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Challenges and Facilitators to the Visibility and Scientific Impact of Health Science Research From Africa: A Scoping Review

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Objectives: This study sought to determine evidence on the barriers and facilitators of the scientific impact of African health sciences research. The goal was to provide insights into research gaps and priorities regarding the scientific impact of Africa's public health research to support evidence-based decision-making related to this field's research, policy, and practice decisions.

Methods: The studies were identified through structured searches of different data sources. Only scientometric and bibliometric studies of health research from Africa that focused on African countries were included. The data were analyzed using descriptive content analysis, and the results are presented here using a narrative description.

Results: The study found 78 studies that focused solely on African countries. PubMed was the most utilized primary data source. Despite a gradual increase in research productivity and impact, due to developments in information and communication technologies, funding, and collaboration, there still exist fundamental barriers stemming from unequal partnerships, poor funding, and a lack of research capacity and resources.

Conclusion: There is a need for more studies that profile African health research to assess productivity, visibility, and scientific impact to inform health policies, interventions, and future research agendas.

Keywords: Africa, bibliometrics, citation impact, research evaluation, scientometrics

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INTRODUCTION

Africa faces significant public health challenges, but its research output and impact remain disproportionately low compared to its population size and disease burden [1, 2]. Despite being home to 12% of the world's population [3] and bearing 31% of the global disease burden [4, 5], no African country invests more than 1% of its GDP in research and development [3]. Consequently, Africa contributes less than 1% to the global research output [6], hindering its ability to address local health challenges effectively.

Key public health challenges in Africa include infectious diseases such as HIV, malaria, and tuberculosis [7, 8], alongside an increasing burden of non-communicable diseases, including cardiovascular diseases, cancer, and diabetes [9]. Addressing these challenges requires robust

local research to inform evidence-based decision-making in health policy and practice decisions. While some research initiatives have been undertaken in Africa, there remains a need to assess the research landscape to inform interventions aimed at enhancing research capacity.

Previous studies on the African research landscape have focused on research networks, outputs, subject areas, funders, data sources, institutions, researchers, countries and scientific impact assessments, including their associated factors [5, 10–23]. Typically, bibliometric and scientometric studies that evaluate global-level research performance do not show the contributions of African countries because they are not usually top contributors, except in a few themes, subjects, or diseases. African countries are primarily reported as countries of limited contribution or low performance [17]. Only a few African countries stand out when evaluating research performance at the global level. Countries such as South Africa, Egypt, Kenya, and Nigeria are almost always among those countries that appear in these evaluations [17, 24, 25]. This results in the underreporting or complete lack of research performance insights from other African countries. Studies that only focus on the research performance of African countries reveal unique insights from underreported and underrepresented research subjects and countries, while also revealing unique gaps and challenges [25]. Despite a number of studies that evaluate the performance of Africa's health research, there is a limited synthesis of this evidence, which is crucial for informing future research priorities and interventions aimed at improving the impact of African health science research.

To address this gap, a scoping review was conducted to comprehensively assess the scientific impact of health science research in Africa. We compared evidence across regions and examined key challenges and facilitators affecting research productivity and impact. Additionally, the review aimed to identify existing gaps and priority areas and determine the scope of research needed to support evidence-informed decision-making, strengthen research collaboration, guide funding allocation, and contribute to improvements in disease prevention, health promotion, patient care, and health policy across the continent. For its exploratory nature, a scoping review was chosen, as it allows for a systematic analysis of all relevant data on this broad issue, unlike a systematic review, which requires a more focused query.

METHODS

Review question(s)

The main review question is:

- What are the most important challenges and facilitators of the scientific impact of health science research in Africa?

The specific questions are:

- What is the geographical coverage of scientometric or bibliometric studies?
- What are the commonly used data sources?
- Which indicators or metrics are reported or used for citation analysis, and what is the reported level of citation impact?
- Which public health thematic areas or subjects are researched?
- What is hindering the growth of Africa's health research and its scientific impact?
- What are the facilitators and opportunities for the growth of the scientific impact of health research in Africa?

Eligibility Criteria

The study used the Participants, Concept, and Context (PCC) framework recommended by the Joanna Briggs Institute (JBI). The PCC framework is a structured method frequently used in scoping reviews and evidence syntheses to direct the development of research questions and eligibility requirements. As with the PICO framework, which is used in systematic reviews, the JBI specifically recommends it for scoping reviews. PCC also helps identify the search strategy and screening of articles. The elements of the framework are explained below.

Participants

The participants include health science researchers, institutions, funders, and research administrators.

Concept

We included studies on the scientific impact of public health research conducted in Africa. Since public health is multidisciplinary, any article that covered a topic or subject related to public health, health science, or medicine was included. Hence, we predominantly used the terms "health science research" or "health research" throughout the study. We excluded studies that have reported on the general scientific impact of research from Africa (for example, across all disciplines). Public health research has been defined as 'research which contributes to the understanding of how population health is influenced by determinants (genetic, environmental, social, and so on) or to the identification of effective interventions for improving health and reducing health inequalities' [SIC] [26]. Scientific impact focuses on the knowledge added to a particular topic of study, which is commonly measured quantitatively by analyzing the citations received by a particular publication and its contributing factors [27].

Context

The context of the study was Africa as a geographical location. Studies with a global focus or that combined African countries and non-African countries were also excluded. This was done to ensure that African evidence is salient, as studies with a global focus either do not report on African countries at all or only mention a small number of them, which usually underestimates evidence from the continent.

Types of Sources

The sources of evidence included bibliometric and scientometric studies only.

