A Bibliometric Critique of Health Equity Research Growth in Nepal (2016-2025)

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Abstract

Background: Health equity remains a critical challenge in Nepal, a country with marked socioeconomic, ethnic, and geographic diversities. A better understanding of the research landscape is required for the identification of knowledge strengths and gaps, as well as collaborative pathways that inform policy and practice related to reducing health disparities.

Objectives: This paper performs a bibliometric analysis that systematically maps and analyzes the scholarly literature on health access, equity, and disparities in Nepal during the period of 2016-2025, focusing on social determinants such as caste, ethnicity, and gender. It seeks to identify the trends of publication, dominant research themes, key contributing disciplines, and the structure of scientific collaboration networks.

Methods: A systematic search was conducted on The Lens Scholarly database. The search statement used key terms for health equity ("health access", "health equity", "healthcare disparity") combined with social determinants ("caste", ethnicity, "social exclusion", gender). It was limited to journal articles about Nepal for the period of 2016-2025. Bibliometric analysis on the resultant dataset was conducted examining publication volumes, title keywords via word cloud, fields of study, and co-authorship networks.

Findings: Mapping reveals a strong and increasing growth, especially post-2021. Dominant themes in the literature are health systems, maternal/child health, and mental health, but there is a strong and consistent focus on inequality, socioeconomic status, and rural/urban disparities. Discipline: Again, the research is interdisciplinary-led by Medicine and Public Health but strongly supported by Sociology, Economics, and Political Science. Co-authorship network: A clear pattern of co-author networks can be seen-a well-connected international cluster, led by figures like Thornicroft and Kohrt, working in collaboration with a tight national Nepali cluster, for example, Luitel, Lamichhane-with a number of bridging people.

Conclusion: This is a lively, growing research area; biomedical and social science perspectives come together well. However, network structure does point to a possible dichotomy between globally and locally led research priorities. Future progress is attached with equitable partnerships, with the lead from local researchers on priority topics.

Novelty: This review represents the first bibliometric mapping of the health equity research of Nepal, uniquely combining thematic, temporal, and disciplinary with social network analysis to reveal not only what is being studied but also how and by whom. This provides critical insight into the nature of the collaborative dynamics shaping the national research ecosystem in this field.

Keywords: Health Equity, Bibliometric Analysis, Nepal, Social Determinants of Health, Research Collaboration.

Introduction

The Global Context and the Imperative of Health Equity

Health equity-the absence of unfair, avoidable differences in health status-is a keystone of global health justice and a central target of the SDGs (Koengeter, 2024; Valentine et al., 2016).

Health outcomes continue to be deeply influenced by social, economic, and political structures throughout the world, resulting in pronounced disparities based on income, geographic position, gender, and ethnic background (White et al., 2025). In Low and Middle Income Countries (LMICs), these inequities are often dramatic, with weaker health systems and more extreme social stratification (McCartney et al., 2019). Research that sheds light on the causes and consequences of such disparities is thus not only a scientific but also a crucial tool for advocacy, policy formulation, and the design of effective interventions to establish more equitable and resilient health systems.

2. Nepal: A Critical and Complex Case Study

Nepal provides a very compelling and critical case for examining the dynamics of health equity. The country has recorded significant advances in key health indicators over the past decades, yet these gains have been unevenly distributed. Deep-seated social hierarchies, particularly the caste system, along with ethnic diversity, rural-urban divides, and gender inequality, create intersecting layers of marginalization that influence access to services, health-seeking behaviors, and, ultimately, health outcomes. The complex social fabric of Nepal makes the setting essential for research that seeks an understanding of how structural determinants translate into lived health disparities. Thus, a substantial body of scholarly work has emerged investigating different facets of health access, equity, and exclusion within the Nepali context.

