

General

Access to Healthcare in Rural Communities: A Bibliometric Analysis

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Introduction

Access to healthcare is defined by being able to receive regular checkups, specialist appointments, immunizations, procedures, and surgeries within a reasonable timeframe and without restrictive barriers.

Methods

The Web of Science database was used to collect 4,745 articles published relating to the keywords “rural”, “access”, and “healthcare”. These articles then underwent bibliometric cataloging by country, journal, and keyword using VOSviewer 1.6.19.

Results

Between the years 2015 and 2022, the United States emerged as the predominant publisher in the field. From 2015 to 2019, the United States accounted for 47 percent of the total articles published. However, in the subsequent years of 2020 to 2022, there was a slight decline of 3 percent in the volume of U.S. publications. Australia secured the second position in terms of publications within the aforementioned timeframe of 2015 to 2022. England had the third most publications during the time between 2015 to 2022. The prevalence of articles containing the keyword “disparity” ranged between 7 percent and 12 percent throughout this period. Plus One exhibited prominence by contributing 5.025381 percent of all publications pertaining to access to rural medicine during the years 2015 to 2019 thereby establishing itself as the leading publisher in this domain. However, in 2020, the International Journal of Environment suppressed Plus One by publishing the highest number of articles related to rural healthcare. Subsequently, the BMC Health Services Research claimed the leading position in the years 2021 to 2022.

Conclusion

An exploration of who is contributing to the discussion of access to healthcare in rural communities shows that the field and number of publications is growing, and that a focus on disparities is emerging, creating an environment surrounding rural health focused on researching equitable care.

INTRODUCTION

Access to healthcare is an essential component of a healthy society. It means that individuals can receive necessary medical care when they need it, without worrying about financial barriers or socio-economic restrictions that will prevent them from receiving healthcare. Living in a rural area is one such barrier to accessing healthcare with trends showing a higher mortality rate from cancer, heart disease, stroke and higher rate of excess deaths.^{1,2} With this in mind, 43% of the world’s population lives in rural areas.³ Access to healthcare ensures that people can receive preventative care, such as regular check-ups and immunizations, and that they can receive treatment for illnesses and injuries. It also means that people can receive care for dis-

eases like diabetes or heart disease which can improve their quality of life and prevent more serious complications. This paper will explore the context behind healthcare for the rural population, and then analyze publications over the last seven years to extrapolate the main actors and keywords around the discussion of access to health in rural areas.

There are countless barriers that prevent people from receiving proper timely healthcare, and addressing these barriers can help us build better healthcare for everyone in all regions. There is a need for timely healthcare refers to when patients receive care they need without unnecessary delays like long wait times for appointments, delayed procedures or surgeries, or even a lack of transportation to hospitals. Due to the nature of rural communities being re-

mote they often lack larger facilities or funding, leading to poor access in comparison to their urban counterparts. Other such disparities are in access and use of health information sources, a shortage of specialist doctors and limited media exposure all are huge factors that play into rural communities' lack of access to healthcare or health literacy.⁴

The main objective of this study is to analyze the landscape of research publications on access to healthcare in rural areas. This paper analyzes a research database for trends in keywords, countries, and journals about the topic "access to healthcare in rural areas." This paper also aims to give valuable insight on the trends over time from the years of 2015-2022. In order to enact change in how to approach solving disparities in access to rural healthcare, this study summarizes trends of research in the field now as to better understand who is leading the conversation and what they are saying about it.

METHODS

A search was conducted using the Web of Science database on 4,745 articles published from 2015-2022 relating to the keywords "rural", "access", and "healthcare". This database was used due to its reputation as a vast repository for scientific research and also because of the uniformity of its data. These articles were then bibliometrically analyzed using VOSviewer 1.6.19, a free open source tool for analyzing the bibliometric data of articles. Trends were analyzed for each year and data was collected on which countries and journals publish more articles on access to rural healthcare per year. Key words were also assessed by their occurrence in the abstracts and articles examined to identify points of interest, research trends and what topics are being discussed in specific regarding access to rural healthcare. This database was used due to its reputation as a vast repository for scientific research and also because of the uniformity of its data.

RESULTS

From 2015 to 2019, the United States was the most published country accounting for 47 percent of the total articles on access to healthcare in rural areas [Figure 1]. During the COVID and post-COVID years 2020 to 2022 the US publication majority declined 3 percent. Australia is in second position in terms of publications contributing 29% of the articles from 2015 to 2022. England had the third most publications between 2015 to 2022 at 23% [Figure 2]. The prevalence of articles containing the keyword "disparity" exhibited an upward trend being used in 7 percent of articles during 2015 and 12 percent during 2022 [Figure 3 and 4].

Plos One provided 5% of all publications pertaining to access to rural medicine from 2015 to 2019 establishing itself as the leading journal publisher [Figure 5]. In 2020, the International Journal of Environment Research and Public Health (IJERPH) surpassed Plos One by publishing the highest number of articles related to rural healthcare (3.6%).

BMC Health Services Research claimed the leading position in 2021 (4.3%) before being retaken again by IJERPH contributing 3.8% of articles in 2022 [Figure 6].

DISCUSSION

Achieving equitable access to healthcare in rural communities has long been a challenge, and its effects are felt in the higher adjusted mortality rate individuals living in rural areas experience when compared to their metropolitan counterparts.² With the onset of the COVID-19 global pandemic, issues in these rural communities of staffing healthcare positions and facilitating routine visits were only exacerbated.^{5,6} The bibliometric analysis performed in this study sheds light on the state of the literature surrounding access to healthcare in rural areas, and allows for an understanding and comparison of the countries, journals, and keywords being used to discuss access to rural healthcare pre and post pandemic.