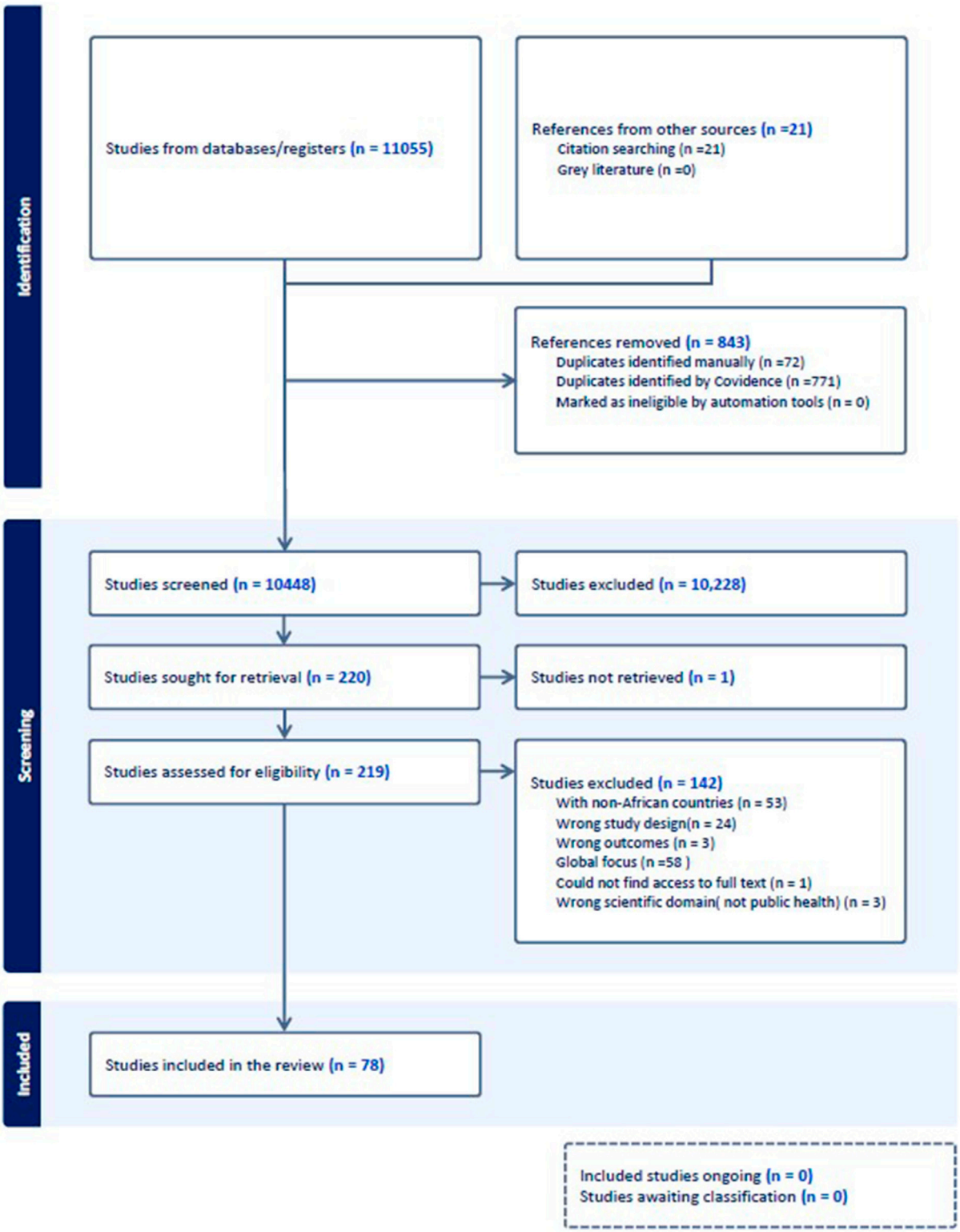

FIGURE 1 | PRISMA flow diagram (Africa, 2025).