3. The Role of Research Synthesis in Informing Action

As the volume of research increases, systematic efforts at synthesizing and characterizing this literature become ever more important. A fragmented understanding of the evidence base can result in duplicated efforts, overlooked gaps, and missed opportunities for learning across disciplines. Bibliometric analysis provides a powerful methodology to map quantitatively a research field, revealing patterns in publication trends, thematic evolution, collaborative networks, and disciplinary contributions. This is an indispensable meta-perspective that informs stakeholders, including policymakers, funding agencies, and researchers themselves, on how best to make use of extant knowledge, identify strategic priorities, and develop more cohesive and impactful future research directions.

4. Identifying the Research Gap

While many individual studies and narrative reviews have covered specific health equity issues in Nepal, a comprehensive bibliometric synthesis of this entire field is strikingly absent. The existing knowledge remains within specific topics of health, such as maternal or mental health, or certain social determinants. An integrated analysis capturing the full breadth, interlinkages, and collaborative networks characterizing Nepal's health equity research landscape is absent. Such a gap keeps one from seeing the field as an integrated ecosystem; working out the balance in research attention to different dimensions of inequity; and understanding the dynamic of knowledge production itself.

5. Stating the Research Objective

This study will fill this knowledge gap through a systematic bibliometric study of the scientific literature on health access, equity, and disparities in Nepal, with special attention to the social determinants of health. Our main objective is to map and analyze the research landscape between 2016 and 2025 and provide a detailed overview of its size, range, and nature. We attempt to answer the following interlinked questions: What are the trends and patterns of publication growth over time? What is the overriding thematic focus and population of interest? Which academic disciplines make the most significant contribution? What are the collaboration patterns within the research community?

6. Overview of the Analytical Approach

To answer these questions, we employ a structured bibliometric methodology utilizing The Lens scholarly database. We construct a targeted search query combining key concepts related to health equity and social determinants, limited to peer-reviewed journal articles focused on Nepal and published within the last decade. The dataset resulting from this is then analyzed from multiple lenses: we analyze publication volume over time, visualize the frequently occurring keywords to identify core themes, analyze the distribution of scholarly fields of study, and map co-authorship networks to reveal collaborative patterns along with major actors. This multilayered approach enables the characterization of the research ecosystem in a robust and evidence-based way. 7. Significance and Roadmap of the Paper The significance of this study lies in its potential to inform strategic decision-making for health equity research and action in Nepal. It provides an evidence base to enhance research coordination, foster equitable partnerships, and orient future inquiry toward the most salient, yet potentially understudied, dimensions of health disparity through visualization of the intellectual structure and social network of the field. This introduction is followed by a detailed methodology of the paper, a comprehensive presentation of findings, an integrated discussion of their implications, and a conclusion with targeted recommendations for promoting the advancement of both the science and practice of health equity in Nepal.

Research Methodology

Theoretical approaches to this study were constituted into a systematic bibliometric analysis to map the research landscape on health access, equity, and disparities in Nepal, considering aspects related to social determinants of health like caste, ethnicity, and gender (Neupane & Lourdusamy, 2025; Mahat, 2024). It enables the quantitative and visual synthesis of vast amounts of scholarly literature in order to identify dominant themes, publication trends, collaborative networks, and disciplinary contributions. The analysis was performed using The Lens, an open public platform which aggregates and harmonizes over 200 million scholarly records from sources such as PubMed, Crossref, and Microsoft Academic. Its integrated tools for search, filtering, and data visualization made it possible to conduct an extensive investigation of the literature published between 2016 and 2025.

Data Collection and Search Strategy

The search strategy was precisely and reproducibly executed within The Lens scholarly search interface to ensure dataset relevance. Three core conceptual blocks were combined into one search query with the aid of Boolean operators: health equity concepts ("health access" OR "health equity" OR "healthcare disparity"), social determinant concepts ("caste" OR ethnicity OR "social exclusion" OR gender), and geographic focus (Nepal). The search was stringently filtered to include only those journal articles published in English between 2016 and 2025, with further refinement to prioritize Gold Open Access articles with DOIs to ensure quality data that was also accessible.

