Trends in Disparity Research in Recent Telemedicine Literature

Donovyn Ray, Gabrielle Arreglo, Eshika Arora, Joseph Or, Carys A.
Corresponding Authors: Dhruva Bhat, Fatima Khan Lookmanji, and Edmundo Long
ThinkNeuro and UC Berkeley

Introduction

Prior to the pandemic, the use of virtual healthcare systems was relatively limited, with specific disparities being present against disenfranchised and low-income communities. This trend would continue until the years of the pandemic, which saw significant rises in the use of telemedicine across the United States. Although we can assume an increase in general accessibility amongst challenged communities during this period, many studies have voiced that a degree of inequality in telehealth accessibility persists.

Objectives

To identify the current trend in literary focus on telehealth disparities in the United States following the pandemic.

Methods

A bibliometric analysis was conducted utilizing the Web of Science, RStudio, and Excel to determine the types and relevance of the subjects covered in modern research. During our preliminary search, we established our criteria using the following keywords: Telemedicine, Disparity, Rural, and Minority. Following this phase, we collect the top 100 most cited sources based on our keyword criteria and develop a series of representations to identify relevant studies focusing on telehealth inequality between 1998 and 2023 as shown in Figure 1.

Figure 1: Web of Science Search

Results

Within the 100 most cited articles, the most frequent recurring key words were "telemedicine," "care," "disparities," "technology," and "management." The frequency of these terms are plotted against time from 1998 to 2023 in Figure 2 and suggest a strong upward trend beginning in 2009. Interestingly, the key word "disparity" only begins to appear after 2011 and is the latest occurring of the most frequent keywords.

The most relevant authors, as shown in Figure 3, are relatively spaced out in terms of the frequency of articles that occur within the one hundred most cited studies. The most frequently referenced author is published three times, suggesting that scope of researchers who are exploring telemedicine disparity is broad and not overly concentrated between a few scientists.
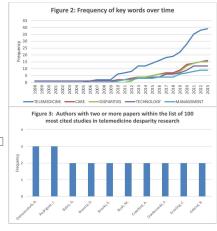
Figure 2: Frequency of key words over time

Figure 3: Authors with two or more papers within the list of 100 most cited studies in telemedicine desparity research

Conclusion

Our findings of the trends in telehealth research conducted in the United States are a natural reflection of the significant health-related events taking place within the country. The noticeable increase in telemedicine as a research topic after 2020 demonstrates the need for adamant attention to the development of the technology. New findings and resources come with an increase in technological accessibility.

However, the progression of telehealth medicine require a more focused approach to identifying the systematic inequalities preventing disenfranchised and low-income communities from accessing such medical resources. Figure 2 shows an increase in referencing disparities as a subject. After reviewing the publications from our most cited authors, displayed in Figure 3, the disparity was defined relatively broadly and was predominantly assessed in a survey questionnaire format. Conducting a series of studies with widely recognized metrics of socioeconomic inequality with more extensive and diverse population data is essential to provide more opportunities to expand digital healthcare to deprived regions of the country.

References

- Web of Science Database
- R-Studio and Biblioshiny Library
- National Library of Medicine