



# Mapping the Global Research Landscape of Service Delivery Innovations in Lifestyle Disease Management and Interventions: A Bibliometric Exploration

\*Tanmoy Acharjee<sup>1</sup>, Deepjyoti Choudhury<sup>2</sup>, Rajkinkar Chakraborty<sup>3</sup>, Amlan Baruah<sup>4</sup>

<sup>1</sup> Research Scholar, Department of Business Administration, Assam University, Silchar, India  
Mail ID- tanmoyacharjee1996@gmail.com

<sup>2</sup> Associate Professor, Department of Business Administration, Assam University, Silchar, India, Mail ID-  
choudhurydeepjyoti@gmail.com

<sup>3</sup> Research Scholar, Department of Social Work, Assam University, Silchar, India, Mail ID- rajkinkarchakraborty111@gmail.com

<sup>4</sup> Junior Research Fellow, Department of Business Administration, Gauhati University, Gauhati, India, Mail ID-  
baruahamlan0@gmail.com

## Abstract

The escalating global burden of lifestyle-related non-communicable diseases (NCDs) has amplified the need for innovative service delivery models to improve prevention and management. This study provides a comprehensive bibliometric analysis to map the intellectual structure, evolution, and key trends of the global research landscape in this domain. A systematic search of the Scopus database for the period 2015–2024 yielded 255 documents, which were analyzed using VOSviewer to examine publication trends, collaboration networks, and thematic clusters. The analysis reveals a significant upward trend in publications, with a pronounced peak in 2021, suggesting the COVID-19 pandemic catalyzed research into remote and resilient healthcare delivery for chronic conditions. Research output is geographically concentrated, with the United States, United Kingdom, and Australia as the most prolific contributors, though institutional and author networks demonstrate growing international collaboration. Thematic analysis identifies an interdisciplinary field focused on health promotion, primary healthcare, and systemic healthcare delivery, underpinned by rigorous methodologies like controlled trials. This study presents a quantitative cartography of the field, highlighting its growth, key actors, and intellectual pillars. The findings provide a valuable resource for researchers to identify knowledge gaps, for policymakers to inform evidence-based strategies, and for practitioners to understand the evolving evidence base for innovative NCD management.

**Keywords** - Bibliometric Analysis, Service Delivery Innovation, Lifestyle Interventions, Disease Management, Global Research Landscape

## 1. INTRODUCTION

### 1.1. Background and Context

The global health challenge of the twenty-first century is represented by non-communicable diseases (NCDs) commonly referred to as chronic diseases (World Health Organization, 2022a). As an example of chronic disease categories include cardiovascular diseases, cancer, chronic respiratory disease and diabetes, which, among other characteristics, are prolonged in duration and result from combinations of genetic, physiological, environmental, and behavioral elements (Bloom et al., 2011). The global burden of NCDs is substantial in that they account for approximately 74 percent of all deaths globally, however this burden has disproportionately fallen upon low- and middle-income countries (LMICs), where over three quarters of the fatality rate for NCDs occurs (WHO, 2022a; Bennett et al., 2018). Beyond representing a health issue, the NCD epidemic also represents a significant obstacle to social-economic development and is a contributor to poverty and has an adverse affect upon the functioning of health care delivery systems (Nugent, 2016). The increase in NCD rates is directly correlated to increased prevalence of specific lifestyle related risk factors, which are more common due to globalization, urbanization, and changes in economies (Popkin et al., 2020). Tobacco, alcohol, and unhealthy diets are some of the most common modifiable risk factors contributing to this noncommunicable disease pandemic (GBD 2019 Risk Factors Collaborators, 2020). This includes eating foods that are high in sodium and sugar as well as saturated fat, and being inactive contributes to an obesity epidemic; one of the leading causes of Type II Diabetes, Hypertension, and Cardiovascular Disease globally (Swinburn et al., 2019) – These elements have created a need for a shift in paradigm toward a patient-centered, preventive health model rather than solely focusing on reactive, hospital-based models of health care delivery (Beaglehole et al., 2011).

The challenge of addressing NCDs as a result of lifestyle has led to an increase in service-delivery innovation to improve disease prevention and management (Atun, 2012). Traditional health-care models, which typically focus on

© The Author(s) 2026

D. Choudhury et al. (eds.), *Proceedings of the Indo-Bhutan Social Science Conference 2025 (IBSSC 2025)*,

Advances in Social Science, Education and Humanities Research 1002,

[https://doi.org/10.2991/978-2-38476-561-4\\_25](https://doi.org/10.2991/978-2-38476-561-4_25)

the episodic treatment of acute illness, do not provide the framework for the ongoing management of chronic conditions that are common among individuals with NCDs (Wagner et al., 2001). Service-delivery innovation seeks to increase accessibility, efficiency, and effectiveness of health care by modifying how care is organized, delivered, and funded (Purohit & Patel, 2017). Examples of service-delivery innovations include the inclusion of mental health services in primary care, the use of community health workers to promote health, and the implementation of digital health technologies such as telemedicine and mHealth to monitor and support patients remotely (Agarwal et al., 2019; Khatri & Jusot, 2022). Ultimately, the goal of service-delivery innovations is to establish a continuum of care that enables patients to sustainably modify their behavior in order to better manage their health (Hibbard & Greene, 2013). While there are numerous opportunities to implement service-delivery innovations to address NCDs, global health systems face numerous obstacles when attempting to scale these innovations. Some examples of these obstacles include; fragmented delivery of care, insufficient funding for preventive services, shortages of trained health-care personnel, and the lack of coordination between different levels of care (Kruk et al., 2018). Additionally, primary care – which is widely recognized as being foundational to effective NCD management -- is often under-resourced and disassociated from other levels of care (Rawaf et al., 2020). Successful implementation of service-delivery innovations also require a significant cultural change within health care organizations, as well as the modification of provider and patient behavior (Greenhalgh et al., 2017). Therefore, it is imperative that health-system administrators address the various systemic barriers to achieving sustainable health outcomes in response to the increasing prevalence of NCDs associated with lifestyle.

### 1.2. Literature Gap and Research Rationale

While a substantial body of research exists on individual there is a well-recognized need for a more comprehensive understanding of the service delivery innovation research area and its related lifestyle interventions and NCDs to better understand the service delivery innovation research area (Purohit & Patel, 2017). The existing body of literature typically includes systematic reviews/meta-analyses focused on the clinical efficacy of a specific type of intervention (for example, telemedicine for managing diabetes) and/or narrative reviews addressing the policy challenges in a particular geographic area (Gómez-Olive et al., 2017). These types of studies are very informative; however, they have significant limitations. Specifically, as with many other areas of study, they do not allow for an examination of the intellectual structure of the research field at the macro level or quantitatively. Therefore, they cannot be used to identify the top authors in the area, the most productive institutions and countries, the journals that shape the discussion and provide the foundation for the research, nor how research themes evolve over time (Donthu et al., 2021). As a result, the inability to observe the "big picture" (i.e., the overall intellectual structure of the research field), limits the ability of researchers, policymakers, and practitioners to fully comprehend the organization of knowledge in this area. There are still many key questions that are unanswered: which research themes are trending upwards, and which are lagging behind? what are the dominant knowledge production networks, and are there geographical or institutional silos? how has the field developed since the last major global event (COVID-19)? A comprehensive bibliometric analysis is uniquely positioned to answer these questions because it utilizes quantitative analytical methods to map the scholarly landscape as represented by the published literature and citations (Zupic & Cater, 2015). By examining the metadata associated with a large dataset of academic literature, bibliometrics is able to demonstrate patterns, relationships between concepts and ideas, and trends that may not be evident when reviewing literature in the traditional manner.

