'Montserrat' or 'Netherlands Antilles' or
 'Puerto Rico' or
 'Saint Barthelemy' or 'Saint Kits) and Nevis') or 'Saint Lucia' or 'Saint Martin' or 'Saint Vincent) and
 the

1
2
3 Grenadines') or 'Trinidad) and Tobago') or 'United States Virgin Islands' or 'Mexico' or 'Hawaii' or
4 'Cape Verde' or
5 'Sao Tome) and Principe') or 'Gambia' or 'Senegal' or 'Guinea-Bissau' or 'Guinea' or 'Sierra Leone' or
6 'Liberia' or
7 'Ivory Coast' or 'Ghana' or 'Togo' or 'Benin' or 'Nigeria' or 'Cameroon' or 'Central African Republic'
8 or 'South Sudan'
9 or 'Ethiopia' or 'Equatorial Guinea' or 'Gabon' or 'Congo' or 'Democratic Republic of the Congo' or
10 'Uganda' or 'Rwanda'
11 or 'Burundi' or 'Kenya' or 'Somalia' or 'Tanzania' or 'Zambia' or 'Mozambique' or 'Madagascar' or
12 'Seychelles' or
13 'Mauritius' or 'Comoros' or 'Botswana' or 'Malawi' or 'Brunei' or 'Burma' or 'Myanmar' or
14 'Cambodia' or 'East Timor' or
15 'Indonesia' or 'Laos' or 'Malaysia' or 'Philippines' or 'Singapore' or 'Thailand' or 'Vietnam' or 'India'
16 or 'Papua New
17 Guinea' or 'Australia' or 'Solomon Islands' or 'Vanuatu' or 'New Caledonia') and (((((((((((('patient
18 care' or 'vital
19 statistics' or 'wounds) and injuries') or 'urogenital tract disease' or 'stomatognathic diseases' or 'skin)
20 and
21 connective tissue diseases') or 'respiratory tract diseases' or 'pathological conditions, signs) and
22 symptoms') or
23 'otorhinolaryngologic diseases' or 'occupational diseases' or 'nutritional) and metabolic diseases') or
24 'nervous system
25 diseases' or 'neoplasms' or 'musculoskeletal disease' or 'infection' or 'immune system diseases' or
26 'hemic) and
27 lymphatic diseases') or 'eye diseases' or 'endocrine disease' or 'environmental disease' or 'digestive
28 system diseases'
29 or 'congenital, hereditary,) and neonatal diseases and abnormalities') or 'chemically induced
30 disorder' or
31 'cardiovascular diseases')).mp. [mp=tx, bt, ti, ab, ct, hw, id]

32
33
34
35
36
37
38
39 Date of search: August 18, 2023

40
41 Records: 464
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Appendix II - Ongoing work



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Appendix III - Data extraction form

General information	
Reviewer who performed the data extraction:	
Date of the data extraction performed:	
Paper database:	
Study identification	
Publication full title:	
DOI number:	
First author name:	
Year of publication:	
Journal of publication:	
Aim of study:	
Exposure and data source	
Area (city, region, country):	
Exposure:	
Exposure temporal level:	
Exposure temporal duration:	
Origin of the exposure data source:	
Origin of the outcome data source:	
Method	
The statistical model applied:	
Study design and findings	
Study population:	
Health outcome:	
Type of disease:	
Lag between exposure and the health consequences	
Study findings as reported by the authors:	
Report the following list:	
1. measure of association + standard errors for every different regression specification	
2. Subgroups estimates	
3. Confounders used	
4. Identification strategy if applicable	
Conclusions	
Study limitations identified by the team:	
Policy recommendation from the study	

BMJ Open

Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2023-082381.R2
Article Type:	Protocol
Date Submitted by the Author:	10-Apr-2024
Complete List of Authors:	<p>Casais, Gustavo; Fiocruz Brasilia, Center of Data and Knowledge Integration for Health Guimarães, Nathalia ; Federal University of Minas Gerais, Department of Nutrition Cortes, Taísa ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Center of Data and Knowledge Integration for Health Pescarini , Julia ; London School of Hygiene & Tropical Medicine; Center of Data and Knowledge Integration for Health (CIDACS) Rebouças de Magalhães, Poliana; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Wells, Valerie; University of Glasgow de Sousa Filho, José Firmino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Delgado Neves, Danielson; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Shimonovich , Michal ; University of Glasgow Olsen, Jonathan; University of Glasgow de Carvalho Neto, Edgar Marcelino; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Cooper, Philip; Universidad Internacional del Ecuador; St George's, University of London Katikireddi, Srinivasa; University of Glasgow Emanuel, Lucas; Federal University of Bahia; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA Andrade , Roberto F. S. ; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia Ferreira dos Santos, Gervasio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia Barreto, Mauricio; Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA; Federal University of Bahia</p>
Primary Subject Heading:	Public health
Secondary Subject Heading:	Epidemiology, Global health, Health policy, Health economics
Keywords:	EPIDEMIOLOGY, PUBLIC HEALTH, STATISTICS & RESEARCH METHODS, TROPICAL MEDICINE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60



Wildfire, deforestation, and health in tropical rainforest areas: a scoping review protocol

Gustavo Casais¹, Nathalia Sernizon Guimarães², Taísa Rodrigues Cortes¹, Julia Pescarini^{1,3}, Poliana Rebouças de Magalhães¹, Valerie Wells⁴, José Firmino de Sousa Filho¹, Danielson Jorge Delgado Neves¹, Michal Shimonovich⁴, Jonathan R Olsen⁴, Edgar Marcelino de Carvalho Neto¹, Philip J. Cooper^{5,6}, Srinivasa Vittal Katikireddi⁴, Lucas Emanuel^{1,7}, Roberto F. S. Andrade^{1,7}, Gervasio Ferreira dos Santos^{1,7}, Mauricio L. Barreto^{1,7}, on behalf of the Unit on the Social and Environmental Determinants of Health Inequalities (SEDHI)

¹Center for Data and Knowledge Integration for Healthcare (CIDACS)

²Federal University of Minas Gerais

³London School of Hygiene and Tropical Medicine

⁴MRC/CSO Social and Public Health Sciences Unit, University of Glasgow

⁵St George's, University of London

⁶School of Medicine, Universidad Internacional del Ecuador, Quito, Ecuador

⁷Federal University of Bahia

Author address and contact details:

Gustavo Casais, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, gustavo.casais@hotmail.com, +55 (71) 99127 3345.

Nathalia Sernizon Guimarães, PhD, Professor at Department of Nutrition, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil zip code 30130100.

Taísa Rodrigues Cortes, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, taisacortes@gmail.com, +55 (71) 99127 3345.

Julia Pescarini, PhD, London School of Hygiene and Tropical Medicine, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Keppel Street, London, WC1E 7HT, United Kingdom, julia.pescarini1@lshtm.ac.uk, +44 (0)20 7636 8636.

Poliana Rebouças de Magalhães, PhD, Center of Data and Knowledge Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, poliana.reboucas@fiocruz.br, +55 (71) 99127 3345.

Valerie Wells, Ms, MRC/CSO Social and Public Health Sciences Unit, University of Glasgow. 90 Byres Road, Glasgow, G12 8TB, United Kingdom, Valerie.Wells@glasgow.ac.uk, +44 0141 330 4042.

1
2
3 José Firmino de Sousa Filho, PhD, Center of Data and Knowledge Integration for Health (CIDACS)
4 - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315 -
5 Trobogy, Salvador - BA, Brazil, 41745-715, jose.ffilho@fiocruz.br, +55 (71) 99127 3345.
6

7
8 Danielson Jorge Delgado Neves¹, PhD, Center of Data and Knowledge Integration for Health
9 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala
10 315 - Trobogy, Salvador - BA, Brazil, 41745-715, danielson.neves@fiocruz.br, +55 (71) 99127
11 3345.
12

13
14 Michal Shimonovich, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow,
15 Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
16 Michal.Shimonovich@glasgow.ac.uk, +44 0141 330 4042.
17

18
19 Jonathan R Olsen, PhD, MRC/CSO Social & Public Health Sciences Unit, University of Glasgow,
20 Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
21 Jonathan.Olsen@glasgow.ac.uk, +44 0141 330 4042.
22

23
24 Edgar Marcelino de Carvalho Neto, PhD, Center of Data and Knowledge Integration for Health
25 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
26 - Trobogy, Salvador - BA, Brazil, 41745-715, edgar.neto@fiocruz.br, +55 (71) 99127 3345.
27

28
29 Philip J. Cooper, PhD, St George's, University of London; School of Medicine, Universidad
30 Internacional del Ecuador, Av. Simón Bolívar y Av. Jorge Fernández, Quito, Ecuador,
31 pcooper@sgul.ac.uk, +593 2 2985 600.
32

33
34 Srinivasa Vittal Katikireddi, PhD, MRC/CSO Social & Public Health Sciences Unit, University of
35 Glasgow, Berkeley Square, 99 Berkeley Street, Glasgow G3 7HR, United Kingdom,
36 Vittal.Katikireddi@glasgow.ac.uk, +44 0141 330 4042.
37

38
39 Lucas Emanuel, Federal University of Bahia; Center of Data and Knowledge Integration for Health
40 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
41 - Trobogy, Salvador - BA, Brazil, 41745-715, lucasemanuel@ufba.br, +55 (71) 99127 3345.
42

43
44 Dr. Roberto Fernandes Silva Andrade, Federal University of Bahia; Center of Data Knowledge
45 Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R.
46 Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, randrade@ufba.br, +55 (71)
47 99127 3345.
48

49
50 Dr. Gervasio Ferreira dos Santos, Federal University of Bahia; Center of Data Knowledge
51 Integration for Health (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R.
52 Mundo, 121 - sala 315 - Trobogy, Salvador - BA, Brazil, 41745-715, gervasios@ufba.br, +55 (71)
53 99127 3345.
54

55
56 Mauricio L. Barreto, Federal University of Bahia; Center of Data Knowledge Integration for Health
57 (CIDACS) - Fiocruz/BA, Parque Tecnológico da Bahia, Edf. Tecnocentro, R. Mundo, 121 - sala 315
58 - Trobogy, Salvador - BA, Brazil, 41745-715, mauricio@ufba.br, +55 (71) 99127 3345.
59

60
Correspondence to:

1
2
3 Gustavo Casais, PhD, Center of Data and Knowledge Integration for Health (CIDACS) -
4 Fiocruz/BA, Parque Tecnológico da Bahia, Edif. Tecnocentro, R. Mundo, 121 - sala 315 - Trobogy,
5 Salvador - BA, Brazil, 41745-715, gustavo.casais@hotmail.com, +55 (71) 99127 3345.
6
7
8
9

10 **Word count:** 2,619
11
12
13

14 **Keywords:** Wildfire; Deforestation; Tropical Climate; Rainforest; Health
15
16
17

18 **Abstract**

19
20 **Introduction:** Wildfires and deforestation potentially have direct effects on multiple health outcomes
21 as well as indirect consequences for climate change. Tropical rainforest areas are characterized by
22 high rainfall, humidity, and temperature, and they are predominantly found in low- and middle-
23 income countries. This study aims to synthesize the methods, data, and health outcomes reported in
24 scientific papers on wildfires and deforestation in these locations.
25

