

Knowledge, Attitude, Perception and Preventive Practice Towards Novel Coronavirus 2019 in Sub-Saharan Africa: A Scoping Review Protocol

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Protocol

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Abstract

Background: Recent statistics and studies have shown the adverse effects of the novel coronavirus 2019 (COVID-19) on population health and how knowledge, attitude, perception and practice (KAP) towards the virus can be the main key to limiting its spread in the absence of a vaccine. Thus, this study aims at mapping evidence on the KAP towards COVID-19 in sub-Saharan Africa (SSA) using scoping review.

Methods: The study will employ a systematic scoping review to identify, describe, and map literature on the KAP towards COVID-19 in SSA. The primary search will include peer-reviewed and grey literature. The search will be performed using the EBSCOhost platform and a keyword search from the following electronic databases will be conducted: PubMed/MEDLINE, Google Scholar, Science Direct, World Health Organization (WHO) library, and grey literature. The study selection will be guided by the inclusion and exclusion criteria. A data charting table will be used to extract information from the included studies. Data will be analysed using NVIVO version 10 and a thematic content analysis will be used to present narrative account of the review.

Discussion: We anticipate finding relevant literature on the KAP towards COVID-19 in SSA. The results of this study will help reveal research gaps in KAP towards COVID-19 and this will guide future research and highlight the new concepts discovered.

Systematic review protocol registration: Open Science Framework <https://osf.io/sdm46/>.

Background

Coronavirus 2019 (COVID-19), also referred to as severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), became a global pandemic due to the continuous spread of the virus worldwide. The virus is considered a zoonotic contagious disease that can transmit from animal to human and from human to human (1); when transmitted into humans, it can lead to severe respiratory illness (2, 3). COVID-19 was first reported by the world health organization (WHO) on December 31, 2019; as a result of its continuous global transmission and inability to restrain the virus worldwide, it was declared a global health concern and announced as a global pandemic on March 11, 2020 (4).

The contagious virus began its ravaging effect from Wuhan, Hubei Province, China and then around the world (5–7), except Antarctica (8). Unlike past outbreaks in the same strain of coronavirus' family-like Severe acute respiratory syndrome (SARS) and middle east respiratory syndrome (MERS), COVID-19 spread rapidly globally with a higher rate of infections and deaths (9). As at September 20, 2020, the global confirmed cases of COVID-19 were 30,685,001, with 955,843 deaths and 20,922,189 recoveries (10).

Several studies have noted that the major transmission route of COVID-19 is respiratory droplets produced from an infected person while sneezing and coughing. Infected surfaces and objects also transmit it since the virus can survive some hours while suspended in the air (11–13). The COVID-19 has

been characterized by wide clinical features ranging from no symptoms to a severe form of respiratory illness (14, 15). The typical signs and symptoms of COVID-19 include respiratory symptoms, fever, cough and shortness of breath (1, 14, 16).

Although the spread of COVID-19 is highest in Europe and America, it has been alarmingly increased in Africa (17–20). The situation might be serious in Sub-Saharan Africa (SSA) due to high comorbidities (human immunodeficiency virus, tuberculosis and malaria), poverty, and poor healthcare service quality and access to health facilities (17, 18). As of September 19, the confirmed cases of COVID-19 from 55 African countries have reached 1,390,510 with reported deaths of 33,621, and 1,140,516 recoveries (10). In Africa, the first confirmed case of COVID-19 was reported in Egypt on February 14, 2020. Since then, the number of cases have continued to increase with Ethiopia, the Democratic Republic of Congo (DRC), Nigeria, Sudan, Angola, Tanzania, Ghana, and Kenya identified as vulnerable countries (21).

A bi-national Africa study on knowledge, attitude and practice of Africans towards COVID-19 showed a magnitude of variation in knowledge, attitude and practice towards the virus (22). Other studies in SSA also concluded that African dwellers are not complying with recommended health and safety measures advised by the health ministers of the countries or WHO, including social distancing and other important preventive measures. This is because many people in Africa regarded the disease as a “distant white man’s sickness” that could never spread to their habitat (18, 23, 24).