As such, the purpose of this study is to address this critical gap by undertaking a rigorous bibliometric investigation of the global research on service delivery innovations in lifestyle disease management. Using a systematic bibliometric analysis methodology, this study examines the research landscape of lifestyle interventions applied to prevent/manage non-communicable diseases (NCDs) through various service delivery frameworks in health care. By utilizing data from the Scopus database and visualization tools (VOSviewer), this paper provides a structured, data-driven representation of the developments in the field over the course of the last decade (2015 – 2024). In addition to demonstrating where the field currently resides intellectually, this study highlights areas of the field that represent critical research gaps and opportunities for future research inquiry and thus serves as a useful resource for all stakeholders seeking to advance the prevention and management of NCDs worldwide.

### 1.3. Significance of the Study

This study has three facets, which are to provide contributions to both academic knowledge and to policy/practice and to identify future research directions. This study provides a first comprehensive and quantitative overview of the

world-wide research landscape on service delivery innovations for Non-Communicable Diseases (NCD) and contributes significantly to academic knowledge. The study moves beyond typical literature reviews by defining the intellectual structure of the field, by identifying the principal authors, journals, institutions, and countries that have shaped the discourse about service delivery innovations for NCDs during the past ten years. Through the visualization of thematic clusters and collaborative networks, the study provides new insights into how knowledge is developed, distributed, and connected among the diverse disciplines of the interdisciplinary field of service delivery innovations for NCDs. The study provides a base reference point for researchers interested in understanding the development and current status of research in this area. The bibliometric analysis also clearly defines the direction of future research. Identifying research gaps (both thematic, methodological and geographic) identifies an agenda for future research. For instance, the identified Western-centrism of publications indicates the urgency of conducting research from and focused on Low- and Middle-Income Countries (LMIC). Likewise, the emergence of new keyword clusters could indicate new research frontiers warranting further exploration. The synthesis of what is currently known and, more importantly, what is not known about service delivery innovations for NCDs provides a stimulus for future research and encourages researchers to explore new questions and expand our knowledge base to continue to address lifestyle-related diseases.

#### 1.4. Research Objectives

1. To assess the publication trends and temporal growth patterns in the field of service delivery innovations related to lifestyle disease management and interventions.
2. To identify the major collaboration networks, influential journals, highly cited articles, leading institutions, and contributing countries within the domain of lifestyle-related non-communicable disease research.
3. To examine the intellectual structure, thematic evolution, and influential scholarly contributions shaping the discourse on service delivery strategies in lifestyle disease prevention and management.

## 2. MATERIALS AND METHODS

To explore the research environment regarding lifestyle interventions aimed at reducing non-communicable disease (NCD), this research used a methodical bibliometric assessment of how lifestyle interventions are being researched as part of the overall structure of healthcare service delivery models. The study used an organized literature search strategy that used the Scopus database. Scopus has broad subject matter coverage of peer reviewed publications in the biomedical and health science and public health fields, and is well suited for this type of research due to its ability to index over 25,000 journals from more than 5,000 publishers, including Medline and public health related content, along with the availability of integrated bibliometric tools that enable researchers to analyze trends, map author networks and assess the frequency of publications in their research area of interest.

### 2.1. Literature Search and Analysis

The literature search was guided by a Boolean-based strategy developed across three key conceptual clusters:

- Intervention types chosen: "lifestyle intervention", "behavioral intervention", "health promotion", "healthy lifestyle"
- Disease focus given to: "non-communicable disease", "NCDs", "chronic disease", "diabetes", "hypertension", "cardiovascular disease", "obesity"
- Service Delivery Contexts chosen: "service delivery", "healthcare innovation", "delivery of healthcare", "care model", "health system innovation"

Alongside the above keywords three levels of filters were applied to collect the Scopus data. These filters were- a. Search string made limited to title abstract and keywords b. Publication year was taken for a period of 10 years, from 2015 to 2024 c. only English language documents were taken into consideration for conduction the systematic search of the literature. The search was conducted on 22<sup>nd</sup> June, 2025, retrieving a total of 255 publications published between 2015 and 2024. The search was restricted to English-language articles and applied to titles, abstracts, and keywords (TITLE-ABS-KEY) to ensure comprehensive retrieval.

The final search string used in Scopus was as follows:

TITLE-ABS-KEY (("lifestyle intervention\*" OR "behavioral intervention\*" OR "health promotion" OR "healthy lifestyle") AND ("non-communicable disease\*" OR "NCDs" OR "chronic disease\*" OR "diabetes" OR "hypertension" OR "cardiovascular disease\*" OR "obesity")) AND ("service delivery" OR "healthcare innovation\*" OR "delivery of healthcare" OR "care model\*" OR "health system innovation\*")) AND PUBYEAR > 2014 AND PUBYEAR < 2025 AND (LIMIT-TO (LANGUAGE, "English"))

Table 1: Search queries and filters

Concept Cluster	Keywords/Search Terms
<b>Intervention Types</b>	"lifestyle intervention*" OR "behavioral intervention*" OR "health promotion" OR "healthy lifestyle"
<b>Disease Focus</b>	"non-communicable disease*" OR "NCDs" OR "chronic disease*" OR "diabetes" OR "hypertension" OR "cardiovascular disease*" OR "obesity"
<b>Service Delivery Context</b>	"service delivery" OR "healthcare innovation*" OR "delivery of healthcare" OR "care model*" OR "health system innovation*"
<b>Filters Applied</b>	- Year: PUBYEAR > 2014 AND PUBYEAR < 2025- Language: English- Search fields: TITLE-ABS-KEY

Source: Compiled by authors

Bibliometric data were extracted directly from Scopus, including publication year, journal name, author affiliation, citation counts, subject areas, and geographic distribution. There were three main categories of keywords that were used as search string while extracting the data (see table 1). A temporal trend analysis was performed to assess annual growth in publication output. Descriptive statistics (mean publications per year, growth rates, and peak publishing years) were computed. Data quality was ensured through iterative testing of the search string, validation of key terms using benchmark studies, and cross-verification by the research team.

## 2.2. Inclusion-Exclusion Criteria and Selection of Final Articles

There are certain criterions considered while conducting Scopus database search and data extraction for this bibliometric study. Which are being depicted in the table 2.