26 **Methods and analysis:** We will carry out a scoping review according to the Joanna Briggs Institute's
27 manual for scoping reviews and the framework proposed by Arksey and O'Malley, and Levac et al.
28 The search for articles was performed on August 18, 2023, in 16 electronic databases using MeSH
29 Terms and adaptations for each database from database inception. The search for local studies will
30 be complemented by the manual search in the list of references of the studies selected to compose
31 this review. We screened studies written in English, French, Portuguese and Spanish. We included
32 quantitative studies assessing any human disease outcome, hospitalization, and vital statistics in
33 regions of tropical rainforest. We exclude qualitative studies and quantitative studies whose outcomes
34 do not cover those of interest. The text screening was done by two independent reviewers.
35 Subsequently, we will tabulate the data by the origin of the data source used, the methods, and the
36 main findings on health impacts the extracted data. The results will provide descriptive statistics,
37 along with visual representations in diagrams and tables, complemented by narrative summaries as
38 detailed in the JBI guidelines.
39
40
41
42

43 **Ethics and dissemination:** The study does not require an ethical review as it is meta-research and
44 utilizes published, deidentified secondary data sources. The submission of results for publication in
45 a peer-reviewed journal and presentation at scientific and policymakers' conferences is expected.
46

47 **Study registration:** OSF, <https://osf.io/pnqc7/>.
48
49
50

51 **Strengths and limitations of this study**

- 52 • This scoping review will assess the health impacts of wildfires and deforestation across a
53 broad range of tropical rainforest regions.
- 54 • The search will include several different databases, including those from Latin America and
55 Africa.
- 56 • It will include manuscripts in English, French, Portuguese and Spanish, from database
57 inception.
58
59
60

- The ultimate selection of papers will be heavily influenced by the resolution of the shapefile used to delineate the tropical rainforest biome; this sensitivity to the map's resolution may result in the improper exclusion or inclusion of studies.
- A major limitation is the absence of critical appraisal, meaning that studies with potentially low relevance, reliability, validity and applicability might be included.

INTRODUCTION

One of the significant contributors to climate change is improper land use resulting from agriculture, logging, and mining, which potentially leads to wildfires and deforestation [1] [2]. Currently, wildfires and deforestation have been increasingly drawing attention for their potential consequences, not only for climate change but also for the health outcomes of both local and global populations. Governments across the world have been expressing this concern by adopting climate mitigation policies to contain environmental degradation. Understanding the health effects of wildfires and deforestation on populations in low- and middle-income countries is critical for designing evidence-based and successful mitigation plans and policies [3].

Tropical rainforests are home to not only a vast array of animal and plant species but also play a vital role in sustaining human well-being [4]. These ecosystems provide essential resources such as cocoa, coffee beans, bananas, vanilla, and cinnamon, which are used in everyday products. Furthermore, they are a rich source of chemical compounds instrumental in the development of medicines. These biomes are the ancestral homes of Indigenous and traditional peoples who not only live within these ecosystems but also actively preserve them along with their cultures. Rainforests are crucial in stabilizing the climate and maintaining the water cycle, contributing to the overall balance of global weather patterns [5] [6]. Without these rainforests, the dynamics and control of zoonotic diseases and vector-borne infections would be significantly disrupted [7]. The loss of rainforests would have severe consequences for the economy, global biodiversity and ecosystem services [8]. Figure 1 displays the location of all rainforest areas in the world according to [9].

While wildfires and deforestation often stem from common causes, they are also influenced by distinct drivers. Human activities, such as land clearing for agriculture, logging and development, play a significant role in both phenomena [10] [11]. In low- and middle-income countries, where agriculture constitutes a substantial portion of the economy, fluctuations in global demand can drive the expansion of agricultural areas, contributing to deforestation and increasing wildfire susceptibility [12] [13]. Additionally, inadequate policies, weak enforcement of regulations, and governance issues exacerbate both deforestation and wildfire risks by permitting unsustainable land use practices and inadequately allocating resources for fire prevention and suppression efforts [14]. Moreover, the

1
2
3 escalating frequency and intensity of extreme events, such as droughts, extreme temperatures, and
4 storms, linked to climate change, have been amplifying wildfire occurrences globally over the past
5 few decades [15]. Also, due to the usually high humidity in tropical rainforests, wildfires very rarely
6 occur by natural causes, so that both deforestations and wildfires are much closely related to human
7 activity [16] [17].
8
9

10
11
12 Wildfires have the potential to cause bodily injuries, impact housing infrastructure, and release toxic
13 gases and particulate matter into the air [18]. Exposure to smoke from wildfires can cause acute
14 respiratory illness and exacerbate existing disease, especially among children and elderly [19].
15 Additionally, the long-term effects of accumulated exposures to wildfires may be multiple including
16 premature death, cardiovascular disease, cancer, respiratory illness, mental health, and other chronic
17 conditions [20].
18
19
20
21
22

23 Deforestation has different causal mechanisms for public health outcomes. Deforestation can alter
24 environmental niches, changing habitats for parasites and insects, including disease-carrying
25 mosquitoes, which may increase the human risk of contracting vector-borne diseases such as malaria
26 and dengue [21] [7] [22]. Additionally, in the long run, deforestation can reduce the level of water in
27 the atmosphere, lead to soil erosion, desertification, flooding, and increase the local temperature [23]
28 [24] [25].
29
30
31
32
33

34 We have noticed that previous reviews on the health impacts of wildfires and deforestation have some
35 limitations. They often focus on specific population groups or a limited number of health outcomes,
36 and they might not search comprehensively across databases or years [20] [26] [27] [28] [29] [30]
37 [31]. Notably, no review has specifically addressed the health effects of wildfires in tropical rainforest
38 areas, which are mainly found in low- and middle-income countries. These regions are home to many
39 Indigenous and marginalized groups who are particularly vulnerable due to limited resources, higher
40 risk of health problems, and limited access to healthcare [32] [33] [34]. Tropical climate,
41 characterized by elevated temperatures, intense rainfall, and high humidity, can further impact health
42 conditions [35] [36]. Moreover, the most recent reviews on the health effects of deforestation are at
43 least four years old, indicating the need for an updated assessment [30] [31].
44
45
46
47
48
49
50

51 Conducting an updated review is crucial, especially considering the recent escalation of wildfires and
52 deforestation. This issue is particularly significant in Brazil, where fire outbreaks have been steadily
53 increasing, even though they have not reached the peak observed in 2004 [37] [38]. Such a review
54 will help identify and understand the specific ways in which wildfires and deforestation affect health
55 outcomes, hospitalizations, and vital statistics, the quantitative methods employed, and the data
56 sources used for these analyses.
57
58
59
60

1
2
3 Other critical areas of investigation include geographical mapping and the analytical methods
4 employed for analysis. There is a wide variety of information sources that provide mapping for the
5 occurrence of wildfires and deforestation, differentiating based on geographical scale and the time
6 period of change. Disparities in high-quality environmental data around the world highlight how some
7 places possess better information than others, which can be considered part of the phenomenon known
8 as the 'digital divide' [39]. Additionally, various analytical methods exist to study how wildfires and
9 deforestation impact people's health. The outcomes of such analyses heavily rely on the modelling
10 techniques employed, underscoring the crucial need to understand and utilize an array of available
11 methods. This understanding is pivotal in creating thorough and accurate insights to inform the
12 creation of future high-quality research and understand what key research gaps exist.

13
14
15
16
17
18
19
20
21 This scoping review aims to comprehensively synthesize the intricate relationships between wildfires,
22 deforestation, and their impact on health outcomes in tropical rainforest regions. Our more specific
23 objectives will be to characterize: (i) the health outcomes affected by wildfires and deforestation in
24 the tropical areas; (ii) the methods used to identify and measure their impact; (iii) the data sources
25 related to the wildfires and deforestation; (iv) and the policy recommendations from the studies. This
26 will equip policymakers and researchers with essential information about this research area,
27 highlighting knowledge gaps and paving the way for future research and development.

28 29 30 31 32 33 **METHODS AND ANALYSIS**

34
35 This scoping review protocol follows the guidelines of the Joanna Briggs Institute. The protocol is
36 based on the framework suggested by Peters, et al [40], Arksey and O'Malley [41], and enhanced by
37 Levac et al. [42]. It was written according to the checklist provided by the Preferred Reporting Items
38 for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) [43].

39
40
41
42
43 The scoping review will follow the steps below: (1) identifying the research question; (2) identifying
44 relevant studies; (3) study selection; (4) charting the data; (5) collating, summarising, and reporting
45 the results. The scoping review protocol was previously registered with the Open Science Framework
46 to identify ongoing reviews and avoid unnecessary duplication of research [44].

47 48 49 50 ***Step 1: Identifying the research question***

51
52 To enhance the organization of our research question and the criteria for inclusion and exclusion we
53 adhered to the mnemonic PCC (Population, Concept, Context), which is described with the research
54 question in the Table 1.

55
56
57
58 According to the Oxford Dictionary, wildfire means: "a very big fire that spreads quickly and burns
59 natural areas like woods, forests and grassland". We adopt this definition; therefore, we consider any
60

large fire that occur in different types of vegetation which can affect urban, peri urban or rural area. The deforestation is usually associated with human activity pursuing an economic purpose (e.g., farming, timber logging, expansion and infrastructure, and mining). The tropical rainforest is a warm and humid biome characterized by year-round rainfall. Renowned for its thick layers of vegetation, it consists of three distinct canopy levels located between the Tropic of Cancer and the Tropic of Capricorn [45]. We will consider the deforestation of the tropical forests located in urban, peri-urban, or rural areas.

Table 1. Scoping review questions and PCC mnemonic

Question	Population (P)	Concept (C)	Context (C)
1. What are the impacts of the wildfire and deforestation on the health outcomes, hospitalization, and vital statistics in the tropical rainforest areas? 2. What are the methods and data sources used for this assessment?	All individuals	Health impacts of wildfires and deforestation	All the areas located in the tropical rainforests

Step 2: Identifying relevant studies

Data sources

The search for scientific articles were conducted on August 18, 2023, across several databases: (1) Nursing Database (BDENF – Enfermagem), (2) National Bibliography in Argentine Health Sciences (BINACIS), (3) Coleciona SUS, (4) Desastres, (5) EconLit, (6) Embase, (7) Latin American and Caribbean Literature in Health Sciences (Lilacs), (8) Literature in Health Sciences from Caribbean countries (MedCaribe), (9) MEDLINE, (10) MEDLINE/PubMed, (11) Virtual Health Library of the Ministry of Health of Peru (MINSAPERU), (12) Literature from the Pan American Health Organization Headquarters Library (PAHO-IRIS), (13) Health Documentation Network in Mozambique (RDSM), (14) Recursos Multimídia, (15) Scopus, (16) Western Pacific Region Index Medicus (WPRIM). Access to Scopus database will be via the Capes Platform, while the databases corresponding to the previous identification number: (1), (2), (3), (4), (7), (8), (9), (11), (12), (13), (14), and (16) are available via the Virtual Health Library platform (Biblioteca Virtual da Saúde in Portuguese). To strengthen this review, we will also perform a manual search of the references in the included studies.