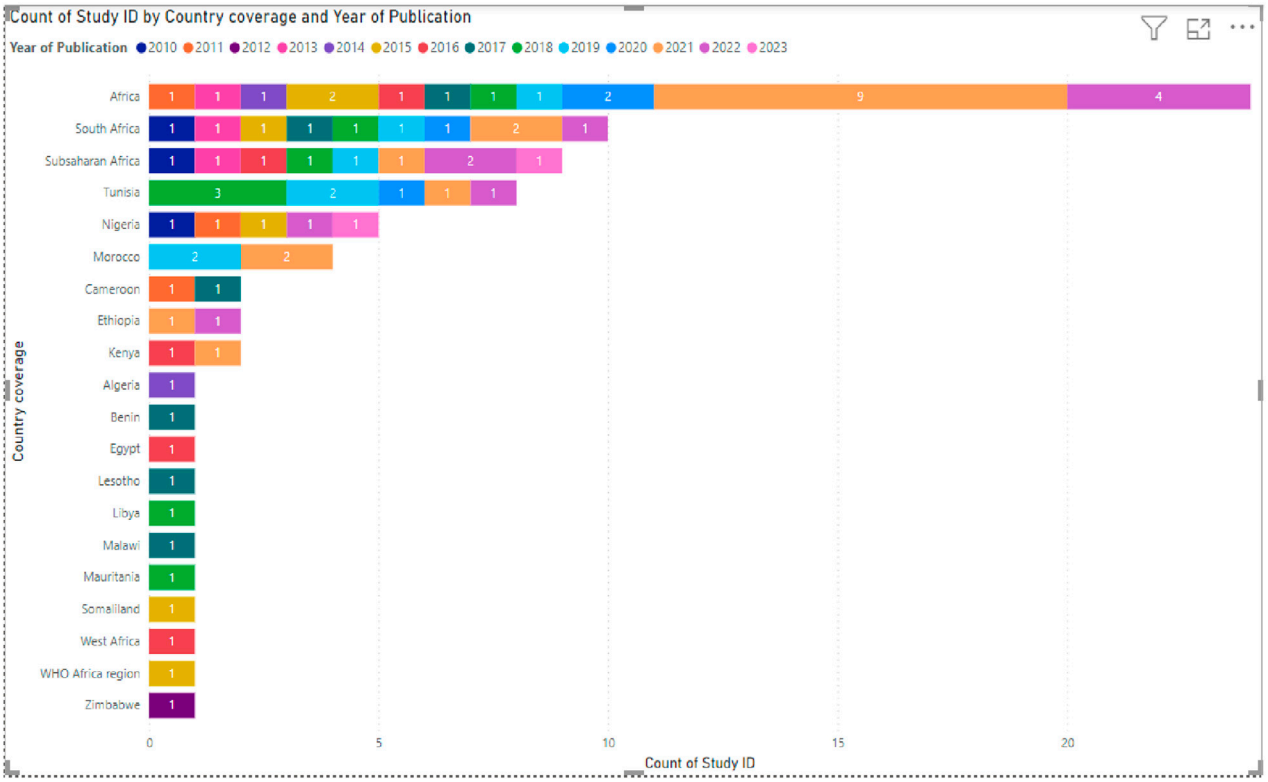

FIGURE 2 | Geographic coverage of studies (Africa, 2025).

Research Framework

The Joanna Briggs Institute (JBI) guide and template for conducting scoping reviews were used to format this scoping review. However, Arksey and O'Malley's framework for conducting scoping reviews was adopted. This framework consists of five stages: identifying the research question; identifying the relevant studies; selecting the studies; charting the data; and collating, summarizing, and reporting the results [28].

Search Strategy (Identifying the Relevant Studies)

A systematic search was conducted to identify both published studies and gray literature. The studies were identified through structured searches of several abstract and citation databases, including Web of Science (WoS), EMBASE, Dimensions, PubMed, the Cochrane Library, and the African Index Medicus (AIM). Simple searches were also conducted in African Journals Online (AJOL), the Directory of Open Access Journals (DOAJ), and Google Scholar. Gray literature was searched in ProQuest Dissertations and Theses Global. The search strategy for the selected databases is provided in **Supplementary Table 2**. A preliminary search was conducted in PubMed, Dimensions, and the Cochrane Library to gauge the availability of articles. The keywords identified in the titles and abstracts of the articles from the preliminary search were used to develop a full search strategy that was adapted to each data source. Also, citation tracking was also perfomed using the articles already identified, and manual searching of key journals was conducted [28, 29]. No language restrictions were employed so as to identify all of the available data on the topic under study. However, the full-text screening only included English-language articles due to the limitations of the review team in understanding other languages. Nevertheless, articles in other languages were still reported, and if the abstract was in English, it was used to report the outcome variables of the study. In order to provide a current status, we limited the searches to articles published from 2010 to 2023.

Study/Source of Evidence Selection

All results of the conducted searches were uploaded to Covidence, a web-based application for conducting reviews. Covidence automatically identified and removed duplicates. Two independent reviewers (AS and KW) prescreened the titles and then the abstracts based on the study eligibility criteria defined in the protocol to identify potentially relevant articles. The full texts of the potentially relevant articles were then downloaded and re-uploaded to Covidence for full-text screening by the same two reviewers (AS and KW), independently. Any disagreements were resolved through discussion between the two reviewers until a consensus was reached. The entire process, from the search results to the selection of articles, is presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram (**Figure 1**).

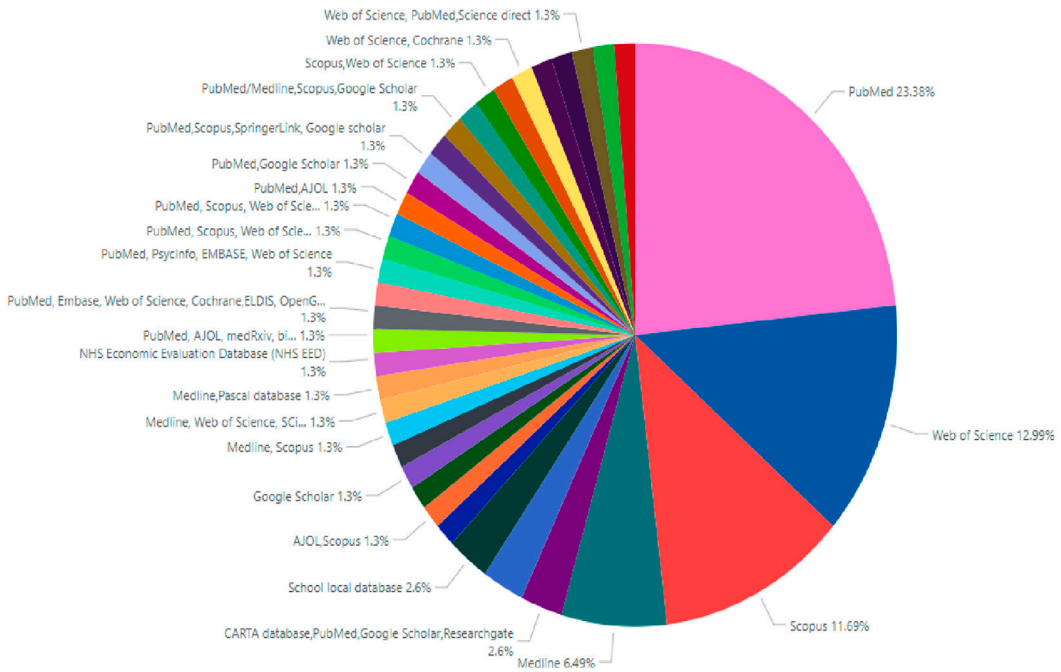

FIGURE 3 | Common data sources used for bibliometrics and scientometrics (Africa, 2025).

Data Extraction (Charting the Data)

A data charting tool designed in Covidence by AS was used for the charting of included articles (**Supplementary Table 3**). Data extracted included article details, aims and objectives, methods, and results related to the outcome variables. The outcome variables of the review include: the study's country of origin, data sources, metrics or indicators reported, public health thematic areas or subjects reported, and facilitators and challenges of scientific impact, including suggested solutions or opportunities for growth. The data charting form was revised by AS several times during the data extraction process to align it with the results related to the outcome variables.