Table 2: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Peer-reviewed journal articles published between 2015–2024	Articles published before 2015 or after 2024
Publications available in English language	Publications in languages other than English
Studies focusing on lifestyle or behavioral interventions	Studies not addressing both lifestyle interventions or

	healthcare delivery or service delivery innovation
Research addressing non-communicable diseases (NCDs) or chronic diseases	Editorials, letters, grey literature, non-peer-reviewed content, or conference abstracts
Articles exploring healthcare service delivery, care models, or system innovations	Studies that do not explore healthcare service delivery frameworks
Indexed and retrievable through the Scopus database	Not indexed in Scopus or unavailable through TITLE-ABS-KEY search

Source: Compiled by authors (based on Scopus data search conducted on June 22, 2025)

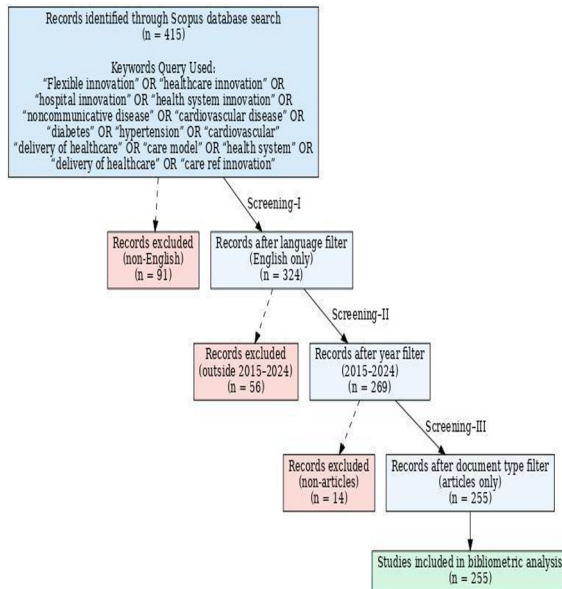


Fig 1: Flowchart of data extraction process

Fig. 1 shows the data selection process for the bibliometric analysis began with 415 records identified through a Scopus database search using specific keywords. Initially, the dataset was filtered to include only English-language records, reducing the count to 324 and excluding 91 non-English entries. Subsequently, a year filter from 2015 to 2024 was applied, narrowing the selection to 269 records by excluding 55 out-of-range records. Finally, the process concluded with a document type filter that retained only articles, resulting in 255 studies for the bibliometric analysis after excluding 14 non-article records.

### 3. DATA ANALYSIS & INTERPRETATION

This bibliometric study examines 255 documents from 2015-2024 contributed by 1,551 authors from 1,154 affiliations, generating 2,437 keywords across 7 document types with a total of 18 subject areas published in 185 journals among 74 countries. The dataset demonstrates significant scholarly diversity and international collaboration, with approximately 6 authors per document on an average, indicating a globally relevant and collaborative research field with robust statistical power for meaningful trend analysis. The important information related to the bibliometric data extracted from Scopus are as follows in the Table 1.

Table 3: Information about the bibliometric data

Sl. No.	Sample Details	Specifics
1	Total Documents	255
2	Time Period	10 Years
3	Total Keywords	2,437
4	Authors	1551
5	Affiliations	1154
6	Types of Documents	7
7	Subject Area	18
8	Journals	185
9	Country	74

Source: Compiled by authors from extracted Scopus data

### 3.1. Distribution of Publications by Document type

The document type analysis (see table 4) of 255 publications reveals a research corpus dominated by primary research outputs. Articles constitute the majority indicating a robust evidence base and synthesis effort. The table is as follows:

Table 4: Publications based on document types

Sl. No	Type	No. of Items	Percentage (%)
1	Article	190	74.50
2	Review	45	17.64
3	Book Chapter	10	3.9
4	Note	3	1.17
5	Conference Paper	3	1.17
6	Letter	2	0.7
7	Editorial	2	0.7

Source: Compiled by authors from extracted Scopus data

The results from this analysis of the document type of 255 documents demonstrate that there is an overall research corpus composed largely of primary research; articles compose 74.50% (190 documents) of the total data set as it

represents the majority of empirical research in this body of literature, and the 45 reviews comprise approximately 17.64% of the total, which indicates considerable effort toward synthesizing prior knowledge. The 10 book chapters represent 3.9% of the data set, and the two categories of "notes" and "conference paper", both of which are considered preliminary/ opinion based communication, are represented respectively at 1.17%. Letters and Editorials are each represented at .7% of the total data set. Overall, the pattern demonstrated in the above table illustrates a mature research area that includes a large proportion of empirical research supported by peer reviewed publications, and systematic reviews that indicate a level of established methodology, as well as a sufficient accumulation of data that would support a large-scale knowledge synthesis study.

**3.2. Subject area of the publications**

The subject area distribution (see table 5) highlights a multidisciplinary foundation, with Medicine leading the chart, reflecting the core focus on NCDs and healthcare delivery. Nursing follows at second place, underscoring the role of frontline care in lifestyle interventions.

Table 5: Top 10 subject areas of the documents

Sl. No	Subject Area	Records	Percentage (%)
1	Medicine	156	61.2%
2	Nursing	31	12.2%
3	Biochemistry, Genetics	11	4.3%
4	Social Sciences	10	3.9%
5	Health Professions	10	3.9%
6	Environmental Science	7	2.7%
7	Psychology	6	2.4%
8	Multidisciplinary	5	2.0%
9	Neuroscience	5	1.8%
10	Pharmacology, Toxicology	3	1.2%

Source: Compiled by authors from extracted Scopus data

The analysis of the subjects included in this study shows that service delivery innovation in lifestyle disease management are based on a multi-disciplinary body of literature. The majority of all literature surveyed in this review —61.2% (156 papers) — was derived from the field of Medicine; it would be difficult to dispute this finding since the vast majority of lifestyle disease research focuses primarily on NCDs and healthcare delivery systems. The second largest category was Nursing with 12.2% (31 papers); this represents the critical role that frontline care workers play in implementing lifestyle interventions at both the community and clinical level. Other major categories included Biochemistry and Genetics (4.3%), Social Sciences (3.9%), Health Professions (3.9%), and Environmental Science (2.7%). These categories indicate that lifestyle disease researchers are considering biomedical as well as contextual influences in the formation of their research discourse. Research contributions from Psychology (2.4%) further illustrate the behavioral aspects of health practices related to lifestyle issues, while categories such as Neuroscience, Pharmacology, and Multidisciplinary represent attempts to merge neurobiological understanding, pharmacologic management and cross-disciplinary perspectives in designing and evaluating interventions. Therefore, the categorization of subjects in this study clearly illustrates the interdisciplinary nature of lifestyle disease research where clinical science, behavioral research, policy and environmental determinants converge. Also, the categorization of subjects suggests that there is an opportunity for a more integrated approach to delivering services in health systems that can take into account both medical efficacy and social/behavioral sustainability.

### 3.3. Year wise publication trends

In publication trend analysis (see table 6), we can understand the number of yearly global research output and also, we can trace if there is any exponential growth trend or not.

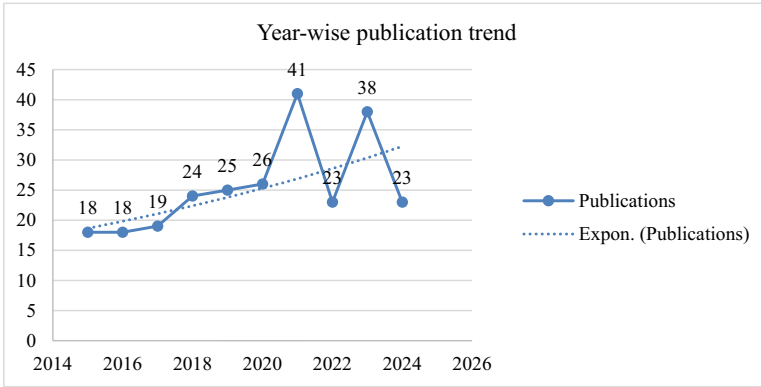
**Table 6:** Year wise distribution of documents

Sl. No	Year	Publications	Cumulative Total	Percentage of Total
1	2015	18	18	7.1%
2	2016	18	36	7.1%
3	2017	19	55	7.5%
4	2018	24	79	9.4%
5	2019	25	104	9.8%
6	2020	26	130	10.2%
7	2021	41	171	16.1%
8	2022	23	194	9.0%
9	2023	38	232	14.9%
10	2024	23	255	9.0%

Source: Compiled by authors from extracted Scopus data

The trends identified through this analysis of research output show that research output has been increasing in terms of fluctuation as well as in a major increase in publications per year for the pandemic years. The number of publications were relatively consistent between 2015-2017 (average 18-19 publications per year; average percent = 7.1-7.5%) and then slightly grew from 2018-2020 (average 24-26 publications per year; average percent = 9.4-10.2%) showing moderate increases in interest in the area. In addition, there was a very large spike in the number of publications in 2021 with 41 publications (16.1%); the largest number of publications per year ever recorded, which could be a result of an increased amount of research being done around the time of the COVID-19 pandemic on health system responses to the pandemic and chronic disease management and health promotion topics that have become increasingly important as a result of the pandemic. Following the large spike in 2021 (as shown in figure 2), the number of publications dropped to 23 in 2022 (9.0%), potentially due to delayed submissions, research interruptions and/or changes in research priority after the pandemic. The number of publications rose again in 2023 to 38 (14.9%), second-most number of publications per year, indicating continued research momentum; 2024 had a moderate number of publications at 23 (9.0%).