Considering the low level of education that has been reported in some SSA countries (25), it is expected that misinformation about COVID-19 will almost spread faster among the vulnerable groups. However, as the number of COVID-19 cases gradually rises among the sub-Saharan population (10), uncertainties unfold as misinformation about COVID-19 continues to propagate in SSA. The propagation of misinformation in sub-Saharan Africa has also become a major concern for governments, public health experts and WHO (26).

Thus, a scoping review of literature on studies conducted in SSA on the knowledge, attitudes, perceptions and practices (KAP) toward COVID-19 is critical to understanding the magnitude of KAP towards the virus. It is anticipated that the study results will reveal research gaps to guide health experts in decision making in SSA as well as develop policies and interventions tailored towards bridging the gap.

Methods

We will conduct a systematic scoping review of peer-reviewed and grey literature on the knowledge, attitudes, perceptions and practices towards novel Coronavirus 2019 in SSA. A scoping review method will be selected as it facilitates the mapping of new concepts, types of evidence and related gaps (27). For the proposed review, we would be guided by Arksey and O’Malley’s methodological framework (28). The framework involves (i) identifying the research question, (ii) identifying relevant studies, (iii) study selection, (iv) charting the data, and (v) collating, summarising and reporting results. The Preferred Reporting Items for Systematic Reviews and Meta-analysis Protocols (PRISMA-P) 2015 checklist (29), will be used while developing this scoping review protocol (**see checklist in Additional file 1**). The review

protocol has been registered on the Open Science Framework (<https://osf.io/sdm46/>). The study will be drafted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for the Scoping Reviews (PRISMA-ScR) checklist to ensure each step in the scoping review process is standardized (30).

1. Identifying the research question.

The research question is “what is known from existing literature on the knowledge, attitude, perception and practice towards novel Coronavirus 2019 in SSA?”

Eligibility criteria

The Population-Concept-Context (PCC) framework will be used to determine the eligibility of the research question. The PCC framework is illustrated in Table 1.

Table 1
PCC Framework for determining the eligibility of the research question.

Criteria	Determinant
Population	Participants \geq 18 years of age
Concept	Articles focusing on the level of knowledge, attitudes and perceptions and practices towards coronavirus 2019
Context	Sub-Saharan Africa

Inclusion criteria

The inclusion criteria are as follows:

- Original research articles reporting information regarding knowledge, attitude, perceptions and practices towards coronavirus 2019.
- Articles utilising any study design published in peer-reviewed journals and in grey literature addressing the research question.
- All published and unpublished papers in English (pre-print pending to be published, the report from WHO, United Nation and health authorities in different African countries).
- Articles published from December 2019 till present will be considered.
- Articles involving participants from countries in sub-Saharan Africa.

Exclusion criteria

The exclusion criteria are as follows:

- Studies that did not report on the knowledge, attitudes, perception and practice of coronavirus 2019.
- Studies conducted among children and those not conducted in sub-Saharan Africa.
- Studies not published in English language will be excluded.

2. Identifying relevant studies

This scoping review will include all study designs that have a clear empirical base utilising qualitative, quantitative and mixed methods published in peer-reviewed journals as well as in grey literature addressing the research question. The search will be performed using the EBSCOhost platform, a keyword search from the following electronic databases will be conducted: PubMed/MEDLINE, Google Scholar, Science Direct, World Health Organization (WHO) library, and grey literature. Studies will be identified by searching literature published in English language from 1st December 2019 to 31st October 2020. Articles will also be searched through the “Cited by” search as well as citations included in the reference lists of included articles. The search terms will include Knowledge, Attitude, Perception, Practice, Coronavirus 2019, and sub-Saharan Africa. The search strategy was piloted to check the appropriateness of selected electronic databases and key words. The PubMed search strategy is presented in Table 2. Consistency across databases will be maintained where possible. Boolean terms (AND, OR) will be used to separate the keywords during the search. Medical Subject Headings (MeSH) terms will also be included in the search. The researcher will do a hand search of eligible studies from the list of references of included studies.