Table 2. Search terms by topics

1. "Wildfires"[MeSH Terms] OR "Deforestation"[All Fields]
2. 'All categories of human diseases' OR "Vital Statistics"[MeSH Terms] OR "Patient Care"[MeSH Terms]
3. "Rainforest"[MeSH Terms] OR 'All country names with tropical rainforest'
4. (1) AND (2) AND (3)

Note: The complete list of terms used can be found in the Appendix I.

Search strategy

The search strategy will be defined for each database, following the inclusion and exclusion criteria. The search terms were used according to the Medical Subject Headings (MeSH) and the respective Entry Terms. The expression terms were categorized into three broad aspects according to Table 2: (i) the exposure, including the wildfires and the deforestation terms, (ii) a comprehensive list of diseases, hospitalization, vital statistics terms, and (iii) tropical rainforest areas, including a list of countries with tropical rainforests. The countries that harbour tropical rainforests were selected according to two maps [45] [9]. The expression terms will be combined with the Boolean operators 'AND' and 'OR' in the refinement. The complete search terms in every database are in the Appendix I. In the non-PubMed indexing databases, we utilized Emtree (for searching in Embase) and Descritores em Ciências da Saúde (DeCS) (for searching in the Virtual Health Library platform). Additionally, we used jargon in the search terms to ensure the inclusion of relevant local studies.

Step 3: Study selection

To ensure consistent evaluation of the literature, a two-stage screening process was employed by two reviewers. This process involved initial screening of titles and abstracts, followed by a more in-depth review of full texts. Regarding any disagreements among the authors, they were resolved either through consensus or by the decision of one or two additional authors.

The process will be registered in a flowchart of the review process according to the PRISMA-ScR [43]. All studies were exported to the Rayyan Qatar Computing Research Institute (Rayyan®), and then deduplicated by one reviewer. The partial results of the text screening are available in Appendix II.

Inclusion criteria

To determine and choose pertinent publications concerning the topic, the subsequent inclusion criteria will be applied: (i) quantitative studies from database inception, such as correlational, ecological,

1
2
3 cohort, experimental, and cross-sectional studies, (ii) any individual or population groups exposed to
4 wildfires, wildfire smoke or deforestation regardless of the exposure duration, (iii) any disease,
5 hospitalization, or vital statistics, considered here as birth, death rate, and life expectancy, (iv) self-
6 reported health condition. Only studies written in English, French, Portuguese and Spanish will be
7 considered for inclusion.
8
9

10 11 12 *Exclusion criteria*

13
14 Studies will be excluded according to the following criteria: (i) theoretical studies; literature review
15 (e.g., scoping review and systematic review), letter and editorials; (ii) qualitative studies (interviews,
16 case studies etc.); (iii) environmental change only (e.g., extinction of wildlife, mosquitoes' habitats);
17 (iv) air pollution only (e.g., air pollution from factories, mines, vehicles, without any relation to
18 wildfires); (v) indoor fire; (vi) we will exclude studies solely focusing on health inequalities according
19 to PROGRESS Plus; and (vii) studies in which the exposed population is entirely outside the tropical
20 area, as delimited by the Tropic of Cancer and the Tropic of Capricorn.
21
22

23
24 The expansive nature of this review, encompassing diverse outcomes, countries, and databases,
25 necessitates a streamlined approach. To ensure a comprehensive yet efficient exploration of the
26 literature within the constraints of time and resources, we have opted to focus on quantitative studies.
27 Quantitative studies often provide a more readily comparable data set, facilitating the data extraction
28 and the synthesis of the existing research landscape in this complex field. Additionally, the exclusion
29 of the grey literature also relies on the constraints of time and resources.
30
31

32 33 34 *Step 4: Charting the data*

35
36 The data of interest will be extracted with the data extraction tables and by filling out the data
37 extraction form (in the Appendix III) in Microsoft Excel. During the pilot stage, two reviewers will
38 independently conduct the task. Afterward, one reviewer will proceed, while the work will be
39 reviewed by a second reviewer for quality assurance. The results will be categorised according to the
40 review questions and charted in an iterative process, allowing the reviewers to continuously update
41 these charts when additional unforeseen data are encountered. The data extraction table will be
42 developed and tested, containing variables on the study reference (year of publication, author, journal,
43 full title), intervention type, exposure, and data source (e.g., country, origin of the exposure data
44 source), methods and findings (study design and modelling, health outcome, control, and treated
45 group, point estimate, and causal identification strategy, lag between exposure and the health
46 consequences and limitations of the study.
47
48
49
50
51
52
53
54
55
56
57
58

59 60 *Step 5: Collating, summarising and reporting the results*

1
2
3 All gathered data will be displayed in either tabular or diagrammatic formats to visually summarise
4 the outcomes of the studies. Initially, a table containing comprehensive information about the selected
5 papers will be provided, such as the number of studies, study design, exposure assessment (temporal
6 and spatial scale, and data sources), statistical methods (statistical models and identification
7 strategies), characteristics of study populations, and the countries where the studies were conducted.
8 The data will be categorized separately for wildfires and deforestation. Different tables will be used
9 to describe the detailed methods and data sources, followed by tables focused on findings and their
10 subgroups. In case of studies investigating both wildfire and deforestation, we will summarize the
11 data sources and methods used for the combined analysis and compare their effects on the outcomes.
12 Therefore, we will synthesize the crude and adjusted effects for both analyses if available. These
13 results will be meticulously presented, for instance, in tabular format to underscore the collaborative
14 analysis, as wildfires and deforestation share common contributing factors. Finally, we will consider
15 the overall implications of the results to ensure that the scoping review will provide relevant answers
16 to the two main research questions previously posed.

27 ***Patient and public involvement***

28 None.

32 **ETHICS AND DISSEMINATION**

33 The study is exempt from ethics review as it is meta-research and utilizes published, deidentified
34 secondary data sources. The submission of results for publication in a peer-reviewed journal and
35 presentation at scientific and policymakers' conferences is expected.

42 **DISCUSSION**

43 The resulting scoping review will offer novel insights by synthesizing a wide array of health outcomes
44 associated with wildfires and deforestation. It will elucidate the methodologies and data sources
45 utilized in existing literature to assess the impact of these phenomena on public health. Moreover, the
46 review will provide policymakers with actionable recommendations derived from studies addressing
47 the health effects of wildfires and deforestation, including considerations of magnitude and temporal
48 lag between exposure and outcome.

49 While the scoping review will offer valuable insights, it is important to acknowledge that it may
50 encounter certain limitations. The level of detail in the map defining the tropical rainforest biome will
51 significantly influence which studies are included in the final selection. This can lead to the

1
2
3 unintended exclusion or inclusion of relevant research. The exclusion of the grey literature is
4 contingent upon limitations in both time and resources available for the study. It often contains
5 valuable insights and data that may not be found in traditional academic sources, potentially resulting
6 in an incomplete understanding of the topic under investigation. Additionally, the scoping review will
7 not conduct critical appraisal. This means they cannot assess the quality of included studies,
8 potentially incorporating biased or flawed research. Consequently, drawing definitive conclusions
9 about the effectiveness of interventions or pinpointing areas needing strong future studies becomes
10 difficult. While valuable for initial exploration, these limitations necessitate cautious interpretation
11 of the findings.
12
13
14
15
16
17
18
19
20
21
22
23
24
25

26 **Contributors**

27 G.C. is the primary and corresponding author and was responsible for the first and all subsequent
28 drafts of this scoping review protocol. Study conception: J.F.S.F, P.J.C., J.O., S.V.K., L.E., R.F.S.A.,
29 G.F.S., M.L.B. Designed the search strategy: J.P., P.B.R., V.W., N.S.G., M.S. Data search: G.C., J.P.,
30 N.S.G., M.S., E.M.C.N. Text screening: G.C., T.C. Geographical map: G.C., D.J.D.N. All authors
31 participated in discussions on the study design and critically revised drafts for improvements.
32
33

34 **Competing interests**

35 None.
36
37

38 **Funding**

39 This research was funded by the NIHR (NIHR134801) using UK aid from the UK Government to
40 support global health research and by the Wellcome Trust grant (226306/Z/22/Z) awarded to the
41 CIDACS Climate and Environmental Platform (CIDACS-Clima). The views expressed in this
42 publication are those of the author(s) and not necessarily those of the NIHR or the UK government.
43 JO, MS, VW and SVK are employed by the MRC/CSO Social and Public Health Sciences Unit,
44 University of Glasgow, and supported by the Medical Research Council [grant numbers
45 MC_UU_00022/2; MC_UU_00022/4; and Chief Scientist Office [grant numbers SPHSU17;
46 SPHSU19]. The researchers were independent of the funders; the funders had no role in the study
47 design, data collection, analysis and interpretation of data, the decision to publish, or the preparation
48 of the manuscript.
49
50
51
52
53

54 **References**

- 55
56
57 [1] P. W. Ellis, T. Gopalakrishna, R. C. Goodman, F. E. Putz, A. Roopsind, P. M. Umunay, J. Zalman, E.
58 A. Ellis, M. Karen, T. G. Gregoire and B. W. Griscom, "Reduced-impact logging for climate change
59
60