Fig 2: Exponential trend of publications in the field (2015-2024)



The overall trend demonstrates that this research field experienced significant growth during the pandemic period (2021-2023), with cumulative output increasing substantially from 130 publications by 2020 to 232 by 2023, indicating heightened scholarly interest in health promotion and related topics during global health challenges.

**3.4. Leading Publication Sources**

In conducting a bibliometric coupling analysis to identify the most influential sources (see table 7) in the research domain, a threshold of a minimum of 2 documents per source was applied. From a total of 185 sources, 31 met this criterion, indicating their significant contribution to the field. The results are categorized into two key metrics and from it top 10 sources were taken for tabulation in both cases of most publications and most citations.

To trace the collaboration of journals, bibliometric coupling of sources (see fig. 3) based on documents was conducted. The first cluster (Cluster-I, Blue), dominated by the International Journal of Environmental Research and Public Health (10 documents), BMC Health Services Research (9), and BMJ Open (9), represents journals with the highest publication volumes, primarily focusing on public health, healthcare systems, and clinical research. The second cluster (Cluster-II, Red), led by Journal of the American College of Cardiology (659 citations), Health Policy (226), and Journal of the Academy of Nutrition and Dietetics (214), comprises the most influential journals based on citation impact, particularly in cardiovascular research, health policy, and nutritional science. While the purple cluster (Cluster-III) focuses on methodological rigor through trial protocols and experimental designs, the green cluster (Cluster-IV) reflects grassroots and community-based health systems, and the yellow cluster (Cluster-V) bridges public health with chronic disease management, especially diabetes. Collectively, the five clusters represent the health research disciplines that are represented in the journals analyzed. Cluster-VI represents Lifestyle and Behavioral Health Interventions and together, these clusters illustrate how journals relate to one another through the commonalities of specific health domains and demonstrate the interconnectedness of health research today. At the same time, they show significant gaps in the representation of Digital Health and a clear Western-centric bias in the journals that are highly cited, indicating the opportunity for additional technological and regionally focused research. This finding is consistent with typical bibliometrics that show output volume and citation count, are used as two complementary measures of a journal's impact on its respective field's research trends, with high-volume publications serving to disseminate information and high-citation publications serving as the authoritative reference source for their respective fields. This study provides an initial understanding of the state of health research today and identifies potential avenues for future studies to explore broader disciplinary and geographic perspectives.

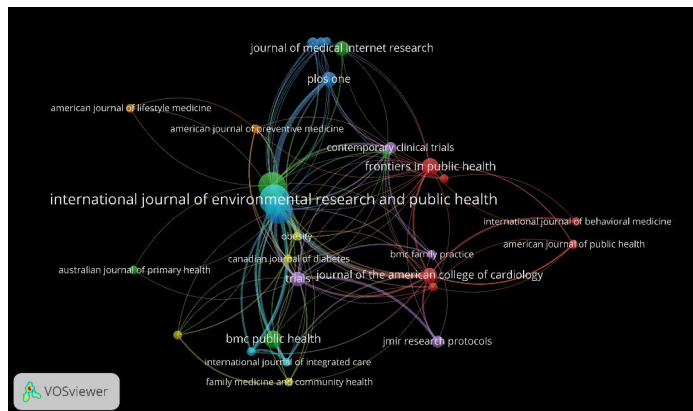
Table 7: Top 10 sources based on number of publications and citations

Sl. No.	Top sources based on number of publications		Top sources based on number of citations	
	Source	Documents	Source	Citations

1	International Journal of Environmental Research and Public Health	10	Journal of the American College of Cardiology	659
2	BMC Health Services Research	9	Health Policy	226
3	BMJ Open	9	Journal of the Academy of Nutrition and Dietetics	214
4	BMC Public Health	5	Obesity	169
5	Frontiers in Public Health	5	BMC Health Services Research	161
6	Journal of the American College of Cardiology	4	BMJ Open	105
7	Trials	4	Diabetes Care	101
8	Journal of Medical Internet Research	4	Frontiers in Public Health	73
9	PLOS One	4	BMC Public Health	73
10	Contemporary Clinical Trials	3	American Journal of Preventive Medicine	46

Source: Compiled by authors from extracted Scopus data

Fig 3: Journal Collaboration Network



Source: Prepared using VOSviewer with extracted Scopus Data

### 3.5. Leading Authors

Citation analysis of authorship for the top authors based upon number of documents and citations was undertaken. The 255 documents include a total of 1551 authors. Data compiled by the top authors is presented in table 8. A balanced configuration of prolific authors and influential authors can be seen within the bibliometric framework of research regarding service delivery innovation in lifestyle intervention and NCD management. A clear leader of scholarly productivity exists as Tandon, Nikhil has five articles; thus, he is considered a consistent and highly visible contributor to the emerging body of literature. A second tier of authors consists of Mechanick, JI, Prabhakaran, D., and Wiggers, J, all three of whom have authored four articles. These authors provide evidence of the emergence of a

core group of researchers who are contributing to the development of health promotion and chronic disease care model and prevention methodologies across a variety of healthcare settings.

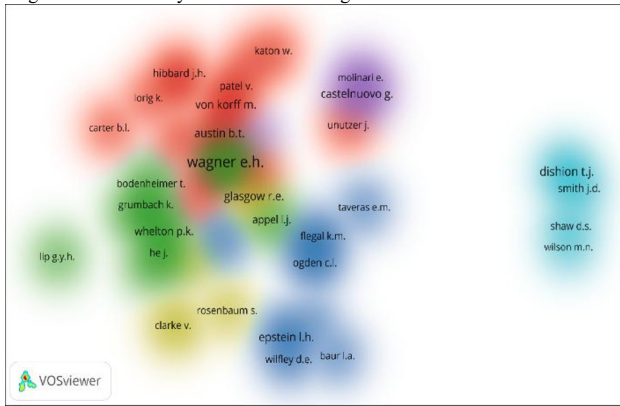


Fig 4: Density visualization of co-citation of authors

Source: Prepared using VOSviewer with extracted Scopus Data

scholarly influence, as measured by citation count, tells a different story. Here, Wagner, E.H. emerges as the most cited author with 79 citations, underscoring the lasting impact of his contributions despite not being the most prolific. Other highly cited authors include Dishion, T.J. (37 citations), Epstein, I.H. (35), and Von Korff, M. (35), whose seminal works appear to serve as intellectual cornerstones for newer studies in this domain. The citation pattern reflects a classic scholarly phenomenon: influence does not always stem from quantity but from the depth and resonance of individual works. These networks also

indicate the presence of epistemic communities—interconnected groups of scholars united by common research interests, often crossing disciplinary boundaries such as epidemiology, public health policy, behavioral science, and healthcare innovation. Such networks are essential for the cumulative advancement of knowledge, as they foster shared methodologies, consistent terminologies, and coordinated research agendas.