Table 2
PubMed Search strategy

Keyword search	Date of search	Search engine	Number of publications retrieved
(((("knowledge"[MeSH Terms] OR "knowledge") AND ("attitude"[MeSH Terms] OR "attitude"[All Fields] OR "attitudes"[All Fields])) AND ("perception"[MeSH Terms] OR "perception"[All Fields] OR "perceptions"[All Fields])) AND ("practice")) AND ("severe acute respiratory syndrome coronavirus 2"[Supplementary Concept] OR "severe acute respiratory syndrome coronavirus 2"[All Fields] OR "ncov"[All Fields] OR "2019-nCoV"[All Fields] OR "COVID-19"[All Fields] OR "SARS-CoV-2"[All Fields] OR ((coronavirus[All Fields] OR "cov"[All Fields]))) OR ("coronavirus"[MeSH Terms] OR "coronavirus"[All Fields])) AND ("SubSaharan Africa"[All Fields] OR "sub-Saharan"[All Fields] OR "Angola"[All Fields] OR "Benin"[All Fields] OR "Botswana"[All Fields] OR "Burkina Faso"[All Fields] OR "Burundi"[All Fields] OR "Cameroon"[All Fields] OR "Cape Verde"[All Fields] OR "Central African Republic"[All Fields] OR "Chad"[All Fields] OR "Comoros"[All Fields] OR "Congo"[All Fields] OR "Democratic Republic of Congo"[All Fields] OR "Cote d'Ivoire"[All Fields] OR "Djibouti"[All Fields] OR "Equatorial Guinea"[All Fields] OR "Eritrea"[All Fields] OR "Ethiopia"[All Fields] OR "Gabon"[All Fields] OR "Gambia"[All Fields] OR "Ghana"[All Fields] OR "Guinea"[All Fields] OR "Guinea-Bissau"[All Fields] OR "Kenya"[All Fields] OR "Lesotho"[All Fields] OR "Liberia"[All Fields] OR "Madagascar"[All Fields] OR "Malawi"[All Fields] OR "Mali"[All Fields] OR "Mauritania"[All Fields] OR "Mauritius"[All Fields] OR "Mozambique"[All Fields] OR "Namibia"[All Fields] OR "Niger"[All Fields] OR "Nigeria"[All Fields] OR "Rwanda"[All Fields] OR "Sao Tome"[All Fields] OR "Senegal"[All Fields] OR "Seychelles"[All Fields] OR "Sierra Leone"[All Fields] OR "Somalia"[All Fields] OR "South Africa"[All Fields] OR "South Sudan"[All Fields] OR "Sudan"[All Fields] OR "Swaziland"[All Fields] OR "eSwatini"[All Fields] OR "Tanzania"[All Fields] OR "Togo"[All Fields] OR "Uganda"[All Fields] OR "Zambia"[All Fields] OR "Zimbabwe"[All Fields])) Filters: from 2019/12/1–2020/10/31	2020/09/25	PubMed	976

3. Study selection

The study selection procedure will be summarized using a PRISMA flow chart (Fig. 1) (31). The researchers will conduct a comprehensive title screening; all studies that do not address the study's research question will be excluded along with all the duplicates. All included studies for abstract screening will be uploaded on Endnote X7 software. In the case of articles that are difficult to find, the researchers will seek assistance from the UKZN library services. The authors will also be contacted to request the full copies of articles that are not attainable within the UKZN library database. The final Endnote database will be shared among the review team for abstract screening, i.e., two independent

reviewers will screen the abstracts and full articles through guidance from the inclusion criteria. Any discrepancies in the results of the abstract screening will be resolved through a discussion until consensus is reached. A third screener will resolve discrepancies in full-article screening results. Copies of full articles for eligible studies will be obtained and maintained for data extraction.