RESULTS

The search retrieved 11,055 articles, with those identified through citation tracking and manual searching being 21, totaling 11,076 articles. Deduplication removed 843 studies, leaving 10,233 articles for prescreening. After reading the titles and abstracts, 220 studies were selected for full-text screening and assessed for eligibility. As **Figure 1** shows, we failed to retrieve the full text of one article, and 141 articles were removed for various reasons, including global focus, combining an African country with a non-African country, incorrect design and outcomes, and not being in the health science domain. Seventy-eight articles were included in the final review.

What Is the Geographical Coverage of Scientometric or Bibliometric Studies?

Figure 2 shows that the majority of the articles in the final review focused on the African region as a whole [30–39], followed by South Africa [40–46], the sub-Saharan Africa region [47–52], Tunisia [53–59], Morocco [30, 60–62], Ethiopia [63, 64], and Cameroon [65, 66]. Other countries and regions contributed only one article each. However, during the screening stage, 142 potentially relevant studies that focused on the scientific impact of African countries or regions together with other countries and regions of the world were excluded because of the inclusion and exclusion criteria of this study. For instance, 58 studies focused on a global scientific impact, while 53 combined African countries focused on a non-African country.

What Are the Commonly Used Data Sources?

As shown in **Figure 3**, the majority of the studies used PubMed as the data source [21, 30, 49, 50, 57, 60, 66–68], followed by Web of Science [44, 69–71], Scopus [31, 41, 48, 59], and a combination of either of these three [32, 47, 67, 72, 73]. Other studies used one of these three databases or combined two or three of them with other data sources, as shown in **Figure 3**. Only a few studies relied on the AJOL and

TABLE 1 | Barriers to Africa's health research productivity, visibility, and scientific impact (Africa, 2025).

Barriers	Editorial bias/topics not relevant in global north few/north hence not citedcurrhbox	Lack of skills in academic writing/inexperienced researchers	Lack of official training in research methods	Challenges to publish in English for francophone countriescurrhbox	Unfair distribution of resources to institutions at the national level/lack of logistical support and financial resources	Research funding by the global north sets the research agenda and rules for publishing	Stringent authorship guidelines/bias against US – affiliated authors	Heavy (clinical) workload/Lack of time devoted to research	Excessive private practice for financial profit/brain drain	Lack of motivation and incentives/research environment not conducive/Political instability	Lack of interest in the research itself/No continuity plan	Lack of research infrastructure/strategies	Insufficient access to the internet/databases/high Subscription fees/APCs	Local journals not indexed by international indexers/limited visibility/print journals	Data discrepancies/ incomplete data
Study ID															
Akhaddar [30]		✓		✓											
Akhaddar [77]		✓	✓	✓	✓			✓	✓	✓	✓				
Akudinobi and Kilmarx [47]	✓	✓		✓		✓	✓								
Arabi [60]		✓		✓	✓			✓		✓	✓				
Asfaw et al. [63]					✓			✓					✓		
Balogun et al. [31]														✓	
Baobeid et al. [68]				✓	✓			✓							
Benie-Bi et al. [48]	✓	✓			✓					✓				✓	
Ben Saad [59]				✓											
Bezzaoucha et al. [80]										✓					
Bloomfield et al. [70]									✓	✓					
Boyce [84]					✓	✓				✓				✓	
Dahdi et al. [85]					✓				✓			✓			
Denguir et al. [57]					✓				✓			✓			
El Din (2016) [86]					✓										
El Bairi [62]			✓	✓	✓							✓			
Ben Abdelaziz (2021) [78]			✓	✓											
Fonkou et al. [33]				✓											
Habtewold et al. [64]		✓			✓										
Marsh [40]											✓				
Mouako et al. [41]					✓									✓	
Mugomeri et al. [75]					✓										
Mwendera et al. [21]	✓				✓									✓	
Onyeka et al. [34]		✓	✓							✓		✓			
Pan et al. [71]					✓	✓				✓		✓			
Poreau [72]														✓	
Rees et al. [49]					✓										
Seivright et al. [38]				✓										✓	
Sooryamoorthy [44]					✓										
Uthman [50]		✓	✓	✓	✓										
Uthman et al. [25]	✓	✓	✓		✓	✓								✓	
Vargas et al. [76]														✓	
Wonkam et al. [66]					✓	✓									
Zemni et al. [56]					✓										
Ogunfolanji (2022) [87]					✓									✓	✓
Ezema [16]		✓											✓		

(*Continued*)

TABLE 1 | Continued

Barriers	Editorial bias/topics not relevant in global north few/north hence not citedcurrhbox	Lack of skills in academic writing/inexperienced researchers	Lack of official training in research methods	Challenges to publish in English for francophone countriescurrhbox	Unfair distribution of resources to institutions at the national level/lack of logistical support and financial resources	Research funding by the global north sets the research agenda and rules for publishing	Stringent authorship guidelines/bias against US – affiliated authors	Heavy (clinical) workload/Lack of time devoted to research	Excessive private practice for financial profit/brain drain	Lack of motivation and incentives/research environment not conducive/Political instability	Lack of interest in the research itself/No continuity plan	Lack of research infrastructure/strategies	Insufficient access to the internet/databases/high Subscription fees/APCs	Local journals not indexed by international indexers/limited visibility/print journals	Data discrepancies/ incomplete data
Enakrire (2021) [88]					✓							✓			
Nwagwu (2015) [89]				✓								✓		✓	✓
Wright (2017) [90]														✓	
Pillay (2013) [91]															✓
Anyanwu (2010) [92]					✓							✓			
Ahmed (2018) [93]					✓							✓			
Bennani (2021) [94]				✓											
Masukume [100]										✓					
Abu-Bonsrah (2022) [95]	✓														
Asubiaro [101]										✓					
Chuang et al. [11]				✓											
Ajuwon (2011) [96]												✓		✓	
Nwagwu (2016) [97]										✓				✓	
Uwizeye et al. [102]								✓							

TABLE 2 | Facilitators of Africa's health research productivity, visibility, and scientific impact (Africa, 2025).