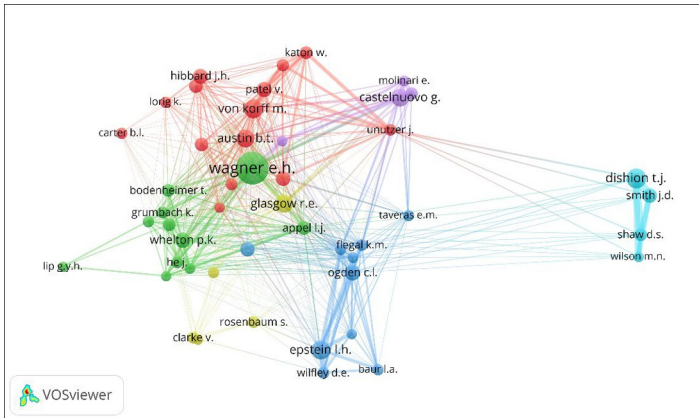
Table 8: Top 10 Authors according to number of documents and citations

Sl. No.	Top Authors based on number of documents		Top Authors based on number of citations	
	Author	Documents	Author	Citations
1	Tandon, Nikhil	5	Wagner, E.H.	79
2	Mechanick, Jeffrey I.	4	Dishion, T.J.	37
3	Prabhakaran, Dorairaj	4	Epstein, I.H.	35
4	Wiggers, John	4	Von Korff, M.	35
5	Peiris, David	3	Glasgow, R.E.	34
6	Rissel, Chris	3	Austin, B.T.	32
7	Tian, Maoyi	3	Castelnuovo, G.	32
8	Wilfley, Denise E.	3	Whelton, P.K.	27
9	Abimbola, Seye	2	Ogden, C.I.	26

10	Aggarwal, Preeti	2	Hibbard, J.H.	25
----	------------------	---	---------------	----

Source: Compiled by authors from extracted Scopus data

Fig 5: Collaboration network of authors



Source: Prepared using VOSviewer with extracted Scopus Data

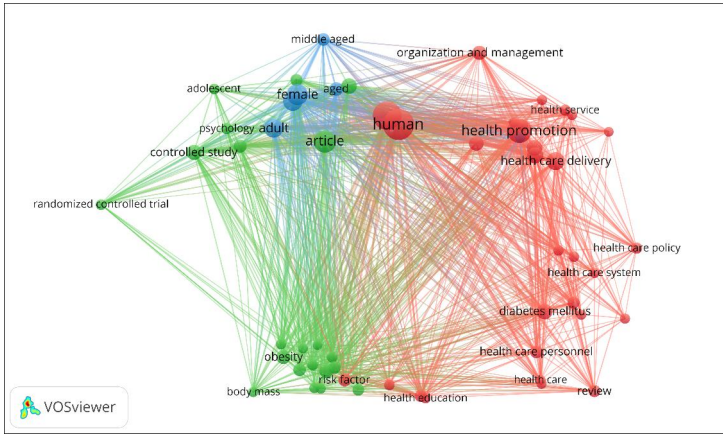
### 3.6. Keyword Mapping

Table 9: Top 20 keywords according to number of occurrences

SI No.	Keyword	Occurrences	SI No.	Keyword	Occurrences
1	Human	206	11	Diabetes mellitus	50
2	Humans	178	12	Procedures	49
3	Health promotion	128	13	Controlled study	47
4	Article	107	14	Hypertension	43
5	Female	93	15	Organization and management	41
6	Male	81	16	Obesity	41
7	Adult	76	17	Physical activity	39
8	Health care delivery	66	18	Aged	37
9	Chronic disease	54	19	Major clinical study	35
10	Primary health care	51	20	Risk factor	34

Source: Compiled by authors from extracted Scopus data

Fig 6: Keyword mapping visualization



Source: Prepared using VOSviewer with extracted Scopus Data

The top 20 Keywords from the Keyword Mapping Analysis (see Table 9), conducted by analyzing the Scopus data in VOSviewer for Service Delivery Innovation, Non-Communicable Disease Management, and Lifestyle Intervention, resulted in 2,437 keywords in the overall research area. Of those 2,437 keywords, 57 keywords occurred enough to meet the threshold of a minimum of 20 occurrences.

Table- lists the Top 20 Keywords appearing most often across all the research articles relating to this field of research. These results from the keyword analysis show a very clear research body based on evidence-based human health studies as indicated by the enormous occurrence of "human/humans" (384 combined occurrences) and "article" (107), clearly demonstrating a very comprehensive literature review of clinical and public health research. This extremely high occurrence of "health promotion" (128) clearly demonstrates a strong preventive healthcare approach. The significant number of demographics ("female" = 93, "male" = 81, "adult" = 76) also demonstrate a balanced gender research population targeted towards adults. The health-care systems focus is apparent by the occurrence of "health care delivery" (66) and "organization and management" (41). The disease specific research focus is concentrated on some of the major non-communicable diseases such as "chronic disease" (54), "diabetes mellitus" (50), "hypertension" (43), and "obesity" (41), and "risk factor" (34), which reflects the current global health priorities. The rigorous methodology of the research is demonstrated by the occurrence of "procedures" (49), "controlled study" (47), and "major clinical study" (35). Lastly, the emphasis on "primary health care" (51) and "physical activity" (39) demonstrates a preventative care strategy with an emphasis on lifestyle interventions versus strictly treatment oriented strategies; collectively demonstrating a broad research base that places an emphasis on promoting evidence-based human health with a special emphasis on preventing chronic disease and optimizing health care systems.

The green cluster (Cluster II, Research Methods & Specific Health Conditions) appears to emphasize the use of specific research methods (e.g., controlled studies; randomized controlled trials) as well as the study of particular health conditions (e.g., obesity; body mass; risk factors). The blue Cluster (III – Demographics & Study Design) appears to be focused on the demographics of the population being researched and the study design(s) used by the researcher(s) with terms such as "human," "female," "male," "adult," "aged," "middle-aged" and "article." The Network Map contains a prominent red Node "human", indicating that the primary subject matter of the studies is the Health of Humans. In addition, there are several Nodes related to study design (i.e., "controlled study," "randomized controlled trial," "article") which indicate that the researcher(s) placed a high value on the quality of the study methodology used. The density of the red Nodes surrounding the terms "healthcare delivery," "policy," and "management" indicate that the researcher(s) have a significant amount of knowledge development efforts directed toward improving Healthcare Systems. The number of various age-related terms (i.e., adolescent, adult, aged, middle-aged) and gender terms (i.e., male/female) provide evidence that the researcher(s) have made every effort to investigate all aspects of the populations being studied. In total, the visualization of the Network Map provides a comprehensive

view of the researcher's portfolio, demonstrating the wide-ranging nature of the researcher's activities (i.e., clinical studies, studies of health policy, studies of population health) using a high-quality research methodology.