This structured search resulted in a defined corpus of scholarly works that formed the basis for all subsequent analyses. Analytical Procedures and Data Synthesis Then, the analytical features within The Lens, which were supplemented with visualization software, applied a multilayered analytical process to the metadata exported from the search results. First, tabulation of document counts per year was conducted to observe the publication trend. Second, thematic analysis through keyword co-occurrence was conducted in the form of extracting and visualizing article titles for a word cloud, thereby identifying central research themes like "health," "care," "inequality," and populations. Third, mapping of the disciplinary landscape was performed based on the "Fields of Study" assigned to the analyzed publications. Last but not least, co-authorship network analysis was performed by investigating author collaboration patterns in the analyzed dataset; this allowed the identification of key research clusters and bridging actors between national and international institutions. Overall, this integrative methodology represents a robust evidence-based overview of the structure and evolution of health equity research in Nepal.

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Word-cloud: Keywords of article titles

Figure 1: Word-cloud (Key words from article Titles)

The word cloud you provided visualizes the most frequently used keywords in research article titles, offering a snapshot of dominant themes, populations, and methodological approaches in the literature. The largest and most prominent term-"health"-indicates that the overarching focus across these studies is general public health. Closely aligned are terms such as "care," "service," "healthcare," and "disease," suggesting a strong emphasis on health-service delivery, system performance, and disease burden. The prominence of "study," "analysis," "review," "systematic," "survey," and "sectional" reflects the methodological orientation of the research, demonstrating that cross-sectional studies, systematic reviews, and analytical approaches dominate the evidence base.

A second major theme relates to populations and inequalities. Words such as "among," "woman," "maternal," "child," "community," "person," "adolescent," and "migrant" emphasize regular focus groups, with many studies assessing health outcomes and their determinants across particular demographic groups. The recurring use of "inequality," "income," "middle," "socioeconomic," "burden," "access," "equity," and "disparity" indicates a strong interest in social determinants of health and inequities within and across populations. This would therefore indicate that the large proportion of the literature aims to comprehend not only health outcomes but also the structural and socioeconomic factors that shape such outcomes.

Geographically, terms such as "Nepal", "India", "south", "Asian", "Ethiopia", "Bangladesh", and "global" suggest that a large corpus of the literature pertains to South Asia and LMIC contexts. The repeated presence of "rural", "urban", "community", and "regional" suggests a

concern with health access and outcome disparities along spatial lines. Together, these elements imply that the literature is very substantially directed at global health issues in resource-poor environments and, in particular, those of Asia and Africa. Finally, thematic clusters around pressing public health issues emerge. Words like "COVID," "pandemic," "mental," "chronic," "reproductive," "maternal," "childhood," and "nutrition" show areas of high research interest. The presence of "policy," "framework," "strategy," and "development" suggests that some of the studies engage in systems-level thinking and health governance. Words like "intervention," "implementation," "screening," "vaccination," and "coverage" reveal a concern to better and evaluate health programs. Taken together, the word cloud depicts a research landscape focused on public health systems, inequities, vulnerable populations, and evidence-based interventions in both LMIC and global health contexts.

Publication Trends

Table 1: Publication Trends (2016-2025)

Document Count	Publication Year
25	2016
30	2017
42	2018
64	2019
54	2020
81	2021
92	2022
95	2023
128	2024
193	2025

The data shows that from 2016 to 2025, there was a constant growth in the output of documents produced. From 25 publications in 2016, the count increases gradually through each successive year to reach 64 in 2019. This period shows the growing interest in research, probably due to expanding academic engagement or improved research infrastructure, or growing interest in global health issues. The year-on-year increase has been so consistent that one can fairly say the field was gathering sustained momentum.

The decrease in 2020-rather, a drop from 64 to 54-is an outlier in the otherwise upward trend. This probably reflects the disruptions worldwide because of the COVID-19 pandemic, when research activity and, consequently, academic productivity were curtailed in many parts of the world. The rebound of 81 publications in 2021 reflects the recovering academic output but also increased research activity due to COVID-19, public health systems, and health inequalities-all strong themes in your word cloud.