The Preferred Report Items for Systematic and Meta-Analysis (PRISMA) flow chart for the selection and screening of studies done in this research is shown in Fig. 1.

4. Charting the data.

A data charting table will be developed and piloted. Two reviewers will independently extract relevant information from the included studies using google forms. Any discrepancies between the reviewers will be resolved through a discussion until consensus is reached or by seeking the opinion of a third reviewer. All variables that will focus on answering the research question will be included in the data charting table (Table 3). The data charting form will be continually reviewed and updated.

Table 3
Data charting table form.

Author and date
Title
Country
Aims
Study population
Sample size
Study design
Study setting
Most relevant findings
Conclusions
Comments

5. Collating, summarising and reporting the results

This study aims to map the existing evidence and to summarise the findings as presented across articles. A narrative account of the data extracted from the included studies will be analysed using the thematic content analysis. Data will be extracted around the following outcomes: knowledge of coronavirus, attitude towards coronavirus, perceptions towards coronavirus and preventive practices towards coronavirus. Emerging themes will be identified, and data will be coded according to these themes. Where

the presented data is ambiguous or missing, the study corresponding authors will be contacted for clarification on the process of data extraction. NVIVO software version 10 will be used collectively to code the data from the included studies (32). The below process would be followed:

- Coding data from the included articles
- Categorising the codes into major themes
- Displaying the data
- Identifying key patterns in the data and identify sub-themes
- Summarising

Synthesis

The resulting themes will be analysed and critically examined in relation to the research questions. The reviewers will also analyse the meanings of the findings in relation to the aim of the study and the implications of these findings for future research, policy and practice.

Quality appraisal

According to the scoping review methodology, no quality assessment of selected articles will be performed, as we aim is to rapidly map relevant literature and identify gaps in knowledge, attitude, perception and preventive practice towards the novel coronavirus 2019 (28, 33).

Discussion

This scoping review will be conducted to map the existing literature on the knowledge, attitude, perceptions and preventive practice (KAP) towards novel coronavirus 2019 in SSA. The KAP of the population has implications for the control of the disease and important for policies and intervention efforts. This review findings will highlight gaps in the literature and form the basis for refining research questions for further research. At the time of writing, we are not aware of another scoping review addressing this specific topic.

This protocol will serve as a guide for the entire process of conducting the scoping review. The search strategy outlined in this protocol will ensure a comprehensive search of the literature and reduce bias. A wide range of databases and grey literature will be searched for information. As the first case of the novel coronavirus was reported in December 2019, evidence from December 2019 onwards will be screened in this review. Therefore, this study will identify the extent of research on the public's KAP since the virus was reported. A potential limitation of this scoping review may include the determination of articles to include based on the reviewers' subjective measurement of the degree to which the study outcomes are emphasized in the selected studies. For example, knowledge may be briefly discussed in a qualitative study, but not a prominent finding/theme, resulting in the article's exclusion from the scoping review.

On completion of data extraction, the review findings will be disseminated through publication in a peer-reviewed journal. Any amendments made to the protocol while conducting the study will be detailed in the final manuscript. It is anticipated that the review findings will inform policymakers and may influence policy and guidelines towards controlling the spread of the coronavirus. Researchers may also be interested in filling the gaps exposed through the review.

Abbreviations

COVID: Coronavirus 2019

KAP: Knowledge, attitude, perception and practice

MESH: Medical Subject Headings

MMAT: Mixed Method Appraisal Tool

PCC: Population Content Context

PRISMA-ScR: Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews

SSA: sub-Saharan Africa

WHO: World Health Organization

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Availability of data and materials

Not applicable

Competing interests

The authors declare that they have no competing interests.

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Author's contributions

All contributed to the development of the research questions, the methods, drafting and editing. All authors critically reviewed the draft version of the manuscript and approved the final version.