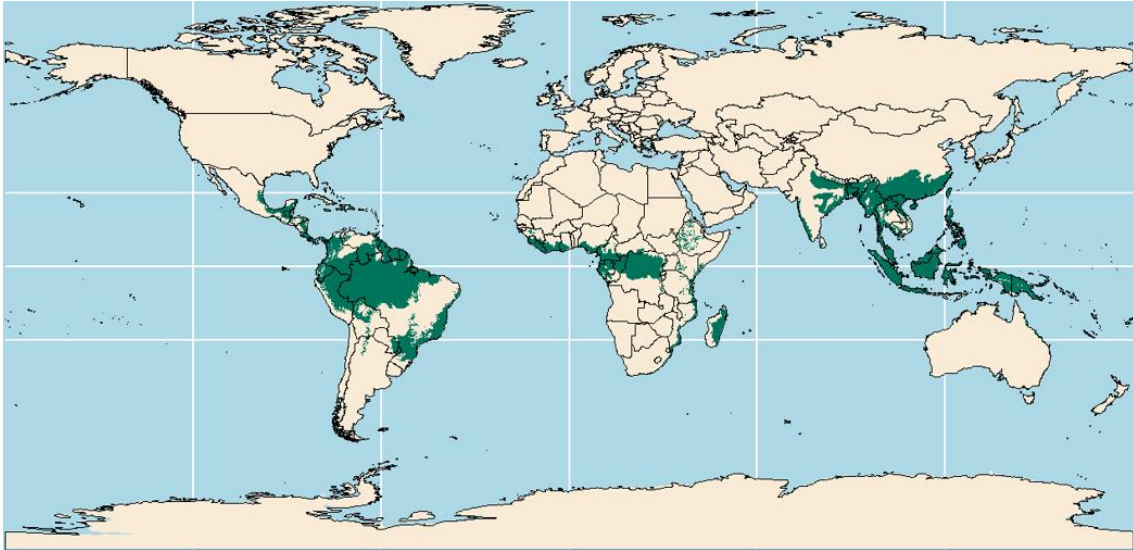
- mitigation (RIL-C) can halve selective logging emissions from tropical forests,” *Forest Ecology and Management*, vol. 438, 2019.
- [2] L. Ying, H. Cheng, Z. Shen, P. Guan, C. Luo and X. Peng, “Relative humidity and agricultural activities dominate wildfire ignitions in Yunnan, Southwest China: Patterns, thresholds, and implications,” *Agricultural and Forest Meteorology*, vol. 307, 2021.
- [3] S. M. Hartinger, M. Yglesias-González, L. Blanco-Villafuerte, Y. K. Palmeiro-Silva, A. G. Lescano, A. Stewart-Ibarra, ... and M. Romanello, “The 2022 South America report of The Lancet Countdown on health and climate change: trust the science. Now that we know, we must act.,” *The Lancet Regional Health–Americas*, vol. 20, 2023.
- [4] C. Y. Shimamoto, A. A. Padial, C. M. Rosa and M. C. M. Marques, “Restoration of ecosystem services in tropical forests: A global meta-analysis,” *Plos One*, vol. 13(12), 2018.
- [5] D. Ellison, M. N. Futter and K. Bishop, “On the forest cover–water yield debate: from demand- to supply-sind thinking,” *Global Change Biology*, vol. 18, 2012.
- [6] F. B. F. Silvio, K. M. P. M. B. Ferraz, C. C. Cassiano, P. H. S. Brancalion, D. T. A. d. Luz, T. N. Azevedo, L. R. Tambosi and J. P. Metzger, “How good are tropical forest patches for ecosystem services?,” *Landscape Ecology*, vol. 29, 2014.
- [7] J. H. Ellwanger, B. Kulmann-Leal, V. L. Kaminski, J. Valverde-Villegas, A. B. G. VEIGA, F. R. Spilki, ... and J. A. B. Chies, “Beyond diversity loss and climate change: Impacts of Amazon deforestation on infectious diseases and public health,” *Anais da Academia Brasileira de Ciências*, vol. 92.
- [8] C. Vera, J. Baez, M. Douglas, C. B. Emmanuel, J. Marengo, J. Meitin, M. Nicolini, J. Nogues-Paegle, J. Paegle, O. Penalba, P. Salio, C. Saulo, M. A. Silva Dias, P. Silva Dias and E. Zipser, “The South American Low-Level Jet Experiment,” *Bulletin of the American Meteorological Society*, vol. 87, 2006.
- [9] D. M. Olson, E. Dinerstein, N. D. Wikramanayake, ... and K. Kassem, “Terrestrial ecoregions of the world: A new map of life on Earth,” *BioScience*, vol. 51, no. 11, pp. 933-938, 2001.
- [10] P. M. Lemieux, C. C. Lutes and D. A. Santoianni, “Emissions of organic air toxics from open burning: a comprehensive review,” *Progress in energy and combustion science*, vol. 30, no. 1, 2004.
- [11] R. Xu, P. Yu, M. J. Abramson, F. H. Johnston, J. M. Samet, M. L. Bell, ... and Y. Guo, “Wildfires, global climate change, and human health,” *New England Journal of Medicine*, vol. 383, no. 22, pp. 2173-2181, 2020.
- [12] D. Da Mata and M. Dotta, “Commodity booms and the environment,” SSRN 3900793, 2021.
- [13] P. Dasgupta, *The economics of biodiversity: the Dasgupta review*, Hm Treasury, 2021.
- [14] J. Assunção, C. Gandour and R. Rocha, “Deforestation slowdown in the Brazilian Amazon: prices or policies?,” *Environment and Development Economics*, vol. 20, pp. 697-722, 2015.
- [15] Centre for Research on the Epidemiology of Disasters, United Nations Office for Disaster Risk Reduction, “The human cost of disasters: an overview of the last 20 years (2000-2019),” 2020.
- [16] M. Adámek, Z. Jankovská, V. Hadincová, E. Kula and J. Wild , “Drivers of forest fire occurrence in the cultural landscape of Central Europe,” *Landscape Ecology*, vol. 33, p. 2031–2045, 2018.

- 1
2
3 [17] K. Thonicke, S. Venevsky, S. Sitch and W. Cramer, "The Role of Fire Disturbance for Global
4 Vegetation Dynamics: Coupling Fire into a," *Global Ecology and Biogeography*, vol. 10, pp. 661-677,
5 2001.
6
7 [18] C. Black and et al, "Wildfire smoke exposure and human health: Significant gaps in research for a
8 growing public health issue," *Environmental toxicology and pharmacology*, vol. 55, pp. 186-195, 2017.
9
10 [19] R. Rocha and A. A. Sant'Anna, "Winds of fire and smoke: Air pollution and health in the Brazilian
11 Amazon," *World Development*, vol. 151, p. 105722, 2022.
12
13 [20] E. Grant and J. D. Runkle, "Long-term health effects of wildfire exposure: a scoping review," *The
14 Journal of Climate Change and Health*, vol. 6, p. 100110, 2022.
15
16 [21] S. C. D. C. Xavier, A. L. R. Roque, V. D. S. Lima, K. J. L. Monteiro, J. C. R. Otaviano, L. F. C.
17 Ferreira da Silva and A. M. Jansen, "Lower richness of small wild mammal species and Chagas disease
18 risk," *PLoS neglected tropical diseases*, vol. 6, no. 5, p. e1647.
19
20 [22] D. Lawrence and K. Vandecar, "Effects of tropical deforestation on climate and agriculture," *Nature
21 climate change*, vol. 5, no. 1, pp. 27-36, 2015.
22
23 [23] P. Alliance, "Effects of Deforestation," [Online]. Available: [https://pachamama.org/effects-of-](https://pachamama.org/effects-of-deforestation)
24 deforestation. [Accessed 05 Mar 2024].
25
26 [24] B. F. A. d. Oliveira, M. J. Bottino, P. Nobre and C. A. Nobre, "Deforestation and climate change are
27 projected to increase heat stress risk in the Brazilian Amazon," *COMMUNICATIONS EARTH &
28 ENVIRONMENT*, 2021.
29
30 [25] R. Becerril-Piña and C. A. Mastachi-Loza, "Desertification: Causes and Countermeasures," in *Life on
31 land*, Springer, 2020.
32
33 [26] E. Nanjappan, E. Sullo, S. Shrestha, S. Thomas and E. Nouvet, "Californian Wildfires and Associated
34 Human Health Outcomes: An Epidemiological Scoping Review," *International Journal of Trend in
35 Scientific Research and Development*, vol. 5, no. 5, pp. 944-953, 2021.
36
37 [27] P. To, E. Eboeime and V. I. Agyapong, "The impact of wildfires on mental health: a scoping review,"
38 *Behavioral Sciences*, vol. 11, no. 9, p. 126, 2021.
39
40 [28] C. C. Melton, C. M. Fries, R. M. Smith and L. R. Mason, "Wildfires and Older Adults: A Scoping
41 Review of Impacts, Risks, and Interventions," *International journal of environmental research and
42 public health*, vol. 20, no. 13, p. 6252, 2023.
43
44 [29] C. E. Reid, M. Brauer, F. H. Johnston, M. Jerrett, J. R. Balmes and C. T. Elliott, "Critical review of
45 health impacts of wildfire smoke exposure," *Environmental health perspectives*, vol. 124, no. 9, pp.
46 1334-1343, 2016.
47
48 [30] T. M. Davey and L. A. Selvey, "Relationship between Land Use/Land-Use Change and Human Health
49 in Australia: A Scoping Study," *International Journal of Environmental Research and Public Health*,
50 vol. 17, 2020.
51
52 [31] M. Mastel, A. Bussalleu, V. A. Paz-Soldán, G. Salmón-Mulanovich, A. Valdés-Velásquez and S. M.
53 Hartinger, "Critical linkages between land use change and human health in the Amazon region: A
54 scoping review," *PloS one*, vol. 13, no. 6, p. e0196414, 2018.
55
56 [32] R. Leichenko and J. A. Silva, "Climate change and poverty: vulnerability, impacts, and alleviation
57 strategies," *WIREs Climate Change*, vol. 5, 2014.
58
59
60

- 1
2
3 [33] S. Hallegatte, M. Fay and E. B. Barbier, "Poverty and climate change: introduction," *Environment and*
4 *Development Economics*, vol. 23, 2018.
5
6 [34] R. Mendelsohn, A. Dinar and L. Williams, "The distributional impact of climate change on rich and
7 poor countries," *Environment and Development Economics*, vol. 11, pp. 159-178, 2006.
8
9 [35] R. Davis, G. R. McGregor and K. B. Enfield, "Humidity: A review and primer on atmospheric moisture
10 and human health," *Environmental research*, vol. 144, pp. 106-116, 2016.
11
12 [36] J. Gao, Y. Sun, Y. Lu and L. Li, "Impact of ambient humidity on child health: a systematic review,"
13 *PloS one*, vol. 9, no. 12, p. e112508, 2014.
14
15 [37] M. Osborne, "Wildfires Reached a Five-Year High in the Brazilian Amazon," *Smithsonian Magazine*, 9
16 September 2022. [Online]. Available: [https://www.smithsonianmag.com/smart-news/wildfires-reached-](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/)
17 [a-five-year-high-in-the-brazilian-amazon-180980719/](https://www.smithsonianmag.com/smart-news/wildfires-reached-a-five-year-high-in-the-brazilian-amazon-180980719/). [Accessed 31 October 2023].
18
19 [38] G. Alecrim, "Número de queimadas na Amazônia em 2022 supera 2021, mas é inferior ao recorde de
20 2004," *CNN Brasil*, 20 September 2022. [Online]. Available:
21 [https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004)
22 [mas-e-inferior-ao-recorde-de-2004](https://www.cnnbrasil.com.br/nacional/numero-de-queimadas-na-amazonia-em-2022-supera-2021-mas-e-inferior-ao-recorde-de-2004). [Accessed 2023 October 31].
23
24 [39] N. Kshetri, D. C. Rojas Torres, H. Besada and M. A. Moros Ochoa, "Big data as a tool to monitor and
25 deter environmental offenders in the global south: A multiple case study," *Sustainability*, vol. 12, no.
26 24, p. 10436, 2020.
27
28 [40] M. D. Peters, C. M. Godfrey, H. Khalil, P. McInerney, D. Parker and C. B. Soares, "Guidance for
29 conducting systematic scoping reviews," *JBI Evidence Implementation*, vol. 13, no. 3, pp. 141-146,
30 2015.
31
32 [41] H. Arksey and L. O'Malley, "Scoping studies: towards a methodological framework," *International*
33 *journal of social research methodology*, vol. 8, no. 1, pp. 19-32, 2005.
34
35 [42] D. Levac, H. Colquhoun and K. K. O'Brien, "Scoping studies: advancing the methodology,"
36 *Implementation science*, vol. 5, pp. 1-9, 2010.
37
38 [43] A. C. Tricco, E. Lillie, W. Zarin, K. K. O'Brien, H. Colquhoun, D. Levac, ... and S. E. Straus,
39 "PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation," *Annals of*
40 *internal medicine*, vol. 169, no. 7, pp. 467-473, 2018.
41
42 [44] G. Casais, N. S. Guimarães, T. R. Cortes, J. Pescarini, P. R. d. Magalhães, V. Wells, J. F. d. Sousa
43 Filho, D. J. D. Neves, M. Shimonovich, J. R. Olsen, E. M. d. Carvalho Neto, P. J. Cooper, S. V.
44 Katikireddi, R. Andrade, G. F. d. Santos and M. L. Barreto, "Wildfire, deforestation, and health in
45 tropical rainforest: a scoping review protocol," 2023. [Online]. Available: <https://osf.io/pnqc7/>.
46
47 [45] Nasa Earth Observatory, "Rainforest," [Online]. Available:
48 <https://earthobservatory.nasa.gov/biome/biorainforest.php>.
49
50
51
52
53
54