Facilitators	Increased development of ICTs and internet access (improved access to e – resources and electronic online submission)	Availability of resources or equipment for professional practice and for research/data/conducive research environment	Training of professionals and increase in specialists in different professions/multidisciplinary	International exchange and collaboration or partnerships/local collaboration too	Research funding by local governments	Foreign research grants	large populationcurrrhbox	Topical relevance to community needs	Proficiency in English/articles written in English	Open access publishing model/APC waivers	Programs designed to improve institutional capacity/incentives	Training and capacity building in writing for publication/mentorship	Level of economic development	Growing interest in research (/among young people)	Publishing in high – impact journals/no. of indexed journals	Equity in authorship	Political stability
Study ID																	
Akhaddar [30]	✓	✓	✓	✓								✓					
Akhaddar [77]	✓	✓	✓	✓								✓					
Akudinobi and Kilmarx [47]											✓	✓				✓	
Arabi [60]	✓		✓	✓													
Asfaw et al. [63]				✓													
Azondekon [69]				✓													
Baobeid et al. [68]																✓	
Benie-Bi et al. [48]				✓		✓											
Ben Saad [59]			✓									✓					
Bezzaoucha et al. [80]			✓	✓					✓								
Bloomfield et al. [70]				✓	✓								✓				
Dahdi et al. [85]				✓	✓									✓			
Dele (2022) [98]		✓		✓											✓		
Denguir et al. [57]		✓		✓	✓									✓			
El Din (2016) [86]		✓															
El Bairi [62]				✓											✓		
Ben abdelaziz (2021)								✓									
Fonkou et al. [33]	✓											✓					
Habtewold et al. [64]										✓							
Marsh [40]					✓			✓									
Mbuagbaw [65]																	
Mouako et al. [41]				✓	✓												
Mugomeri et al. [75]																	
Musa [32]				✓	✓	✓	✓	✓									
Mwendera et al. [21]		✓			✓	✓	✓										
Okaiyeto [43]				✓													
Onyeka et al. [34]	✓									✓							
Pan et al. [71]			✓	✓	✓						✓						
Rees et al. [49]				✓									✓				
Sooryamoorthy [45]				✓		✓											
Talib [51]						✓											
Uthman [50]			✓	✓		✓	✓						✓		✓		
Uthman et al. [25]		✓	✓	✓			✓						✓				
Vargas et al. [76]				✓													
Wiysonge [39]		✓															
Wonkam et al. [66]	✓	✓															
Youssef [58]			✓														
Zemni et al. [56]		✓							✓								
Ezema [16]					✓					✓							
Ogunfolanji (2022) [87]				✓											✓		
Enakrire (2021) [88]	✓	✓		✓													

(*Continued*)

TABLE 2 | Continued

Facilitators	Increased development of ICTs and internet access (improved access to e – resources and electronic online submission)	Availability of resources or equipment for professional practice and for research/data/conducive research environment	Training of professionals and increase in specialists in different professions/multidisciplinary	International exchange and collaboration or partnerships/local collaboration too	Research funding by local governments	Foreign research grants	large populationcurrhbox	Topical relevance to community needs	Proficiency in English/articles written in English	Open access publishing model/APC waivers	Programs designed to improve institutional capacity/incentives	Training and capacity building in writing for publication/mentorship	Level of economic development	Growing interest in research (/among young people)	Publishing in high – impact journals/no. of indexed journals	Equity in authorship	Political stability
Uwizeye [102]			✓	✓													
Igumbor [81]			✓										✓				
Nwagwu (2016) [97]	✓	✓		✓	✓												✓
Rotich (2016) [99]			✓	✓	✓										✓		
Ajuwon (2011) [96]		✓	✓							✓					✓		
Chuang et al. [11]				✓	✓												
Asubiaro and Onaolapo [105]		✓											✓				
Abu-Bonsrah 2022 [95]				✓													
Masukume [100]								✓									
Bennani 2021 [94]				✓					✓								
Ezema [74]										✓							
Pillay (2013) [91]					✓						✓						
Wright (2017) [90]			✓		✓												
Nwagwu (2015) [89]	✓									✓					✓		
Enakrire (2021) [88]	✓	✓		✓	✓												

TABLE 3 | Opportunities and recommendations for improving Africa's health research productivity, visibility, and scientific impact (Africa, 2025).

Opportunities	Building the capacity of SSA researchers, e.g., providing training in academic writing and research methods	Strengthening local journals/local journals should seek international indexation	Focusing on conducting systematic reviews and meta – analyses because they are inexpensive, less time – consuming, and provide the highest level of evidence	Funders engaging SSA researchers in setting the research agenda/policies that set the national research agenda	Providing more direct funding to SSA researchers	Setting up governance structures that ensure equity in authorship and other aspects of research partnerships	Setting up appropriate measures to limit the public – to – private brain drain	Strengthening collaboration	Publishing in English/high – impact journals/	Strengthening research infrastructure/policies	Increasing local research funding	Using ICTs, e.g., e – prints/alternative outlets/Social media marketing	Publishing following an open access model	Creating a national bibliographic database
Study ID														
Akhaddar [30]	✓	✓	✓			✓		✓	✓					
Akhaddar [77]	✓	✓	✓				✓	✓						
Akudinobi and Kilmarx [47]				✓	✓	✓		✓						
Arabi [60]	✓							✓						
Azondekon [69]								✓						
Azzaza [54]	✓													
Azzaza [67]	✓													
Balogun et al. [31]									✓					
Baobeid et al. [68]	✓													
Benie-Bi et al. [48]		✓						✓						
Boyce [84]						✓		✓						
Dahdi et al. [85]								✓		✓	✓			
Denguir et al. [57]	✓							✓		✓	✓			
El Bairi [62]	✓	✓						✓						
Ben Abdelaziz (2021) [78]	✓													
Fonkou et al. [33]	✓									✓				
Habtewold et al. [64]								✓		✓				
Marsh [40]	✓							✓	✓					
Mouako et al. [41]	✓							✓			✓			
Mugomeri et al. [75]	✓							✓			✓			
Mwendera et al. [21]		✓						✓			✓			
Onyeka et al. [34]	✓													
Pan et al. [71]								✓		✓				
Poreau [72]								✓						
Rees et al. [49]	✓			✓		✓								
Uthman et al. [25]	✓			✓							✓			
Wonkam et al. [66]	✓					✓								
Ogunfolanji (2022) [87]	✓										✓	✓		
Ezema [16]											✓			
Enakrire (2021) [88]											✓			
Nwagwu (2015) [89]													✓	
Wright (2017) [90]									✓					
Anyanwu (2010) [92]	✓										✓	✓		
Ahmed (2018) [93]								✓		✓				
Bennani (2021) [94]								✓	✓					
Abu-Bonsrah (2022) [95]		✓						✓					✓	