### 3.6.1. Identifying Thematic Development Through Keywords Co-Ocurring

The top 20 Keywords found in the Bibliometric Analysis (see Table 9) and the frequency of each Keyword to demonstrate the development and focus of the research themes of service delivery innovations for lifestyle disease management and intervention from 2015 through 2024. The results show that the most common theme across the entire timeframe was centered around “human/humans” (384 times), showing that the studies had a consistent focus on Human Health Studies across the ten-year span. A close second in terms of frequency was “article” (107 times) which indicated that the research has a robust empirical basis. The third most frequent theme was “health promotion” (128 times) which emerged as a dominant Preventive Healthcare theme, showing a consistent emphasis on Lifestyle Interventions throughout the ten-year time frame.

The development of the themes over time demonstrates an initial focus on demographic characteristics such as “female” (93), “male” (81), and “adult” (76), which demonstrated that the studies were conducted on a diverse population that was likely maintained across the ten-year period. In contrast, the disease-specific themes (i.e., “chronic disease,” “diabetes mellitus,” “hypertension,” and “obesity”) demonstrated a trend of the research shifting from General Non-Communicable Diseases (NCDs) Research to Specific Conditions with an increased focus on “risk factor” (34) as a connecting theme. In addition, the Theme of the Healthcare System (represented by “health care delivery” (66) and “organization and management” (41)) showed an increased interest in systemic approaches to healthcare and peaked during the pandemic years (2021-2023) when the research output surged.

In addition to the Themes of Healthcare Delivery and Organization/Management, the Themes of Methodology Rigor (i.e., “procedures” (49), “controlled study” (47), and “major clinical study” (35)) demonstrated a continued growth in the quality of the studies being conducted, which suggests that the research field was maturing and trending toward evidence-based practices. The prominence of the Themes of “Primary Health Care” (51) and “Physical Activity” (39) suggest a continued evolution of the research toward preventative care strategies, particularly after 2020 and in alignment with Global Health Challenges. Overall, the evolution of the themes demonstrate a research field that began with broad demographic and disease specific studies, developed into systemic and prevention-oriented frameworks and reached an apex in intensity during the pandemic, with a strong interdisciplinary and evidence-based approach.

### 3.7. Eminent Organizations

While analyzing the records about organizations related to these 255 documents, it was found that a total of 1154 institutions are related to all these research articles. That means the authors who conducted the research are from at least 1154 institutes. The data related to institutes are as follows in table 10.

Co-authorship among organizations (see fig. 7) shows in terms of publication output, the Public Health Foundation of India (New Delhi) and the NSW Office of Preventive Health (Liverpool Hospital, Australia) top the list, each with three documents. Their prominence signals the growing global commitment to service delivery reforms, particularly from countries that are facing the dual burden of communicable and non-communicable diseases. These institutions have likely played a catalytic role in piloting health promotion models, implementing scalable intervention strategies, and contributing empirical data from underrepresented contexts.

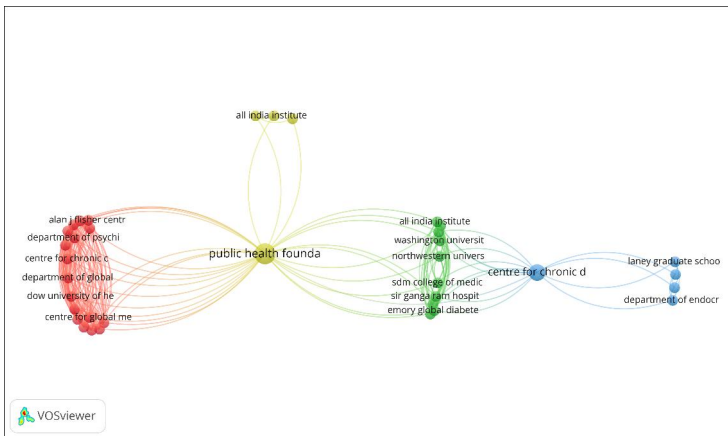
Table 10: Top 10 Organizations according to number of documents and citations

SL No.	Top organizations based on number of documents		Top organizations based on number of citations	
	Organization	Documents	Organization	Citations
1	Public Health Foundation of India, New Delhi	3	Department of Epidemiology, Tulane University	358
2	NSW Office of Preventive Health, Liverpool Hospital	3	Department of Epidemiology, University of California	358
3	Pennington Biomedical Research Center, Louisiana	2	Department of Medicine, University of Mississippi Medical Center	358

5	Centre for Global Public Health, University of Manitoba	2	Departments of Population Health Sciences, University of Wisconsin–Madison	358
6	Menzies Centre for Health Policy, University of Sydney	2	Aragon Health Sciences Institute, Spain	204
7	Faculty of Nursing, University of Alberta	2	Department of Clinical and Experimental Medicine	204
8	Hunter New England Population Health, Australia	2	Department of Geriatrics, Centre on Aging	204
9	School of Medicine and Public Health, University of Newcastle	2	European Patients’ Forum (EPF), Belgium	204
10	Department of Primary and Interdisciplinary Care, Ghent University	2	Health Services & Policy Research, University of London	204

Source: Compiled by authors from extracted Scopus data

Fig 7: Institutional collaboration network



Source: Prepared using VOSviewer with extracted Scopus Data

In addition to those mentioned earlier, many other organizations – including the Pennington Biomedical Research Center (USA), the Centre for Global Public Health at the University of Manitoba (Canada) and the Menzies Centre for Health Policy (University of Sydney), for example – have provided two documents each; this distribution of contributions is consistent with an interdisciplinary and collaborative research environment, in which institutions from all parts of the world provide incremental yet meaningful inputs into larger knowledge pools. Many of these organizations conduct implementation research, community-based trials, or assessments of health systems. However, citation data reveal a somewhat different profile of scholarly impact. The Department of Epidemiology at Tulane University and the University of California, the Department of Medicine at the University of Mississippi, and the Department of Population Health Sciences at the University of Wisconsin–Madison each received 358 citations, indicating a co-authored paper that has become a reference point or foundational work in the literature. Other European organizations, including the Aragon Health Sciences Institute (Spain), the European Patients’ Forum (Belgium) and the Health Services & Policy Research Unit at the University of London, received 204 citations each, suggesting a level of international recognition and relevance. The institutional collaboration networks displayed in the visualizations likely show numerous tight clusters of partnerships between institutions in North America, Europe, and Oceania, and growing connections with the Global South.

**3.8. Prominent Countries**

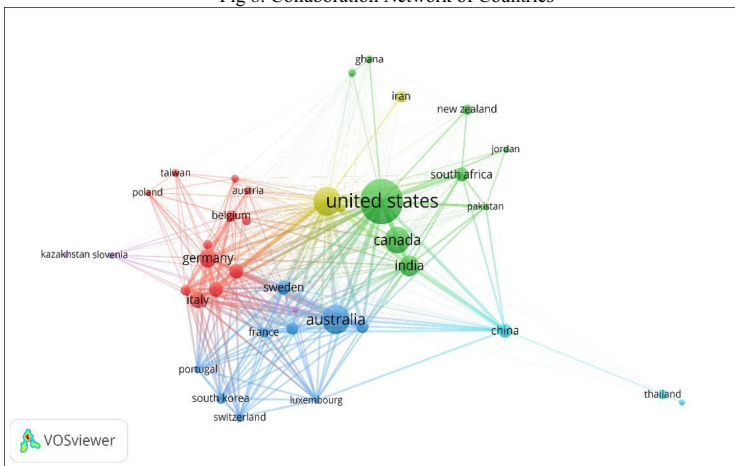
While assessing Scopus data, it was found that an astounding amount of 74 countries were related to 255 documents. This number portrays that the research related to lifestyle disease management and service delivery innovation is wide spread at global level and have been of great concern to the researchers. Table 11 shows that data related to countries of origin of the research.