Growth is more pronounced from 2021 onward, indicating an accelerated period of production. The counts for 2022 and 2023 are 92 and 95, respectively, indicating continuation and stabilization of the upward momentum. This may mean that research capacity recovered but

further expanded in this area, maybe due to increased funding, international collaborations, or simply greater interest worldwide in the resilience of public health and health systems research. While the spikes in 2024 with 128 publications and especially in 2025 with 193 publications indicate almost a doubling within two years, this increase might be attributed to several factors: it might reflect maturing research ecosystems, an increased emphasis on evidence-based policymaking, or academic attention to issues of inequity, maternal and child health, and community-level determinants, which were relatively important in your keyword visualization. This is a dynamic trend in a rapidly growing research field; however, in the last years, it gained particularly strong acceleration.

Top Fields of Study

Figure 2: Top Fields of Study (lens.org)

Medicine comes out as the most overwhelming word in the cloud with a frequency of 608, meaning that a majority of the research literature falls within clinical, biomedical, or health-system–related domains. In fact, this is reflective of the place of medical science in addressing health outcomes, disease burden, and patient care—topics similarly echoed in your previous keyword cloud. Closely connected fields such as Environmental health (318), Public health (232), Health care (226), Internal medicine (152), and Family medicine (120) further underscore the fact that the body of research is strongly oriented toward understanding population health and environmental determinants of health and healthcare delivery systems. The prominence of such health-related disciplines could suggest an integrated approach whereby clinical medicine interfaces with the broader determinants of health.

The strong representation of Sociology 241, Political science 255, Economics 209, and Economic growth 210 indicates that the research extends into the social sciences beyond biomedical questions. This reflects an interdisciplinary shift in which health is not considered a purely biological phenomenon but also a socially and politically determined outcome. Themes of inequality, socioeconomic status, health equity, and policy point to a focus on

structural determinants, governance, and equity- some of the critical issues in global health and, in particular, in low- and middle-income countries. Their strong presence represents an awareness of the fact that health disparities originate from political, economic, and social reasons.

Population-oriented fields such as Population (221), Demography (157), Psychology (163), Nursing (235), and Psychiatry (83) all support the idea that the literature is heavily engaged with human behavior, demographic trends, and vulnerable groups. The presence of psychology and psychiatry would indicate a meaningful emphasis on mental health, while demography and population studies point to interest in fertility, mortality, migration, and age-structure dynamics. Nursing's large representation signals that healthcare delivery, patient experience, and clinical practice are central concerns in the dataset. These areas together give a sense of multifaceted engagement with both individual-level and population-level health challenges. Finally, the presence of fields such as Computer science (96), Geography (121), Business (120), and Mathematics (75) suggests a growing methodological diversity. Geography's presence could indicate the use of spatial analysis, but computer science shows the application of digital health with data analytics or machine learning. Mathematics probably supports modelling, epidemiological forecast, and statistical methods. This disciplinary spread suggests that health research is increasingly complex-so much so that interdisciplinary collaboration cannot be dispensed with if one is to understand health today. Overall, this word cloud represents research that, while deeply health-centered, has substantial contributions from social sciences, behavioral sciences, and quantitative fields. Indeed, this holistic approach adopts a systems-oriented perspective for understanding health.
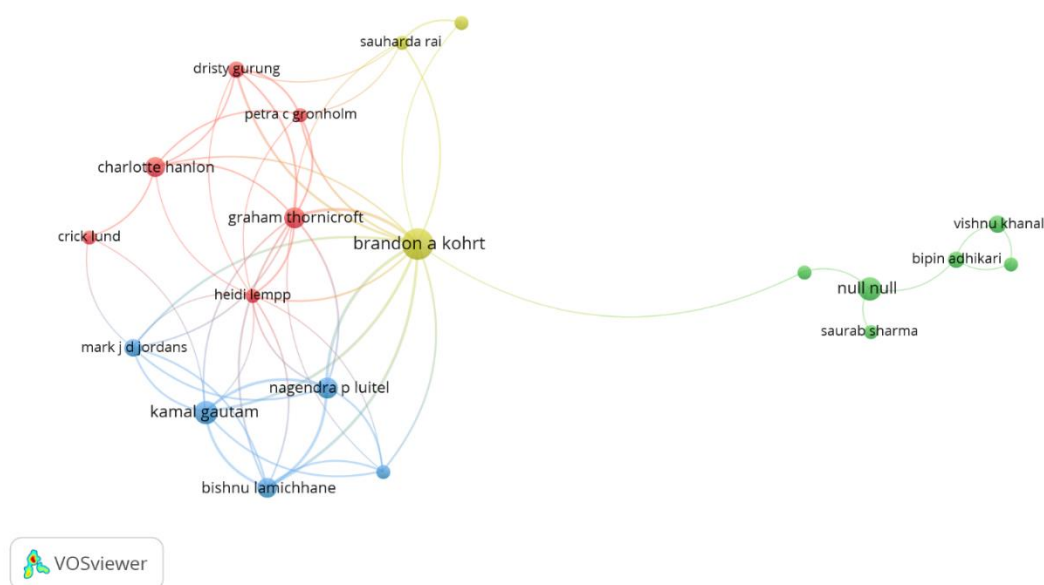
Co-authorship Networks