FIGURE TITLE

Figure 1. Geolocation of all rainforest areas in the world



1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

For peer review only

Appendices

Appendix I – Literature search

MEDLINE/PubMed

("wildfires"[MeSH Terms] OR "wildfires"[Text Word] OR "Wildfire"[All Fields] OR "Wildland Fires"[All Fields] OR "Brush Fires"[All Fields] OR "Brush Fire"[All Fields] OR "Forest Fires"[All Fields] OR "fire forest"[All Fields] OR "fires forest"[All Fields] OR "Forest Fire"[All Fields] OR "Wild Fires"[All Fields] OR "Wild Fire"[All Fields] OR "Fires"[MeSH Terms] OR "Fires"[Text Word] OR "Fire"[All Fields] OR "fire outbreaks"[All Fields] OR "Deforestation"[All Fields] OR "Grassfire"[All Fields] OR "prescribed burn"[All Fields] OR "prescribed fire"[All Fields]) AND ("Tropical Climate"[MeSH Terms] OR "Tropical Climate"[Text Word] OR "climate tropical"[All Fields] OR "climates tropical"[All Fields] OR "Tropical Climates"[All Fields] OR "Rainforest"[MeSH Terms] OR "Rainforest"[Text Word] OR "Rainforests"[All Fields] OR "Rain Forest"[All Fields] OR "forest rain"[All Fields] OR "Rain Forests"[All Fields] OR "Tropical Rainforest"[All Fields] OR "rainforest tropical"[All Fields] OR "rainforests tropical"[All Fields] OR "Tropical Rainforests"[All Fields] OR "Amazon"[All Fields] OR "Brazil"[All Fields] OR "Argentina"[All Fields] OR "Peru"[All Fields] OR "Ecuador"[All Fields] OR "Bolivia"[All Fields] OR "Colombia"[All Fields] OR "Venezuela"[All Fields] OR "Guyana"[All Fields] OR "Suriname"[All Fields] OR "French Guiana"[All Fields] OR "Paraguay"[All Fields] OR "Panama"[All Fields] OR "El Salvador"[All Fields] OR "Belize"[All Fields] OR "Costa Rica"[All Fields] OR "El Salvador"[All Fields] OR "Guatemala"[All Fields] OR "Honduras"[All Fields] OR "Nicaragua"[All Fields] OR "Panama"[All Fields] OR "Anguilla"[All Fields] OR "Antigua and Barbuda"[All Fields] OR "Aruba"[All Fields] OR "Bahamas"[All Fields] OR "Barbados"[All Fields] OR "British Virgin Islands"[All Fields] OR "Cayman Islands"[All Fields] OR "Cuba"[All Fields] OR "Dominica"[All Fields] OR "Dominican Republic"[All Fields] OR "Grenada"[All Fields] OR "Guadeloupe"[All Fields] OR "Haiti"[All Fields] OR "Jamaica"[All Fields] OR "Martinique"[All Fields] OR "Montserrat"[All Fields] OR "Netherlands Antilles"[All Fields] OR "Puerto Rico"[All Fields] OR "Saint Barthelemy"[All Fields] OR "Saint Kits and Nevis"[All Fields] OR "Saint Lucia"[All Fields] OR "Saint Martin"[All Fields] OR "Saint Vincent and the Grenadines"[All Fields] OR "Trinidad and Tobago"[All Fields] OR "United States Virgin Islands"[All Fields] OR "Mexico"[All Fields] OR "Hawaii"[All Fields] OR "Cape Verde"[All Fields] OR "Sao Tome and Principe"[All Fields] OR "Gambia"[All Fields] OR "Senegal"[All Fields] OR "Guinea-Bissau"[All Fields] OR "Guinea"[All Fields] OR "Sierra Leone"[All Fields] OR "Liberia"[All Fields] OR "Ivory Coast"[All Fields] OR "Ghana"[All Fields] OR "Togo"[All Fields] OR "Benin"[All Fields] OR "Nigeria"[All Fields] OR "Cameroon"[All Fields] OR "Central African Republic"[All Fields] OR "South Sudan"[All Fields] OR "Ethiopia"[All Fields] OR "Equatorial Guinea"[All Fields] OR "Gabon"[All Fields] OR "Congo"[All Fields] OR "Democratic Republic of the Congo"[All Fields] OR "Uganda"[All Fields] OR "Rwanda"[All Fields] OR "Burundi"[All Fields] OR "Kenya"[All Fields] OR "Somalia"[All Fields] OR "Tanzania"[All Fields] OR "Zambia"[All Fields] OR "Mozambique"[All Fields] OR "Madagascar"[All Fields] OR "Seychelles"[All Fields] OR "Mauritius"[All Fields] OR "Comoros"[All Fields] OR "Botswana"[All Fields] OR "Malawi"[All Fields] OR "Brunei"[All Fields] OR "Burma"[All Fields] OR "Myanmar"[All Fields] OR "Cambodia"[All Fields] OR "East Timor"[All Fields] OR

1
2
3 "Indonesia"[All Fields] OR "Laos"[All Fields] OR "Malaysia"[All Fields] OR "Philippines"[All
4 Fields] OR "Singapore"[All Fields] OR "Thailand"[All Fields] OR "Vietnam"[All Fields] OR
5 "India"[All Fields] OR "Papua New Guinea"[All Fields] OR "Australia"[All Fields] OR "Solomon
6 Islands"[All Fields] OR "Vanuatu"[All Fields] OR "New Caledonia"[All Fields]) AND
7 ("cardiovascular diseases"[MeSH Terms] OR "cardiovascular diseases"[Text Word] OR
8 "Cardiovascular Disease"[All Fields] OR "disease cardiovascular"[All Fields] OR "Major Adverse
9 Cardiac Events"[All Fields] OR "Cardiac Events"[All Fields] OR "Cardiac Event"[All Fields] OR
10 "event cardiac"[All Fields] OR "Adverse Cardiac Event"[All Fields] OR "Adverse Cardiac
11 Events"[All Fields] OR "cardiac events adverse"[All Fields] OR "chemically induced
12 disorders"[MeSH Terms] OR "chemically induced disorders"[Text Word] OR "chemically induced
13 disorders"[All Fields] OR "Chemically-Induced Disorder"[All Fields] OR "congenital, hereditary,
14 and neonatal diseases and abnormalities"[MeSH Terms] OR "congenital hereditary and neonatal
15 diseases and abnormalities"[Text Word] OR "Congenital Disorders"[All Fields] OR "disorder
16 congenital"[All Fields] OR "disorders congenital"[All Fields] OR "Neonatal Diseases and
17 Abnormalities"[All Fields] OR "Digestive System Diseases"[MeSH Terms] OR "Digestive System
18 Diseases"[Text Word] OR "Digestive System Disease"[All Fields] OR "Digestive System
19 Disorders"[All Fields] OR "Digestive System Disorder"[All Fields] OR "system disorders
20 digestive"[All Fields] OR "Hepatobiliary Disorders"[All Fields] OR "Hepatobiliary Disorder"[All
21 Fields] OR "Hepatobiliary Diseases"[All Fields] OR "Hepatobiliary Disease"[All Fields] OR
22 "Disorders of Environmental Origin"[MeSH Terms] OR "Disorders of Environmental Origin"[Text
23 Word] OR "Endocrine System Diseases"[MeSH Terms] OR "Endocrine System Diseases"[Text
24 Word] OR "disease endocrine system"[All Fields] OR "diseases endocrine system"[All Fields] OR
25 "Endocrine System Disease"[All Fields] OR "system disease endocrine"[All Fields] OR "system
26 diseases endocrine"[All Fields] OR "Endocrine Diseases"[All Fields] OR "disease endocrine"[All
27 Fields] OR "diseases endocrine"[All Fields] OR "Endocrine Disease"[All Fields] OR "Diseases of
28 Endocrine System"[All Fields] OR "Eye Diseases"[MeSH Terms] OR "Eye Diseases"[Text Word]
29 OR "Eye Disease"[All Fields] OR "Eye Disorders"[All Fields] OR "Eye Disorder"[All Fields] OR
30 "Hemic and Lymphatic Diseases"[MeSH Terms] OR "Hemic and Lymphatic Diseases"[Text Word]
31 OR "Blood and Lymphatic System Disorders"[All Fields] OR "Immune System Diseases"[MeSH
32 Terms] OR "Immune System Diseases"[Text Word] OR "disease immune system"[All Fields] OR
33 "Immune System Disease"[All Fields] OR "Immunologic Diseases"[All Fields] OR "disease
34 immunologic"[All Fields] OR "Immunologic Disease"[All Fields] OR "Immunological
35 Diseases"[All Fields] OR "disease immunological"[All Fields] OR "Immunological Disease"[All
36 Fields] OR "Immune Diseases"[All Fields] OR "disease immune"[All Fields] OR "Immune
37 Disease"[All Fields] OR "Diseases of Immune System"[All Fields] OR "Immune Disorders"[All
38 Fields] OR "Immune Disorder"[All Fields] OR "Immune System Disorders"[All Fields] OR
39 "disorder immune system"[All Fields] OR "Immune System Disorder"[All Fields] OR
40 "Infections"[MeSH Terms] OR "Infections"[Text Word] OR "Infection and Infestation"[All Fields]
41 OR "Infestation and Infection"[All Fields] OR "Infections and Infestations"[All Fields] OR
42 "Infestations and Infections"[All Fields] OR "Infection"[All Fields] OR "Musculoskeletal
43 Diseases"[MeSH Terms] OR "Musculoskeletal Diseases"[Text Word] OR "Musculoskeletal
44 Disease"[All Fields] OR "Orthopedic Disorders"[All Fields] OR "Orthopedic Disorder"[All Fields]
45 OR "Neoplasms"[MeSH Terms] OR "Neoplasms"[Text Word] OR "Tumor"[All Fields] OR
46 "Neoplasm"[All Fields] OR "Tumors"[All Fields] OR "Neoplasia"[All Fields] OR "Neoplasias"[All
47 Fields] OR "Cancer"[All Fields] OR "Cancers"[All Fields] OR "Malignant Neoplasm"[All Fields]
48 OR "Malignancy"[All Fields] OR "Malignancies"[All Fields] OR "Malignant Neoplasms"[All
49 Fields] OR "neoplasm malignant"[All Fields] OR "neoplasms malignant"[All Fields] OR "Benign
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Neoplasms"[All Fields] OR "Benign Neoplasm"[All Fields] OR "neoplasms benign"[All Fields]
4 OR "neoplasm benign"[All Fields] OR "Nervous System Diseases"[MeSH Terms] OR "Nervous
5 System Diseases"[Text Word] OR "disease nervous system"[All Fields] OR "diseases nervous
6 system"[All Fields] OR "Nervous System Disease"[All Fields] OR "Neurologic Disorders"[All
7 Fields] OR "disorder neurologic"[All Fields] OR "disorders neurologic"[All Fields] OR
8 "Neurologic Disorder"[All Fields] OR "Neurological Disorders"[All Fields] OR "disorder
9 neurological"[All Fields] OR "disorders neurological"[All Fields] OR "Neurological Disorder"[All
10 Fields] OR "Nervous System Disorders"[All Fields] OR "disorder nervous system"[All Fields] OR
11 "disorders nervous system"[All Fields] OR "Nervous System Disorder"[All Fields] OR "Nutritional
12 and Metabolic Diseases"[MeSH Terms] OR "Nutritional and Metabolic Diseases"[Text Word] OR
13 "Occupational Diseases"[MeSH Terms] OR "Occupational Diseases"[Text Word] OR "disease
14 occupational"[All Fields] OR "Occupational Disease"[All Fields] OR "Occupational Illnesses"[All
15 Fields] OR "illnesses occupational"[All Fields] OR "diseases occupational"[All Fields] OR
16 "Otorhinolaryngologic Diseases"[MeSH Terms] OR "Otorhinolaryngologic Diseases"[Text Word]
17 OR "Otorhinolaryngological Disease"[All Fields] OR "Otorhinolaryngological Diseases"[All
18 Fields] OR "Otolaryngological Diseases"[All Fields] OR "diseases otolaryngological"[All Fields]
19 OR "Otolaryngological Disease"[All Fields] OR "Otorhinolaryngologic Disease"[All Fields] OR
20 "ENT Diseases"[All Fields] OR "disease ent"[All Fields] OR "diseases ent"[All Fields] OR "ENT
21 Disease"[All Fields] OR "Otolaryngologic Diseases"[All Fields] OR "disease otolaryngologic"[All
22 Fields] OR "diseases otolaryngologic"[All Fields] OR "Otolaryngologic Disease"[All Fields] OR
23 "pathological conditions, signs and symptoms"[MeSH Terms] OR "pathological conditions signs
24 and symptoms"[Text Word] OR "Respiratory Tract Diseases"[MeSH Terms] OR "Respiratory Tract
25 Diseases"[Text Word] OR "disease respiratory tract"[All Fields] OR "Respiratory Tract
26 Disease"[All Fields] OR "Respiratory Diseases"[All Fields] OR "Respiratory System Diseases"[All
27 Fields] OR "disease respiratory system"[All Fields] OR "Respiratory System Disease"[All Fields]
28 OR "Skin and Connective Tissue Diseases"[MeSH Terms] OR "Skin and Connective Tissue
29 Diseases"[Text Word] OR "Stomatognathic Diseases"[MeSH Terms] OR "Stomatognathic
30 Diseases"[Text Word] OR "Stomatognathic Disease"[All Fields] OR "Mouth and Tooth
31 Diseases"[All Fields] OR "Dental Diseases"[All Fields] OR "Dental Disease"[All Fields] OR
32 "disease dental"[All Fields] OR "diseases dental"[All Fields] OR "Urogenital Diseases"[MeSH
33 Terms] OR "Urogenital Diseases"[Text Word] OR "disease urogenital"[All Fields] OR "Urogenital
34 Disease"[All Fields] OR "Genitourinary Diseases"[All Fields] OR "disease genitourinary"[All
35 Fields] OR "Genitourinary Disease"[All Fields] OR "Wounds and Injuries"[MeSH Terms] OR
36 "Wounds and Injuries"[Text Word] OR "Injuries and Wounds"[All Fields] OR "Wounds and
37 Injury"[All Fields] OR "Injury and Wounds"[All Fields] OR "wounds injury"[All Fields] OR
38 "Trauma"[All Fields] OR "Traumas"[All Fields] OR "injuries wounds"[All Fields] OR "research
39 related injuries"[All Fields] OR "research related injuries"[All Fields] OR "Research-Related
40 Injury"[All Fields] OR "Injuries"[All Fields] OR "Injury"[All Fields] OR "Wounds"[All Fields] OR
41 "Wound"[All Fields] OR "Vital Statistics"[MeSH Terms] OR "Vital Statistics"[Text Word] OR
42 "statistics vital"[All Fields] OR "Vital Statistics Registration"[All Fields] OR "Registration of Vital
43 Statistics"[All Fields] OR "Vital Statistics Registrations"[All Fields] OR "registration vital
44 statistics"[All Fields] OR "registrations vital statistics"[All Fields] OR "Patient Care"[MeSH Terms]
45 OR "Patient Care"[Text Word] OR "care patient"[All Fields] OR "Informal care"[All Fields] OR
46 "Informal cares"[All Fields] OR "care informal"[All Fields])
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Date of search: August 18, 2023