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Not applicable

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Figures

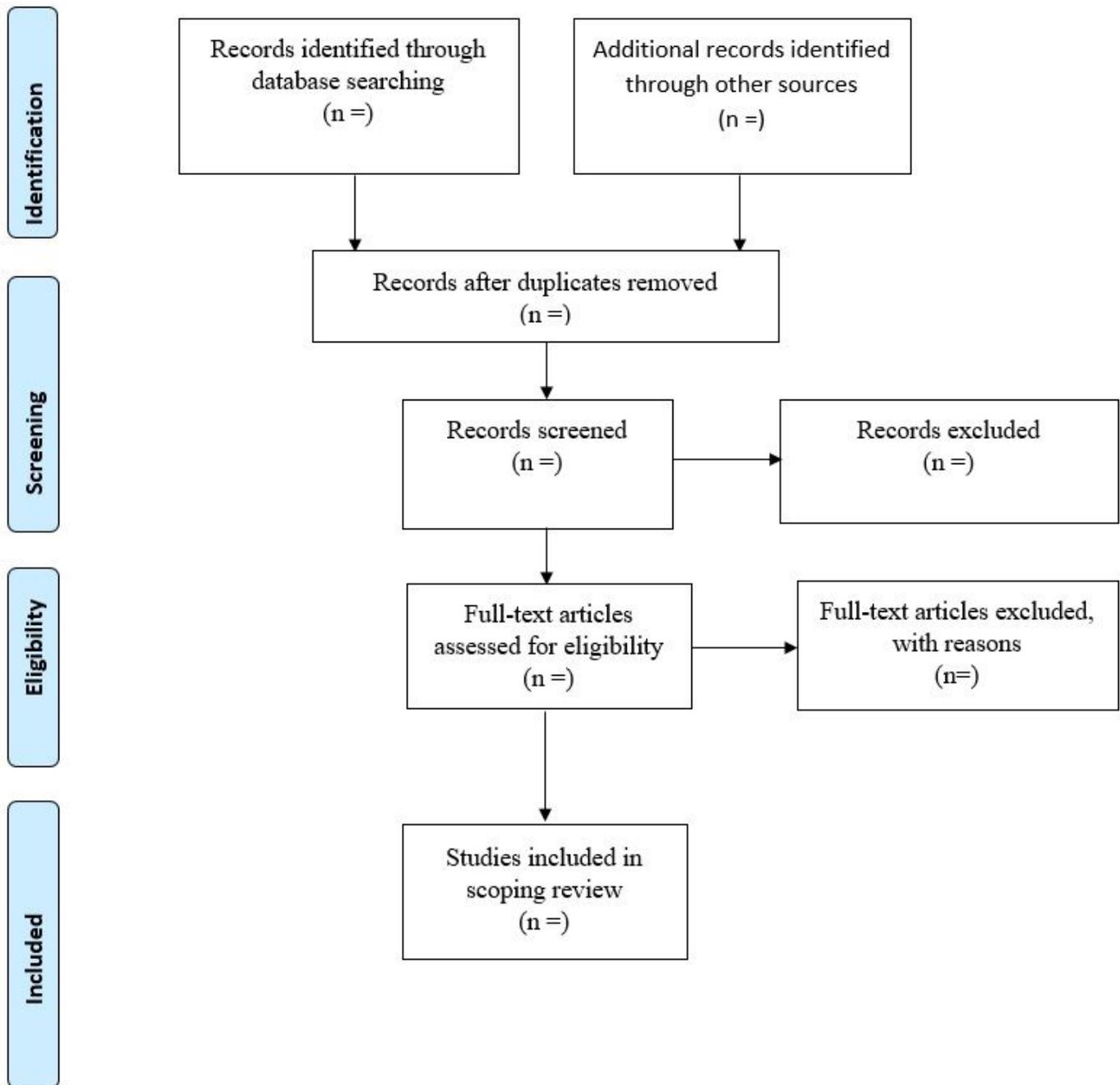


Figure 1

PRISMA record screening flow-chart. [Source: Adapted from Moher et al. (31)].