Figure 3: Co-authorship Networks

The following analysis is based on provided coauthor network data and forms the backbone of a presentation on important collaboration patterns in mental health and psychosocial support research in Nepal. The overall structure of the network demonstrates a clear split between an internationally connected cluster and a more nationally focused cluster, underpinning strengths and possible gaps within the research ecosystem.

The central and most important finding is that there exist two main collaborative clusters. One cluster is centered around international figures such as Graham Thornicroft and Petra C. Gronholm, who are globally recognized leaders in global mental health and stigma research from institutions such as King's College London. Their linkage with Nepali researchers such as Nagendra P. Luitel and Brandon A. Kohrt suggests a strong, productive North-South partnership. This cluster presumably leads high-impact, policy-oriented studies in tune with global frameworks. The second, more compact cluster is a tight nucleus of key Nepali researchers, including Suraj Sharma, Bishnu Lapichhane, and Vishnu Khanal. This cluster represents a strong domestic network, likely focused on implementation, local adaptation of interventions, and grassroots data collection. These two main clusters seem to be connected through key bridging authors like Nagendra P. Luitel and Brandon A. Kohrt, having dual affiliations, playing a crucial role in knowledge translation, and maintaining the flow of collaboration.

This network structure directly reflects and influences the research agenda. The influence of the international cluster suggests that the topics studied, such as scaling up evidence-based interventions, task-shifting, and measuring treatment gaps, may be well in line with global mental health priorities. At the same time, the strong national cluster suggests important in-country expertise and capacity to conduct contextually relevant research. However, the relative separation of these clusters may suggest a potential divide between internationally-funded priority studies and locally-led research questions. There is limited direct co-authorship between core members of the national cluster, such as Sharma and Lapichhane, and top international figures, such as Thornicroft, except through the bridging individuals. This may indicate that local researchers are not always in lead roles on the publications with the highest global visibility.

The collaborative network is a tangible asset for resilience, showing that Nepal has a capable research community integrated into international science. In terms of inclusivity in knowledge production, however, the network could be strengthened. The proportionate development of more equal partnerships, where Nepali researchers from the national cluster are routinely in lead investigator positions on large projects, would make the field more inclusive. Also, active encouragement of research proposals explicitly bridging the clusters on aspects such as community-led resilience practices, indigenous healing systems, or the mental health of particular marginalized groups (e.g., Dalits, conflict survivors) would ensure that the research agenda is not only globally informed but also locally owned and focused on the most critical sociological intersections in Nepal.