1
2
3 Results: 2,296
4
5
6

7 Scopus

8
9 Search: ("wildfires" OR "wildfire" OR "wildland fires" OR "brush fires" OR "brush fire" OR "forest
10 fires" OR "fire forest" OR "fires forest" OR "forest fire" OR "wild fires" OR "wild fire" OR "fires"
11 OR "fire" OR "fire outbreaks" OR "deforestation" OR "grassfire" OR "prescribed burn" OR
12 "prescribed fire")AND ("tropical climate" OR "climate tropical" OR "climates tropical" OR
13 "tropical climates" OR "rainforest" OR "rainforests" OR "rain forest" OR "forest rain" OR "rain
14 forests" OR "tropical rainforest" OR "rainforest tropical" OR "rainforests tropical" OR "tropical
15 rainforests" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia"
16 OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR
17 "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR
18 "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and
19 Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman
20 Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe"
21 OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR
22 "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint
23 Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and Tobago" OR "United States
24 Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR
25 "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR
26 "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central
27 African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR
28 "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR
29 "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR "Mozambique" OR "Madagascar" OR
30 "Seychelles" OR "Mauritius" OR "Comoros" OR "Botswana" OR "Malawi" OR "Brunei" OR
31 "Burma" OR "Myanmar" OR "Cambodia" OR "East Timor" OR "Indonesia" OR "Laos" OR
32 "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam" OR "India" OR
33 "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR "Vanuatu" OR "New Caledonia")
34 AND ("cardiovascular diseases" OR "Cardiovascular Disease" OR "disease cardiovascular" OR
35 "Major Adverse Cardiac Events" OR "Cardiac Events" OR "Cardiac Event" OR "event cardiac" OR
36 "Adverse Cardiac Event" OR "Adverse Cardiac Events" OR "cardiac events adverse" OR
37 "chemically induced disorders" OR "chemically induced disorders" OR "Chemically-Induced
38 Disorder" OR "congenital, hereditary, and neonatal diseases and abnormalities" OR "Congenital
39 Disorders" OR "disorder congenital" OR "disorders congenital" OR "Neonatal Diseases and
40 Abnormalities" OR "Digestive System Diseases" OR "Digestive System Disease" OR "Digestive
41 System Disorders" OR "Digestive System Disorder" OR "system disorders digestive" OR
42 "Hepatobiliary Disorders" OR "Hepatobiliary Disorder" OR "Hepatobiliary Diseases" OR
43 "Hepatobiliary Disease" OR "Disorders of Environmental Origin"OR "Endocrine System Diseases"
44 OR "disease endocrine system" OR "diseases endocrine system" OR "Endocrine System Disease"
45 OR "system disease endocrine" OR "system diseases endocrine" OR "Endocrine Diseases" OR
46 "disease endocrine" OR "diseases endocrine" OR "Endocrine Disease" OR "Diseases of Endocrine
47 System" OR "Eye Diseases" OR "Eye Disease" OR "Eye Disorders" OR "Eye Disorder" OR
48 "Hemic and Lymphatic Diseases" OR "Blood and Lymphatic System Disorders" OR "Immune
49 System Diseases" OR "disease immune system" OR "Immune System Disease" OR "Immunologic
50 Diseases" OR "disease immunologic" OR "Immunologic Disease" OR "Immunological Diseases"

OR "disease immunological" OR "Immunological Disease" OR "Immune Diseases" OR "disease immune" OR "Immune Disease" OR "Diseases of Immune System" OR "Immune Disorders" OR "Immune Disorder" OR "Immune System Disorders" OR "disorder immune system" OR "Immune System Disorder" OR "Infections" OR "Infection and Infestation" OR "Infestation and Infection" OR "Infections and Infestations" OR "Infestations and Infections" OR "Infection" OR "Musculoskeletal Diseases" OR "Musculoskeletal Disease" OR "Orthopedic Disorders" OR "Orthopedic Disorder" OR "Neoplasms" OR "Tumor" OR "Neoplasm" OR "Tumors" OR "Neoplasia" OR "Neoplasias" OR "Cancer" OR "Cancers" OR "Malignant Neoplasm" OR "Malignancy" OR "Malignancies" OR "Malignant Neoplasms" OR "neoplasm malignant" OR "neoplasms malignant" OR "Benign Neoplasms" OR "Benign Neoplasm" OR "neoplasms benign" OR "neoplasm benign" OR "Nervous System Diseases" OR "disease nervous system" OR "diseases nervous system" OR "Nervous System Disease" OR "Neurologic Disorders" OR "disorder neurologic" OR "disorders neurologic" OR "Neurologic Disorder" OR "Neurological Disorders" OR "disorder neurological" OR "disorders neurological" OR "Neurological Disorder" OR "Nervous System Disorders" OR "disorder nervous system" OR "disorders nervous system" OR "Nervous System Disorder" OR "Nutritional and Metabolic Diseases" OR "Occupational Diseases" OR "disease occupational" OR "Occupational Disease" OR "Occupational Illnesses" OR "illnesses occupational" OR "diseases occupational" OR "Otorhinolaryngologic Diseases" OR "Otorhinolaryngological Disease" OR "Otorhinolaryngological Diseases" OR "Otolaryngological Diseases" OR "diseases otolaryngological" OR "Otolaryngological Disease" OR "Otorhinolaryngologic Disease" OR "ENT Diseases" OR "disease ent" OR "diseases ent" OR "ENT Disease" OR "Otolaryngologic Diseases" OR "disease otolaryngologic" OR "diseases otolaryngologic" OR "Otolaryngologic Disease" OR "pathological conditions, signs and symptoms" OR "Respiratory Tract Diseases" OR "disease respiratory tract" OR "Respiratory Tract Disease" OR "Respiratory Diseases" OR "Respiratory System Diseases" OR "disease respiratory system" OR "Respiratory System Disease" OR "Skin and Connective Tissue Diseases" OR "Stomatognathic Diseases" OR "Stomatognathic Disease" OR "Mouth and Tooth Diseases" OR "Dental Diseases" OR "Dental Disease" OR "disease dental" OR "diseases dental" OR "Urogenital Diseases" OR "disease urogenital" OR "Urogenital Disease" OR "Genitourinary Diseases" OR "disease genitourinary" OR "Genitourinary Disease" OR "Wounds and Injuries" OR "Injuries and Wounds" OR "Wounds and Injury" OR "Injury and Wounds" OR "wounds injury" OR "Trauma" OR "Traumas" OR "injuries wounds" OR "research related injuries" OR "research related injuries" OR "Research-Related Injury" OR "Injuries" OR "Injury" OR "Wounds" OR "Wound" OR "Vital Statistics" OR "statistics vital" OR "Vital Statistics Registration" OR "Registration of Vital Statistics" OR "Vital Statistics Registrations" OR "registration vital statistics" OR "registrations vital statistics" OR "Patient Care" OR "care patient" OR "Informal care" OR "Informal cares" OR "care informal")