(*Continued*)

TABLE 3 | Continued

Opportunities	Building the capacity of SSA researchers, e.g., providing training in academic writing and research methods	Strengthening local journals/local journals should seek international indexation	Focusing on conducting systematic reviews and meta – analyses because they are inexpensive, less time – consuming, and provide the highest level of evidence	Funders engaging SSA researchers in setting the research agenda/policies that set the national research agenda	Providing more direct funding to SSA researchers	Setting up governance structures that ensure equity in authorship and other aspects of research partnerships	Setting up appropriate measures to limit the public – to – private brain drain	Strengthening collaboration	Publishing in English/high –impact journals/	Strengthening research infrastructure/policies	Increasing local research funding	Using ICTs, e.g., e – prints/alternative outlets/Social media marketing	Publishing following an open access model	Creating a national bibliographic database
Ajuwon (2011) [96]														✓
Rotich (2016) [99]								✓				✓	✓	
Nwagwu (2016) [97]								✓		✓				
Igumbor [81]	✓										✓			

AIM databases [16, 33, 51, 74], which are solely African research databases.

Which Indicators or Metrics Are Reported or Used for Citation Analysis, and What Is the Reported Level of Citation Impact?

The majority of the studies measured research productivity by country or region [30, 32], researcher [30, 47, 66], journal [30, 60, 62], institution [30, 47, 60, 66] and topic [60, 67]. Others reported on the scientific impact of the researcher, papers/articles, and journals [30], countries [75], or institutions [41]; and others reported on collaborations among countries [45, 71, 76], researchers [45, 69, 77], institutions [41], regions [78], groups; common topics or diseases [43, 61, 69, 72, 75]; and funding [76]. Some studies compared different indicators with GDP [25, 39] and the population of countries, along with the global burden of diseases. Others focused on types of research or reports, study designs [34] and editorial quality, language [56], and authorship positions [49, 62]. In general, the studies included in the final review reported a gradual increase in research productivity and citation impact, while recognizing limitations in productivity and performance due to several challenges presented in the following paragraphs.

Which Public Health Thematic Areas or Subjects Are Being Researched?

The studies included in our analysis focused on different health subjects or themes, as indicated by their titles (**Supplementary Table 1**), including cancer [62, 76, 79], neurosurgery [30, 63, 77], general surgery [53, 67], physical medicine and rehabilitation [60], human vaccines and immunizations [39], malaria [21, 69], health systems and public health [32, 48], medical teacher research output [61, 80] and medical research [44, 56, 78], cardiovascular disease [57, 70], medicine and health in general [31, 64], quality of life [73], gender equity [68], and PhD training and medical education [55, 81]. Some studies focused on specific journals [16, 82, 83] from Africa, while others focused on the research output of institutions, such as research centers or universities, or on researchers [31]. The remaining studies concentrated on funders [47], COVID-19 [33], HIV/AIDS [75], and health professionals.

What Is Hindering the Growth of Africa's Health Research and Its Scientific Impact?

As indicated in **Table 1**, the studies selected reported a number of challenges including a lack of skills for writing in publications, inexperienced researchers [25, 30, 34, 50, 60, 64, 74, 77], language barriers for authors from Francophone countries to publish in english [30, 33, 38, 47, 59, 68, 77], an unfair distribution of resources among institutions at the national level [11, 30, 45, 50, 57, 60, 63, 84, 85, 86], research funding from the global north that sets the research agenda and rules for publishing, including authorship positions and which journals to publish with [25, 47, 66, 84], and a bias toward authors affiliated with the United States [47, 102]. Other challenges included a heavy clinical workload, a lack of time devoted to research [30, 60, 63, 68], excessive private practice for financial profit [30, 57, 70, 85, 100, 101], a lack of motivation and incentives [30, 34, 48, 60, 70, 80, 84], no intention to reapply for future grants, hence no motivation [30, 40, 60], a lack of official training in research methods [30, 34, 62, 103], a lack of interest in the research itself, a lack of research infrastructure [34, 57, 62, 85], data discrepancies in databases and journal websites [87, 104].

What Are the Facilitators and Opportunities for Increasing the Scientific Impact of Africa's Health Research?

As shown in **Table 2**, common facilitators mentioned in the studies included developments in Information Communication Technologies (ICTs) and internet access (e.g., access to e-resources and electronic online submission) [30, 33, 34, 60, 77]; the availability of resources or equipment for professional practice and research [30, 77]; the training of professionals and an increase in specialists in different professions [30, 58–60, 77, 80, 81, 102]; international exchange and collaboration or partnerships [11, 30, 41, 44, 48, 57, 60, 63, 69, 70, 77, 80, 85]; research funding by local governments [57, 70, 85], foreign research grants [21, 32, 44, 50, 51]; large population [56, 80]; topical relevance to community needs [32, 73, 78]; open access publishing models [16, 34, 64, 74]; programs designed to improve institutional capacity [47, 71], training and capacity building in writing for publications/mentorships [30, 33, 47, 59, 77], an increased level of economic development [25, 49, 50, 70, 81, 101], equity in authorship [47, 68], and publishing in high-impact journals [50, 62, 87].