Table 11: Top 10 Countries according to number of documents and citations

Sl. No.	Top countries based on number of documents		Top countries based on number of citations	
	Author	Documents	Author	Citations
1	United States	92	United States	2309
2	United Kingdom	38	United Kingdom	904
3	Australia	39	Canada	772
4	Canada	32	Australia	627
5	India	20	India	607
6	Germany	15	Netherlands	485
7	Spain	10	Germany	407
8	Netherlands	10	Finland	388
9	Belgium	6	China	379
10	Denmark	6	Spain	376

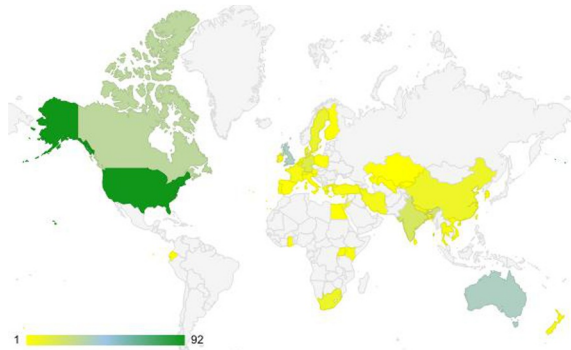
Source: Compiled by authors from extracted Scopus data

Fig 8: Collaboration Network of Countries



Source: Prepared using VOSviewer with extracted Scopus data

Fig. 9: Geographical visualization of the bibliometric data



Source: Prepared using Google geo charts with Scopus data

The country-level bibliometric coupling analysis of the Scopus data provides a comprehensive view of the geographical distribution (See fig. 8) of research productivity and scholarly impact in the field. A large number of studies in the field were conducted in the USA; it is the leading contributor, at 92 of 255 studies, or just over one-third of all study output. Moreover, the USA has the greatest number of citations, 2309, which demonstrates the key roles of researchers in the USA, as well as their institutions and funders, in defining the international conversation about lifestyle interventions and healthcare services delivery. The UK and Australia contribute second and third highest numbers of studies; 38 and 39 respectively. These countries are also among the most frequently cited, suggesting a high level of productivity, and significant academic influence due to their high-quality and well-funded public health research infrastructures. Canada's contribution of only 32 studies is notable because it has an extremely high level of citation efficiency, 772 citations—or nearly 24 per study. Therefore, the data suggest that Canadian research in this area, although modest in volume, is of exceptionally high quality, and often foundational. Similarly, India is rapidly becoming a major contributor to the body of literature in this field, and was ranked second after the USA in terms of the proportion of its documents that have been cited, with 20 studies and 607 citations. Given India's position as both a site of significant Non-Communicable Disease (NCD) burden, and a source of innovative, low-cost solutions in healthcare delivery, these findings are particularly impressive. In addition, the other European countries represented in the dataset; Germany, Spain and the Netherlands, demonstrated consistent levels of output and citation rates. Finland and China also had higher than expected levels of citation activity based on their lower volumes of production.

These results reveal a small group of highly productive countries with a high degree of scholarly exchange between them, and a larger but still somewhat fragmented and less productive set of countries around the periphery (Fig. 9). The country collaboration network will likely illustrate the relationships of high-productivity countries, specifically the USA, UK, Canada and Australia as a central node of scholarly exchange. On the periphery there appears to be growth in countries like India, South Africa and China, which could indicate a trend toward a more multipolar architecture of research. However, some countries in Latin America, the Middle East and Sub-Saharan Africa, are still underrepresented or absent from the top tier of productivity and impact, and therefore represent areas where significant inequalities exist in terms of access to research funding, infrastructure and high-impact publication opportunities.

#### 4. Findings And Discussion

This bibliometric analysis of 255 documents (2015–2024) maps the evolving research landscape on service delivery innovations for lifestyle disease management. The findings highlight steady growth, thematic diversification, geographic concentration, and the pandemic's catalytic role.

##### 4.1. Key Insights

- **Temporal Growth & COVID-19 Impact:** Research output grew gradually until 2020, then spiked in 2021 (16.1% of total), reflecting the pandemic's push towards telehealth, mHealth, and remote monitoring. Momentum continued through 2023, signaling a lasting shift toward resilient, tech-enabled care systems.
- **Thematic Evolution:** Initially disease-specific (e.g., diabetes, hypertension, obesity), the field now emphasizes systemic issues—health promotion, primary care, and healthcare delivery. Research spans medicine (61.2%) and nursing (12.2%) but is increasingly interdisciplinary, incorporating social sciences, psychology, and environmental health. Three thematic clusters dominate: **Health Systems & Policy, Research Methodology & Conditions, and Demographics & Study Design.**
- **Geographical Distribution:** The U.S. leads with over a third of publications and most citations, followed by the U.K., Australia, and Canada. India emerges as a significant player, reflecting its NCD burden and frugal healthcare innovations. Collaboration networks are densest in North America and Europe, though Latin America, Africa, and the Middle East remain underrepresented.
- **Knowledge Dissemination:** Research is published across broad-scope public health journals (e.g., *IJERPH*) and high-impact clinical journals (e.g., *JACC*). This dual track balances rapid dissemination and high citation impact.
- **Research Gaps:** Limited representation of digital health in top journals, insufficient implementation science studies, and persistent global inequities in research participation. Future work should strengthen evidence for technology-enabled models and expand collaboration with underrepresented regions.

## 5. Limitation of the Study

This research is limited to only Scopus which can result in missing out on important articles or papers within PubMed or Web of Science. In spite of the fact that this research has a very comprehensive approach to the search query, there is still a potential for this search to miss studies (that implement a variety of different terminologies) for lifestyle intervention or service delivery innovation. The peer-review nature of the research will also limit the amount of useful gray literature, including government reports, policy documents etc. The researchers recognize many possible limitations that could affect the breadth of the study: depending solely upon the results from the Scopus search may have omitted relevant materials from other resources; the restriction of the search to only English language publications may introduce a linguistic bias; the scope of the search terms is extensive however they may be too restrictive in order to include all possible ways of wording the search terms; and finally the limitation to only published literature, and excluding gray literature and conference proceedings, will likely narrow the scope of the study. Further research could improve upon some of these limitations through using a combination of multiple databases, and expanding the search strategy by incorporating additional key words, and document types.

## 6. Policy Recommendation, Practical and Theoretical Implications

Based upon the results from this research project, many strategies for implementing policy development may be proposed. Firstly, funding agencies should give precedence to funding projects that address identified geographic gaps, specifically through developing research capacities in Low-Middle Income Countries (LMIC). Secondly, health organizations must establish policies which allow for the integration of digital health tools into regular non-communicable disease (NCD) care, and build upon the successes realized through the COVID-19 pandemic. Thirdly, education/training programs for all health professions must be revised to include competences in health promotion, patient self-management support and interdisciplinary team collaboration.