Date of search: August 18, 2023

Results: 1,604

Biblioteca Virtual em Saúde

1
2
3 #1 "Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires"
4 OR "Incendios"

5
6 #2 "Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR "Rainforest" OR "Bosque
7 Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR
8 "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR
9 "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR
10 "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba"
11 OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR
12 "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica"
13 OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint
14 Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and
15 the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR
16 "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-
17 Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo"
18 OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR
19 "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the
20 Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR
21 "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros"
22 OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East
23 Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand"
24 OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR
25 "Vanuatu" OR "New Caledonia"

26
27 #3 "Doenças Cardiovasculares" OR "Cardiovascular Diseases" OR "Enfermedades
28 Cardiovasculares" OR "Distúrbios Induzidos Quimicamente" OR "Chemically-Induced Disorders"
29 OR "Trastornos Químicamente Inducidos" OR "Doenças e Anormalidades Congênicas, Hereditárias
30 e Neonatais" OR "Congenital, Hereditary, and Neonatal Diseases and Abnormalities" OR
31 "Enfermedades y Anomalías Neonatales Congénitas y Hereditarias" OR "Doenças do Sistema
32 Digestório" OR "Digestive System Diseases" OR "Transtornos de Origem Ambiental" OR
33 "Disorders of Environmental Origin" OR "Trastornos de Origen Ambiental" OR "Doenças do
34 Sistema Endócrino" OR "Endocrine System Diseases" OR "Enfermedades del Sistema Endocrino"
35 OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças Sanguíneas e Linfáticas" OR "Hemic and
36 Lymphatic Diseases" OR "Enfermedades Hematológicas y Linfáticas" OR "Doenças do Sistema
37 Imunitário" OR "Immune System Diseases" OR "Enfermedades del Sistema Inmune" OR
38 "Infecções" OR "Infections" OR "Infecciones" OR "Doenças Musculoesqueléticas" OR
39 "Musculoskeletal Diseases" OR "Enfermedades Musculoesqueléticas" OR "Neoplasias" OR
40 "Neoplasms" OR "Doenças do Sistema Nervoso" OR "Nervous System Diseases" OR
41 "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais e Metabólicas" OR "Nutritional
42 and Metabolic Diseases" OR "Enfermedades Nutricionales y Metabólicas OR Doenças
43 Profissionais" OR "Occupational Diseases" OR "Enfermedades Profesionales" OR
44 "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR "Enfermedades
45 Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR "Pathological
46 Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças
47 Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças
48 da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades
49 de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases"
50 OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

"Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente"

Detailed search:

("Incêndios Florestais" OR "Wildfires" OR "Incendios Forestales" OR "Incêndios" OR "Fires" OR "Incendios") AND ("Clima Tropical" OR "Tropical Climate" OR "Floresta Úmida" OR "Rainforest" OR "Bosque Lluvioso" OR "Amazon" OR "Brazil" OR "Argentina" OR "Peru" OR "Ecuador" OR "Bolivia" OR "Colombia" OR "Venezuela" OR "Guyana" OR "Suriname" OR "French Guiana" OR "Paraguay" OR "Panama" OR "El Salvador" OR "Belize" OR "Costa Rica" OR "El Salvador" OR "Guatemala" OR "Honduras" OR "Nicaragua" OR "Panama" OR "Anguilla" OR "Antigua and Barbuda" OR "Aruba" OR "Bahamas" OR "Barbados" OR "British Virgin Islands" OR "Cayman Islands" OR "Cuba" OR "Dominica" OR "Dominican Republic" OR "Grenada" OR "Guadeloupe" OR "Haiti" OR "Jamaica" OR "Martinique" OR "Montserrat" OR "Netherlands Antilles" OR "Puerto Rico" OR "Saint Barthelemy" OR "Saint Kits and Nevis" OR "Saint Lucia" OR "Saint Martin" OR "Saint Vincent and the Grenadines" OR "Trinidad and Tobago" OR "United States Virgin Islands" OR "Mexico" OR "Hawaii" OR "Cape Verde" OR "Sao Tome and Principe" OR "Gambia" OR "Senegal" OR "Guinea-Bissau" OR "Guinea" OR "Sierra Leone" OR "Liberia" OR "Ivory Coast" OR "Ghana" OR "Togo" OR "Benin" OR "Nigeria" OR "Cameroon" OR "Central African Republic" OR "South Sudan" OR "Ethiopia" OR "Equatorial Guinea" OR "Gabon" OR "Congo" OR "Democratic Republic of the Congo" OR "Uganda" OR "Rwanda" OR "Burundi" OR "Kenya" OR "Somalia" OR "Tanzania" OR "Zambia" OR "Mozambique" OR "Madagascar" OR "Seychelles" OR "Mauritius" OR "Comoros" OR "Botswana" OR "Malawi" OR "Brunei" OR "Burma" OR "Myanmar" OR "Cambodia" OR "East Timor" OR "Indonesia" OR "Laos" OR "Malaysia" OR "Philippines" OR "Singapore" OR "Thailand" OR "Vietnam" OR "India" OR "Papua New Guinea" OR "Australia" OR "Solomon Islands" OR "Vanuatu" OR "New Caledonia") AND ("Doenças Cardiovasculares" OR "Cardiovascular Diseases" OR "Enfermedades Cardiovasculares" OR "Distúrbios Induzidos Quimicamente" OR "Chemically-Induced Disorders" OR "Trastornos Químicamente Inducidos" OR "Doenças e Anormalidades Congênitas, Hereditárias e Neonatais" OR "Congenital, Hereditary, and Neonatal Diseases and Abnormalities" OR "Enfermedades y Anomalías Neonatales Congénitas y Hereditarias" OR "Doenças do Sistema Digestório" OR "Digestive System Diseases" OR "Transtornos de Origem Ambiental" OR "Disorders of Environmental Origin" OR "Trastornos de Origen Ambiental" OR "Doenças do Sistema Endócrino" OR "Endocrine System Diseases" OR "Enfermedades del Sistema Endocrino" OR "Oftalmopatias" OR "Eye Diseases" OR "Doenças Sanguíneas e Linfáticas" OR "Hemic and Lymphatic Diseases" OR "Enfermedades Hematológicas y Linfáticas" OR "Doenças do Sistema Imunitário" OR "Immune System Diseases" OR "Enfermedades del Sistema Inmune" OR "Infecções" OR "Infections" OR "Infecciones" OR "Doenças Musculoesqueléticas" OR "Musculoskeletal Diseases" OR "Enfermedades Musculoesqueléticas" OR "Neoplasias" OR "Neoplasms" OR "Doenças do Sistema Nervoso" OR "Nervous System Diseases" OR "Enfermedades del Sistema Nervioso" OR "Doenças Nutricionais e Metabólicas" OR "Nutritional and Metabolic Diseases" OR "Enfermedades Nutricionales y Metabólicas" OR "Doenças Profissionais" OR "Occupational Diseases" OR "Enfermedades Profesionales" OR "Otorrinolaringopatias" OR "Otorhinolaryngologic Diseases" OR "Enfermedades Otorrinolaringológicas" OR "Condições Patológicas, Sinais e Sintomas" OR

"Pathological Conditions, Signs and Symptoms" OR "Condiciones Patológicas, Signos y Síntomas" OR "Doenças Respiratórias" OR "Respiratory Tract Diseases" OR "Enfermedades Respiratorias" OR "Doenças da Pele e do Tecido Conjuntivo" OR "Skin and Connective Tissue Diseases" OR "Enfermedades de la Piel y Tejido Conjuntivo" OR "Doenças Estomatognáticas" OR "Stomatognathic Diseases" OR "Enfermedades Estomatognáticas" OR "Doenças Urogenitais" OR "Urogenital Diseases" OR "Enfermedades Urogenitales" OR "Ferimentos e Lesões" OR "Wounds and Injuries" OR "Heridas y Lesiones" OR "Estatísticas Vitais" OR "Vital Statistics" OR "Estadísticas Vitales" OR "Assistência ao Paciente" OR "Patient Care" OR "Atención al Paciente")

Date of search: August 18, 2023

Results: Lilacs (n = 44), Medline (n = 246), WPRIM (n = 3), BDENF – Enfermagem (n = 2), MINASPERÚ (n = 2), Recursos Multimídia (n = 2), BINACIS (n = 1), Desastres (n = 1), MedCarib (n = 1), PAHO-IRIS (n = 1), RDSM (n = 1), Coleciona SUS (n = 1).

Embase

	#4
#1 AND #2 AND #3	
	<u>4,019</u>

	#3
('wildfires'/syn OR 'fire'/syn OR 'deforestation'/syn) AND [embase]/lim	

42,804

#2

('tropical climate'/syn OR 'climate tropical' OR 'climates tropical' OR 'tropical climates' OR 'rainforest'/syn OR 'rainforests' OR 'rain forest'/syn OR 'forest rain' OR 'rain forests' OR 'tropical rainforest'/syn OR 'rainforest tropical'/syn OR 'rainforests tropical' OR 'tropical rainforests' OR 'amazon'/syn OR 'brazil'/syn OR 'argentina'/syn OR 'peru'/syn OR 'ecuador'/syn OR 'bolivia'/syn OR 'colombia'/syn OR 'venezuela'/syn OR 'guyana'/syn OR 'suriname'/syn OR 'french guiana'/syn OR 'paraguay'/syn OR 'belize'/syn OR 'costa rica'/syn OR 'el salvador'/syn OR 'guatemala'/syn OR 'honduras'/syn OR 'nicaragua'/syn OR 'panama'/syn OR 'anguilla'/syn OR 'antigua and barbuda'/syn OR 'aruba'/syn OR 'bahamas'/syn OR 'barbados'/syn OR 'british virgin islands'/syn OR 'cayman islands'/syn OR 'cuba'/syn OR 'dominica'/syn OR 'dominican republic'/syn OR 'grenada'/syn OR 'guadeloupe'/syn OR 'haiti'/syn OR 'jamaica'/syn OR 'martinique'/syn OR 'montserrat'/syn OR 'netherlands antilles'/syn OR 'puerto rico'/syn OR 'saint barthelemy'/syn OR 'saint kits and nevis' OR 'saint lucia'/syn OR 'saint martin'/syn OR 'saint vincent and the grenadines'/syn OR 'trinidad and tobago'/syn OR 'united states virgin islands'/syn OR 'mexico'/syn OR 'hawaii'/syn OR 'cape verde'/syn OR 'sao tome and principe'/syn OR 'gambia'/syn OR 'senegal'/syn OR 'guinea-bissau'/syn OR 'guinea'/syn OR 'sierra leone'/syn OR 'liberia'/syn OR 'ivory coast'/syn OR 'ghana'/syn OR 'togo'/syn OR 'benin'/syn OR 'nigeria'/syn