What Are the Recommended Opportunities for Growing the Scientific Impact of Africa's Health Research?

Table 3 shows that several studies also made recommendations and suggested opportunities that can be explored to resolve the current situation. Some of these recommendations included building the capacity of SSA researchers, for instance through training in medical writing and research methods [30, 33, 34, 41, 49, 53, 57, 60, 62, 66–68, 73, 75, 77, 87, 103]; strengthening local journals [21, 30, 48, 62, 77]; focusing on conducting systematic reviews and meta-analyses (because they are inexpensive and less time-consuming and provide the highest level of evidence) [30, 77]; funders engaging SSA researchers in setting the research agenda and providing more direct funding to SSA researchers [25, 47, 49]; setting up governance structures that ensure equity in authorship and other aspects of research partnerships [30, 47, 49, 66, 84]; setting up appropriate measures to limit the public-to-private brain drain [30]; especially for young academics, strengthening collaboration [21, 30, 41, 47, 48, 57, 60, 62, 64, 69, 71, 73, 75, 77, 84]; publishing in English journals [30, 31, 73]; strengthening infrastructure [33, 57, 64, 85]; increasing research funding [16, 21, 25, 41, 57, 75, 81, 87]; ICTs [87]; and indexing local journals in the most important databases.

DISCUSSION

Study Geographical Coverage, Common Data Sources, Indicators/Metrics Used, and the Level of Impact

The study established that the majority of the articles focused on assessing research evidence from all African countries as a region, along with South Africa and Sub-Saharan Africa, by comparing the productivity and impact of African countries only. However, the small number of articles found indicates a limited assessment of the evidence available in Africa on different topics to inform future research directions. Measuring the available evidence and its impact helps avoid duplication of efforts, identifies research gaps and areas of intervention, and prioritizes areas of future research focus [106, 107].

We also removed studies with a global focus and studies that combined African countries with non-African countries because, when studied together with the rest of the world, African countries or researchers would hardly appear influential. However, when research output or impact was controlled by a country's GDP, total health expenditure, out-of-pocket health expenditure, or population, some African countries performed better when compared with other countries within and beyond Africa [25]. Hence, there was a need to contextualize the results of research evaluations [25, 75, 108].

Our study established that the most common database used to measure research evidence from Africa was PubMed, followed by WoS and Scopus. These findings agree with previous studies that identified PubMed, WoS, and Scopus as the most common databases for bibliometric and scientometric analyses [105, 109]. However, this finding slightly differs from other studies that reported WoS and Scopus as more common databases than PubMed. Perhaps this difference stems from the limited number of African journals in WoS and Scopus as compared to PubMed [110].

Our study also established that AJOL and AIM, which are the only regional databases that index a majority of African journals, are rarely used as data sources in bibliometric and scientometric analyses. This may be due to the lack of data in a format that allows bibliometric and scientometric analyses [110]. Additionally, AJOL and AIM do not track or provide bibliographic data, such as citation data, which would allow the quantitative measurement of research output. AJOL and AIM should aim to provide citation data for research analysis, or they should develop a separate citation database for African journals [101, 110].

Our study found that there are a number of studies that have reported a gradual increase in research productivity in Africa at the individual, journal, institutional, and country levels. [30, 69, 77, 81], while others reported limited research productivity [44, 80, 84]. However, the visibility and scientific impact of African health research in general were reported to be limited. The present study revealed that research productivity, dominant research topics, and collaboration were the most commonly reported indicators, rather than citation impact or funding. Collaboration was common with High-Income Countries (HICs) due to funding, as compared to collaboration among African countries or within a country. Proper selection and description of indicators and use of multidimensional indicators are recommended best practices for reporting research evaluation studies [108].

Subjects or Diseases Studied

This study found that the most common subjects of the studies selected were communicable diseases such as Malaria, HIV, and infectious diseases in general. This finding is not surprising, as infectious diseases have contributed to a greater burden of disease in Africa for decades [8]. A number of articles also focused on non-communicable diseases such as cardiovascular diseases, neoplasms, mental health issues, surgical procedures, and diabetes, which are becoming significant public health concerns in Africa [8] and are predicted to surpass communicable, maternal, neonatal, and nutritional (CMNN) diseases by 2030 [9]. Other studies focused on health systems such as medical education, Ph.D. training, health professionals, institutions, and funding; all of these represent major public health challenges in Africa [7].

Barriers to Africa's Health Research Productivity, Visibility, and Impact

There are a number of challenges that have been reported by these studies, but the most common ones can be categorized into three areas: a lack of research capacity, a lack of motivation and funding, and a lack of collaborations or partnerships. Building research capacity entails developing human resources and research infrastructure. This study identified poor writing skills and a shortage of researchers experienced in writing for publication as common barriers to the productivity, visibility, and impact of African journals, as well as to research impact more broadly [14, 63]. Of the few African researchers identified [30], some of them publish with non-African journals, sometimes due to the prestige offered by high-impact journals, regardless of the readership relevance of their findings [111]. The other aspect of this lack of research capacity involves a weak or absent research infrastructure to support research activities and dissemination [34, 57, 62, 85].

In addition, a lack of research funding affects the funding of journals and authors' ability to pay Article Publication Costs (APCs), which stifles the progress of African researchers [112]. The majority of African journals are owned, supported, and published by professional associations and universities; therefore, they lack resources and skilled staff [1, 113]. Consequently, there is a need for author training in writing for academic publications and for the strengthening of local journals [30, 53, 54, 57, 61, 67, 77]. Chavaro et al. [114, 115], viewed local journals as a supplement to high-impact journals for novice authors who may not easily be accepted by high-impact journals.