The United States of America generated 44% of all articles reviewed on access to rural healthcare from 2020 to 2022, down 3% from 2015 to 2019. This decrease in percent of total publications comes in spite of a 34% increase in the number of publications on access to rural healthcare coming from the US. What this is indicative of, and is also reflected by the increase in percentages of access to rural healthcare publications from Australia and the UK, is a diversification of the country of origin of these publications, particularly during and post pandemic. Additionally they reflect more proactive efforts in producing research from these countries than is being made in the US.⁷ These endeavors are worth noting when considering a report from the International Labor Organization that asserts that 56% of people living in rural areas globally lack critical healthcare access.⁸

A trend observed in the journals publishing articles on access to rural healthcare is their further specification into rural healthcare over time. From 2015 to 2019 research on rural healthcare was led primarily by PLOS one, an interdisciplinary journal. By 2020 IJERPH, a journal specialized in public and environmental health, published the most articles (3.6%).

Of the keywords analyzed only disparity stood out as significant experiencing 5% increase in occurrence from 2015 to 2022. This increase is likely representative not of a newfound need, but rather newfound awareness of the state of medicine and rural healthcare access.⁹⁻¹¹ This happened concurrently with recognition of the rural healthcare crisis by the US government with the introduction of bills like the Rural Hospital Support Act.¹²

This bibliometric analysis was performed on articles extracted from the Web of Science database. It is understood that articles not indexed in the Web of Science were excluded from this study, and that future iterations of this project could be improved by encompassing a variety of databases.

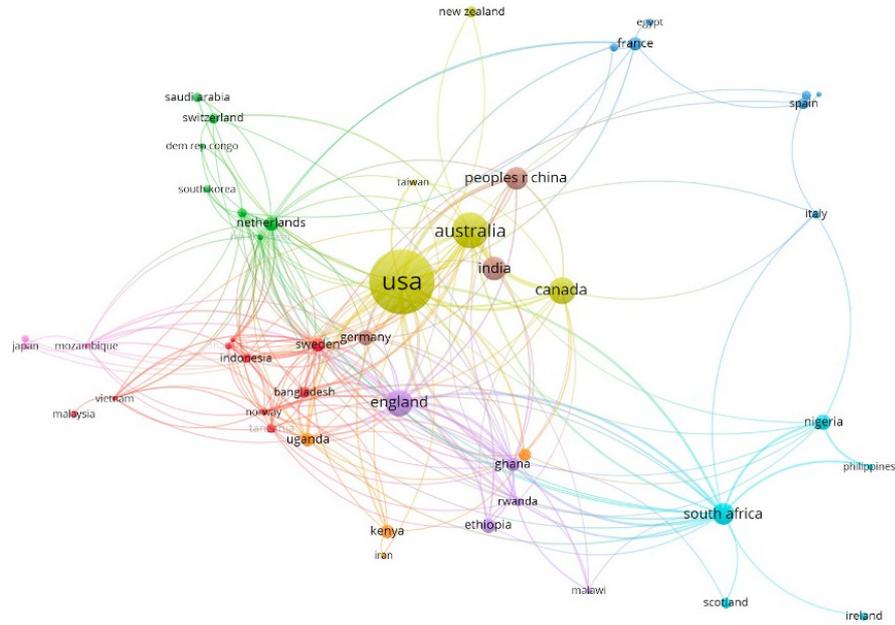


Figure 1. Geographical collaboration network of publications 2015-2016



Figure 2. Geographical collaboration network of publications 2021-2022

CONCLUSION

This analysis yields valuable insights into the climate of publications on access to healthcare in rural areas, exhibiting the major lead in publications from the US, Australia, and England and further trends and attention into disparities when discussing rural healthcare. This study offers guidance for authors and editors on which journals tend to publish access to rural health articles regarding accessibility as well as which countries have more publications throughout the years.

The positive trend in mentions of disparity in access to rural healthcare, as well as the overall increase in publications, is a step in the right direction towards more equitable care, but for change to really occur institutions need

to rethink the way barriers to care are researched in regards to rural healthcare. Future studies could examine research into these barriers such as lack of physicians, healthcare literacy, and transportation to hospitals as well as monitoring the future trends that may occur in the field.

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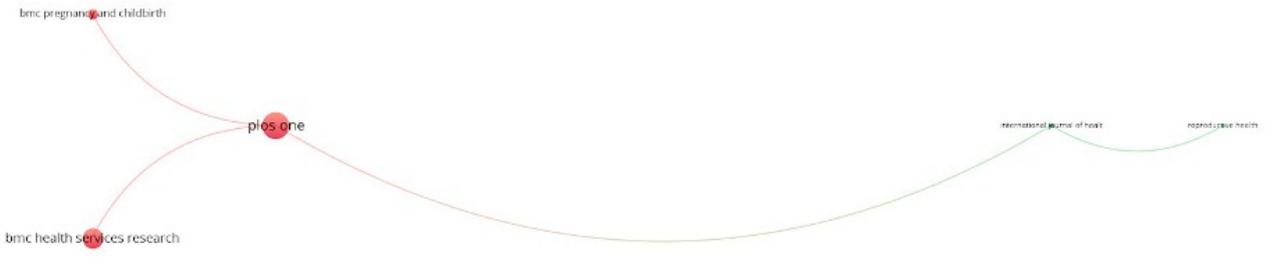


Figure 5. Map of Most cited journals 2015-2016



Figure 6. Map of most cited journals 2021-2022

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