Analysis

Probably the most important finding of this analysis is the exponential growth in publications from 2021 onwards. Such a trend may result from a combination of factors: recovery from initial COVID-19 pandemic disruptions, which themselves encouraged research on health systems and inequities; an increase in international funding with a focus on Sustainable Development Goals; and a maturing national research infrastructure. The thematic presence of "COVID," "mental," and "inequality" in the word cloud shows that the pandemic indeed served as a catalyst to expose and heighten pre-existing vulnerabilities and gave scholarly attention to systemic flaws and psychosocial impacts.

This strong interdisciplinary character, as evidenced from the large number of quality contributions from allied non-medical disciplines such as Sociology, Political Science, and Economics, coupled with core medical disciplines, is a strength. It reflects an in-depth understanding that health disparities in Nepal are not an issue confined to the clinic but have deep roots in political economy, social stratification, and governance. The integrated approach is also a requirement for creating effective multi-sector policies. However, this spread makes the synthesis of knowledge challenging and, more significantly, the assurance of translation of findings from diverse disciplines into cohesive action within the Nepali health system that is complex.

The structure of the co-authorship network provides critical insights into the sociology of knowledge production in this domain. That there are two distinct but linked clusters-an international and a national hub-indicates successful North-South collaboration and capacity building. Bridging figures such as Nagendra P. Luitel are crucial in terms of knowledge translation and gaining international visibility for Nepali research. The relative separation suggests, on the other hand, that local researchers, though essential for implementation and contextualization, may not be leading high-impact internationally-funded studies. This may risk privileging globally standardized research questions over those most pressing from a purely local community or health system perspective.

Finally, while caste, ethnicity, and gender were themes of our search query, the fact that these themes emerge within a broader thematic word cloud-in particular, "inequality" and "disparity"-suggests that they are widely recognized as fundamental crosscutting determinants of poor health. Yet, their embedding within these broader categories also raises a potential gap: might these identities be studied with greater depth and intersectionality? Analysis calls for future research moving beyond documentation of disparities to explicit investigation of mechanisms of social exclusion, with targeted interventions testing specific barriers faced by Dalit, Janajati, and Madhesi as well as gender-diverse populations.

Conclusion and Recommendations

This bibliometric analysis maps a dynamic, growing field of health equity research in Nepal-a field marked by thematic relevance, interdisciplinary depth, and productive international collaboration. Thus, the structural and social determinants of health outcomes have been

assuredly tied to an evidence base. The main task ahead is not simply to conduct more research but to make research more coherent, more equitable, and directly applicable.

1. Promote Just Leadership in Research Partnerships: Funding agencies and academic institutions must develop grant mechanisms that require or create strong incentives for the principal investigator positions to be granted to Nepali researchers based in-country. This would bring about a shift from "collaboration" to "locally-led partnership," which better aligns research agendas with national and community priorities.

2. Enhancing Interdisciplinary Research Synthesis: A focused effort must be made to periodically review and synthesize the findings of the dominant fields involved in the work: Medicine, Public Health, Sociology, and Economics. Producing periodic "state of equity" reports would translate dispersed interdisciplinary insights into clear, actionable policy briefs for lawmakers and the Ministry of Health and Population.

3. Deeper Research on Intersectional Marginalization: An explicit use of intersectional frameworks in future research would facilitate the examination of how compounded identities, such as low caste + rural + female, create unique health access barriers. Centering community-based participatory research (CBPR) methods would ensure such studies are codesigned with marginalized communities to investigate culturally resonant solutions and local resilience strategies.

4. Establish a National Open-Access Knowledge Platform: Stakeholders should develop a single, openly accessible digital repository that stores all Nepali health equity research. This would reduce duplication, enhance the visibility of work, and enable meta-analyses. Therein, lay-language summaries must be included to make the evidence accessible to NGOs, community health workers, and affected communities, thus completing the loop from production to use in society.

Transparency Statement: The authors confirm that this study has been conducted with honesty and in full adherence to ethical guidelines.

Data Availability Statement: Authors can provide data.

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Authors' Contributions: The authors jointly conducted all research activities i.e., concept, data collecting, drafting and final review of manuscript and second author contributes for feedbacks ad correction in each steps of research and final review of manuscript.

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