OR 'cameroon'/syn OR 'central african republic'/syn OR 'south sudan'/syn OR 'ethiopia'/syn
 OR 'equatorial guinea'/syn OR 'gabon'/syn OR 'congo'/syn OR 'democratic republic of the
 congo'/syn OR 'uganda'/syn OR 'rwanda'/syn OR 'burundi'/syn OR 'kenya'/syn OR 'somalia'/syn
 OR 'tanzania'/syn OR 'zambia'/syn OR 'mozambique'/syn OR 'madagascar'/syn OR 'seychelles'/syn
 OR 'mauritius'/syn OR 'comoros'/syn OR 'botswana'/syn OR 'malawi'/syn OR 'brunei'/syn
 OR 'burma'/syn OR 'myanmar'/syn OR 'cambodia'/syn OR 'east timor'/syn OR 'indonesia'/syn
 OR 'laos'/syn OR 'malaysia'/syn OR 'philippines'/syn OR 'singapore'/syn OR 'thailand'/syn
 OR 'vietnam'/syn OR 'india'/syn OR 'papua new guinea'/syn OR 'australia'/syn OR 'solomon
 islands'/syn OR 'vanuatu'/syn OR 'new caledonia'/syn) AND [embase]/lim

[4,621,441](#)

#1

('patient care'/syn OR 'vital statistics'/syn OR 'wounds and injuries'/syn OR 'urogenital tract
 disease'/syn OR 'stomatognathic diseases'/syn OR 'skin and connective tissue diseases'/syn
 OR 'respiratory tract diseases'/syn OR 'pathological conditions, signs and symptoms'/syn
 OR 'otorhinolaryngologic diseases'/syn OR 'occupational diseases'/syn OR 'nutritional and
 metabolic diseases'/syn OR 'nervous system diseases'/syn OR 'neoplasms'/syn OR 'musculoskeletal
 disease'/syn OR 'infection'/syn OR 'immune system diseases'/syn OR 'hemic and lymphatic
 diseases'/syn OR 'eye diseases'/syn OR 'endocrine disease'/syn OR 'environmental disease'/syn
 OR 'digestive system diseases'/syn OR 'congenital, hereditary, and neonatal diseases and
 abnormalities'/syn OR 'chemically induced disorder'/syn OR 'cardiovascular diseases'/syn) AND
 [embase]/lim

Date of search: August 18, 2023

Records: 4,020

EconLit

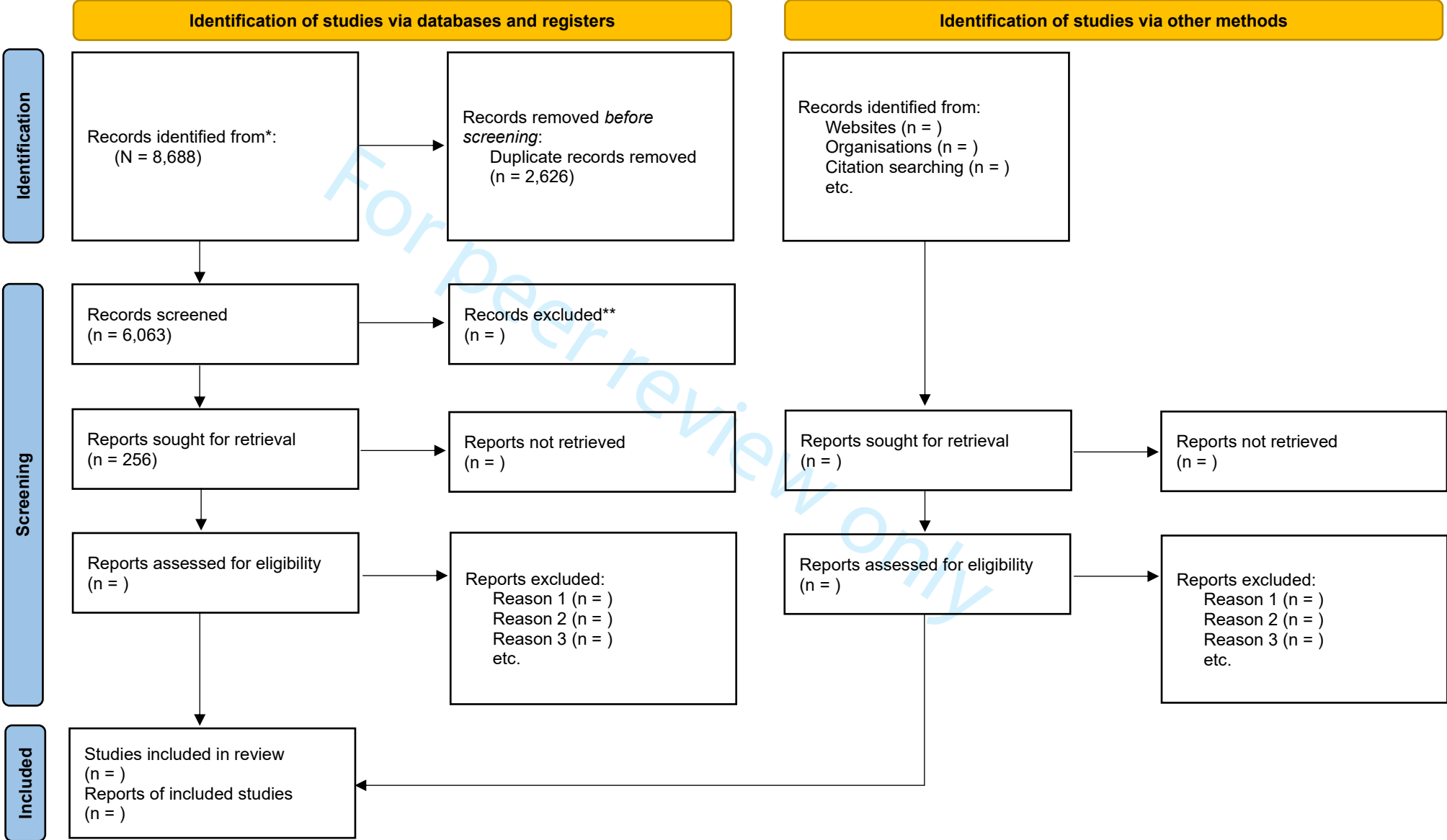
((('wildfires' or 'fire' or 'deforestation') and (((((((((((('tropical climate' or 'climate tropical' or
 'climates tropical' or 'tropical climates' or 'rainforest' or 'rainforests' or 'rain forest' or 'forest rain' or
 'rain
 forests' or 'tropical rainforest' or 'rainforest tropical' or 'rainforests tropical' or 'tropical rainforests' or
 'Amazon' or 'Brazil' or 'Argentina' or 'Peru' or 'Ecuador' or 'Bolivia' or 'Colombia' or 'Venezuela' or
 'Guyana' or
 'Suriname' or 'French Guiana' or 'Paraguay' or 'Panama' or 'El Salvador' or 'Belize' or 'Costa Rica' or
 'El Salvador' or
 'Guatemala' or 'Honduras' or 'Nicaragua' or 'Panama' or 'Anguilla' or 'Antigua) and Barbuda') or
 'Aruba' or 'Bahamas' or
 'Barbados' or 'British Virgin Islands' or 'Cayman Islands' or 'Cuba' or 'Dominica' or 'Dominican
 Republic' or 'Grenada'
 or 'Guadeloupe' or 'Haiti' or 'Jamaica' or 'Martinique' or 'Montserrat' or 'Netherlands Antilles' or
 'Puerto Rico' or
 'Saint Barthelemy' or 'Saint Kits) and Nevis') or 'Saint Lucia' or 'Saint Martin' or 'Saint Vincent) and
 the

1
2
3 Grenadines') or 'Trinidad) and Tobago') or 'United States Virgin Islands' or 'Mexico' or 'Hawaii' or
4 'Cape Verde' or
5 'Sao Tome) and Principe') or 'Gambia' or 'Senegal' or 'Guinea-Bissau' or 'Guinea' or 'Sierra Leone' or
6 'Liberia' or
7 'Ivory Coast' or 'Ghana' or 'Togo' or 'Benin' or 'Nigeria' or 'Cameroon' or 'Central African Republic'
8 or 'South Sudan'
9 or 'Ethiopia' or 'Equatorial Guinea' or 'Gabon' or 'Congo' or 'Democratic Republic of the Congo' or
10 'Uganda' or 'Rwanda'
11 or 'Burundi' or 'Kenya' or 'Somalia' or 'Tanzania' or 'Zambia' or 'Mozambique' or 'Madagascar' or
12 'Seychelles' or
13 'Mauritius' or 'Comoros' or 'Botswana' or 'Malawi' or 'Brunei' or 'Burma' or 'Myanmar' or
14 'Cambodia' or 'East Timor' or
15 'Indonesia' or 'Laos' or 'Malaysia' or 'Philippines' or 'Singapore' or 'Thailand' or 'Vietnam' or 'India'
16 or 'Papua New
17 Guinea' or 'Australia' or 'Solomon Islands' or 'Vanuatu' or 'New Caledonia') and (((((((((((('patient
18 care' or 'vital
19 statistics' or 'wounds) and injuries') or 'urogenital tract disease' or 'stomatognathic diseases' or 'skin)
20 and
21 connective tissue diseases') or 'respiratory tract diseases' or 'pathological conditions, signs) and
22 symptoms') or
23 'otorhinolaryngologic diseases' or 'occupational diseases' or 'nutritional) and metabolic diseases') or
24 'nervous system
25 diseases' or 'neoplasms' or 'musculoskeletal disease' or 'infection' or 'immune system diseases' or
26 'hemic) and
27 lymphatic diseases') or 'eye diseases' or 'endocrine disease' or 'environmental disease' or 'digestive
28 system diseases'
29 or 'congenital, hereditary,) and neonatal diseases and abnormalities') or 'chemically induced
30 disorder' or
31 'cardiovascular diseases')).mp. [mp=tx, bt, ti, ab, ct, hw, id]

32
33
34
35
36
37
38
39 Date of search: August 18, 2023

40
41 Records: 464
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Appendix II - Ongoing work



From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Appendix III - Data extraction form

General information	
Reviewer who performed the data extraction:	
Date of the data extraction performed:	
Paper database:	
Study identification	
Publication full title:	
DOI number:	
First author name:	
Year of publication:	
Journal of publication:	
Aim of study:	
Exposure and data source	
Area (city, region, country):	
Exposure:	
Exposure temporal level:	
Exposure temporal duration:	
Origin of the exposure data source:	
Origin of the outcome data source:	
Method	
The statistical model applied:	
Study design and findings	
Study population:	
Health outcome:	
Type of disease:	
Lag between exposure and the health consequences	
Study findings as reported by the authors:	
Report the following list:	
1. measure of association + standard errors for every different regression specification	
2. Subgroups estimates	
3. Confounders used	
4. Identification strategy if applicable	
Conclusions	
Study limitations identified by the team:	
Policy recommendation from the study	