Furthermore, African universities, which are hubs for research, face challenges such as heavy clinical and academic workloads and a lack of motivation and incentives [63]. Due to the poor research environment and low pay or lack of incentives,

other academics focus on private practice or consulting, which also leads to a brain drain phenomenon [57, 70, 77, 85]. This finding aligns with those of a previous study, which reported that the research environment in Africa leads to the brain drain of the best academics or researchers [116].

Collaboration has been reported as both a barrier to and a facilitator of African health science research. Some challenges include funders or partners from HICs setting the research agenda [117], occupying first-author opportunities, and deciding where to publish results, usually ignoring local journals [47] Nonetheless, collaboration between HICs and LICs, if properly managed and monitored, can greatly improve the research capacity and impact of African research and should be encouraged [117].

Facilitators of Africa's Health Research Productivity, Visibility, and Impact

The main findings on facilitators of scientific impact can be categorized into three main themes: collaboration and funding; research capacity building; and ICT developments. This study found that collaboration, especially international collaboration, is an important facilitator of scientific impact for African research. Our findings are consistent with a previous study that established international collaboration as a significant factor in citation impact for research in the Global South [118]. Closely linked to collaboration is the issue of research funding, which includes resource sharing, knowledge, and skills through journal partnerships, training, and APC waivers aimed at building African research capacity. Examples of these efforts include the African Journal Partnership program [1], the Author Aid Project [119], the Consortium for Advanced Research Training in Africa (CARTA) [120], and the Sub-Saharan African Network for TB/HIV Research Excellence (SANTHE) [121]. Kasprowicz et al., [121] have argued that African-led initiatives are the optimal approach to improving health research capacity in Africa. Some studies have reported developments in ICTs, such as automated online article submission systems and easy access to research evidence and other resources for research.

Recommendations and Opportunities for Improving Africa's Health Research Productivity, Visibility, and Impact

Based on the findings of this study, three recommendations are made, as these are key areas that cut across the barriers, facilitators, and opportunities of Africa's scientific research impact. These three recommendations are also interrelated and connect to several proposed opportunities. This study recommends building research capacity by training researchers and strengthening research infrastructure; strengthening research funding, especially by increasing local research funding and providing direct research funding to African researchers from external funders; and ensuring equity in research collaboration and partnerships, such as setting the research agenda, making authorship decisions, and choosing publishing avenues [47, 121].

Other areas that complement these three main recommendations include devising deliberate policies that give time to, motivate, and incentivize academics to conduct research and publish their results [122]. Examples of these policies may include reviewing how universities weight teaching versus research in promotion decisions, and ensuring researchers are fairly rewarded for publishing peer-reviewed articles in both local and global north journals [123]. Furthermore, setting up a national research agenda, including its effective implementation, should be a priority for many African countries, as this can be used to negotiate the research agenda during external research funding, partnerships, and collaboration [85]. However, this policy would work better if it were complemented by local research funding. FFinally, local journals and major indexing databases need to keep their online records up to date to accurately reflect current status, since existing data discrepancies contribute to the under-representation of African research and the mislabeling of African journals as predatory.

The findings of this study reveal major gaps in research evidence regarding the measurement of scientific impact of African health science research, particularly with respect to certain countries, alternative data sources, and the relationships between factors such as funding, collaboration, authorship position, and public health challenge studies. More studies should measure the scientific impact of African health science research and contextualize the results with socio-economic indicators. There is also a gap in reviews that summarizes the research landscape of the influence of African health research.

Conclusion

The results of this study reveal significant inequities in the production and visibility of African health science research. These inequities result in limited influence of local research to address local health challenges. The limited availability of African research and the absence of African journals in the commonly used data sources for these studies, such as Web of Science, Scopus, and PubMed, may underreport the productivity and scientific impact of Africa's health research. Despite the reported gradual increase in research productivity, facilitated by several factors such as developments in ICTs, international and local collaboration, funding, and capacity building, there remain numerous challenges that need to be addressed urgently, including building research capacity, increasing local research funding by African governments or institutions, and promoting equity in research collaboration and partnerships. More studies profiling African health science literature are needed to assess productivity, visibility, and scientific impact in order to inform policies, interventions, and the future research agenda.

Limitations

The study may have missed studies that were not indexed in the searched databases. However, we believe that we searched the majority of the sources where African literature is indexed. Additionally, the inclusion criteria, which only focused on Africa or African countries, may have underrepresented the

scientific impact of African research reported in other studies that had a global focus or that combined African countries with other non-African countries. Furthermore, the study acknowledges language limitations during the full screening process. Although our search strategy did not restrict language, full-text screening was conducted only for English-language publications due to the reviewers' lack of understanding of other languages other than English. This represents a significant limitation, as it may have resulted in the exclusion of relevant studies published in French, Portuguese, or Arabic, particularly from regions such as Francophone Sub-Saharan Africa. The exclusion of non-English full texts may have skewed the continental representation of barriers and facilitators, as this has also been identified as one of the key barriers in this study. Future reviews should include multilingual screening to provide a more comprehensive and equitable picture of the African health research landscape.

AUTHOR CONTRIBUTIONS

AS conceived the study concept, collected data and drafted the manuscript, edited the final version. AS and KW screened the articles. KW, Y-FC, OU, and JI reviewed, made comments and edited the manuscript. KW, Y-FC, OU, and JI also supervised the work as it contributed to an academic degree for AS. All authors contributed to the article and approved the submitted version.

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CONFLICT OF INTEREST

The authors declare that they do not have any conflicts of interest.

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The author(s) declared that generative AI was not used in the creation of this manuscript.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: https://www.ssph-journal.org/articles/10.3389/phrs.2026.1608231/full#supplementary-material

SUPPLEMENTARY TABLE 1 | Full details of the included articles (Africa, 2024).

SUPPLEMENTARY TABLE 2 | Data extraction tool (Africa, 2024).

SUPPLEMENTARY TABLE 3 | Search strategies for the selected databases (Africa, 2024).

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