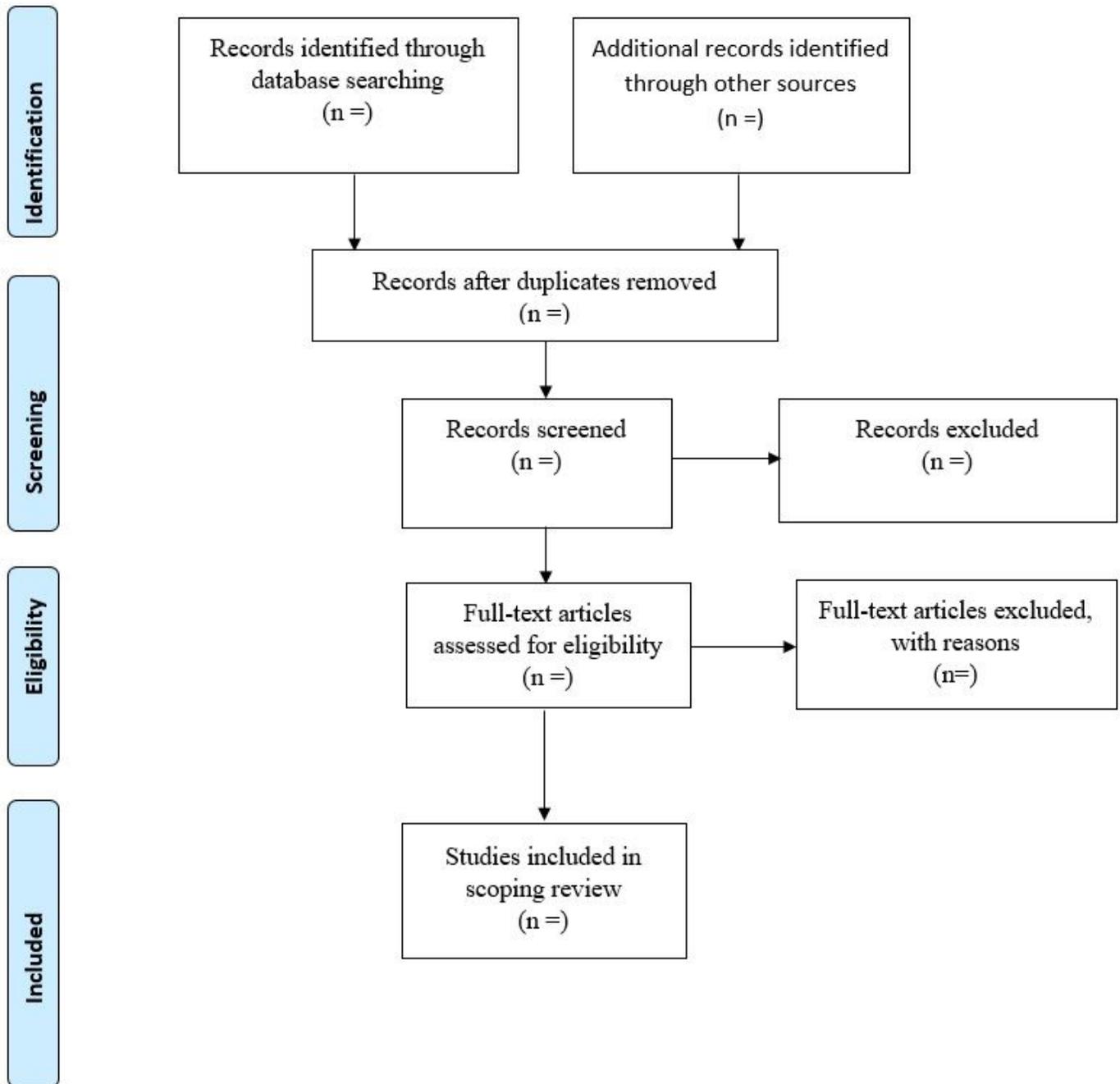


Figure 1

PRISMA record screening flow-chart. [Source: Adapted from Moher et al. (31)].

Supplementary Files

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