In terms of theory, the implications of this study provide a detailed mapping of an entire scholarly field. In addition to providing a "cartography" of the entire domain, the study also maps the intellectual structure, key actors, and thematic currents in the field. This provides a "meta"-level perspective of how knowledge in this critical area was developed and disseminated over the last ten years. As such, the map is a valuable resource for researchers, who will find it useful as a means of locating their own research within the larger context of the field; finding other researchers to collaborate with; and/or finding new areas of research to pursue. The practical implications of the study for both policymakers and health practitioners are significant. The study's findings indicate there is now international momentum to redesign care for individuals living with chronic diseases, and have pointed to existing centers of excellence and prominent research studies that can guide evidence-based decision making. The clear trend toward integrated, primary-care led, technology-enabled service delivery models, represents a clear mandate for health organizations to invest in these types of models. Finally, this body of research will provide clinicians with the

necessary evidence to advocate for and implement new models of care that will lead to improved long-term outcomes for patients living with NCD.

## 7. Future Research Directions

Future areas for research include, however, some potential bibliometric expansion possibilities (i.e., analyzing grey literature, expanding databases) as well as the development of more "implementation science" to determine how to bring evidence-based interventions to practice at various levels of the world. Additional qualitative research will allow us to add depth to the quantitative data collected from this project by better understanding what it means to be an active participant in the healthcare system as either a patient or provider of new care models. The continued development of the body of knowledge that has been developed here will help the research community to provide the knowledge needed to equitably and effectively respond to the global problem of lifestyle-related diseases.

## 8. Conclusion

A systematic mapping of global research on service delivery innovations for the management of lifestyle diseases over the last decade (2015–24) was conducted via this bibliometric examination. A total of 255 documents were analyzed in order to identify the field of research as an interdisciplinary area that is developing at a rapid pace; a consistently growing body of literature with a large increase in the number of studies produced during the COVID-19 pandemic period; and evidence supporting the position that the pandemic served as a stimulus for the development of new methods for delivering healthcare. The thematic structure of this body of research has developed from its initial emphasis on rigorous clinical and methodological work into a more systemic and preventative focus toward the promotion of health and primary care. Research in this field is primarily being produced by institutions located in the United States and other high income Western nations. However, the emergence of countries such as India suggests that there may be a slowly increasing diversity in terms of the geographic representation of the global research base in this area. The overall trend within this body of research is moving away from single intervention approaches to a more comprehensive and integrated approach to health system innovation, supported by use of technology. Although there have been many advances in this field, it is also critical to address digital health evidence gaps and geographic inequities if we are to foster the creation of truly equitable global health innovations.

## References

- [1] Agarwal, S., Sripad, P., Johnson, C., Kirk, K., Bellows, B., Wenceslao, M., & Hod, M. (2019). A conceptual framework for measuring the effectiveness of mHealth in improving maternal, newborn, and child health. *Global Health: Science and Practice*, 7(Supplement 1), S15-S29.
- [2] Atun, R. (2012). Health systems, systems thinking and innovation. *Health Policy and Planning*, 27(suppl\_4), iv4-iv8.
- [3] Bashshur, R., Doam, C. R., Frenk, J. M., Kvedar, J. C., & Woolliscroft, J. O. (2020). Telemedicine and the COVID-19 pandemic, lessons for the future. *Telemedicine and e-Health*, 26(5), pp. 571-573.
- [4] Beaglehole, R., Bonita, R., Horton, R., Adams, C., Alleyne, G., Asaria, P., ... & Watt, J. (2011). Priority actions for the non-communicable disease crisis. *The Lancet*, 377(9775), pp. 1438-1447.
- [5] Bennett, J. E., Stevens, G. A., Mathers, C. D., Bonita, R., Rehm, J., Kruk, M. E., ... & Ezzati, M. (2018). NCD Countdown 2030: worldwide trends in non-communicable disease mortality and progress towards Sustainable Development Goal target 3.4. *The Lancet*, 392(10152), pp. 1072-1088.
- [6] Bhattacharyya, O., Khor, S., McGahan, A., Dunne, D., Daar, A. S., & Singer, P. A. (2017). Innovative health service delivery models in low and middle income countries: what can we learn from the private sector? *Health Research Policy and Systems*, 15(1), pp. 1-10.
- [7] Bloom, D. E., Cafiero, E. T., Jané-Llópis, E., Abrahams-Gessel, S., Bloom, L. R., Fathima, S., ... & Weinstein, C. (2011). *The global economic burden of non-communicable diseases*. World Economic Forum.
- [8] Damschroder, L. J., Aron, D. C., Keith, R. E., Kirsh, S. R., Alexander, J. A., & Lowery, J. C. (2009). Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. *Implementation Science*, 4(1), pp. 1-15.
- [9] Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133, pp. 285-296.

- [10] Ezeh, A. C., Oyeboode, O., Satterthwaite, D., Chen, Y. F., Nduigwa, R., Sartori, J., ... & Lilford, R. J. (2020). The history, geography, and sociology of slums and the health problems of people who live in slums. *The Lancet*, 395(10223), pp. 547-558.
- [11] GBD 2019 Risk Factors Collaborators. (2020). Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*, 396(10258), pp. 1223-1249.
- [12] Gomez-Olive, F. X., Ali, S. A., Made, F., Collinson, M. A., Kahn, K., Tollman, S., & Garenne, M. (2017). Regional and sex differences in the prevalence and awareness of hypertension: an H3Africa AWI-Gen study in 6 sites in sub-Saharan Africa. *Global Heart*, 12(2), pp. 81-90.
- [13] Greenhalgh, T., Wherton, J., Papoutsis, C., Lynch, J., Hughes, G., A'Court, C., ... & Shaw, S. (2017). Beyond adoption: a new framework for theorizing and evaluating nonadoption, abandonment, and challenges to the scale-up, spread, and sustainability of health and care technologies. *Journal of Medical Internet Research*, 19(11), e367.
- [14] Hartmann-Boyce, J., Morris, E., Goyder, C., Keston, J., Gbinigie, O., Locock, L., & Pope, C. (2020). Diabetes and COVID-19: risks, management, and learnings from other national health crises. *The Lancet Diabetes & Endocrinology*, 8(9), pp. 733-734.
- [15] Hibbard, J. H., & Greene, J. (2013). What the evidence shows about patient activation: better health outcomes and care experiences; fewer data on costs. *Health Affairs*, 32(2), pp. 207-214.
- [16] Keating, P., & Cambrosio, A. (2011). *Cancer on trial: Oncology as a new style of practice*. University of Chicago Press.
- [17] Khatri, R. B., & Jusot, F. (2022). Role of community health workers in non-communicable disease prevention and control in the WHO South-East Asia Region: a scoping review. *Journal of Epidemiology and Global Health*, 12(2), 164.
- [18] Kruk, M. E., Gage, A. D., Arsenault, C., Jordan, K., Leslie, H. H., Roder-DeWan, S., ... & Pate, M. (2018). High-quality health systems in the Sustainable Development Goals era: time for a revolution. *The Lancet Global Health*, 6(11), e1196-e1252.
- [19] Monaghesh, E., & Hajizadeh, A. (2020). The role of telehealth during COVID-19 outbreak: a systematic review based on current evidence. *BMC Public Health*, 20(1), pp. 1-9.
- [20] Nugent, R. (2016). The development community's critical role in curbing non-communicable diseases. *Global Heart*, 11(4), pp. 387-392.
- [21] Popkin, B. M., Corvalan, C., & Grummer-Strawn, L. M. (2020). Dynamics of the double burden of malnutrition and the changing nutrition reality. *The Lancet*, 395(10217), pp. 65-74.
- [22] Purohit, B., & Patel, V. (2017). Innovations in the delivery of mental healthcare in low-and middle-income countries. *Current Opinion in Psychiatry*, 30(2), pp. 146-152.
- [23] Rawaf, S., Allen, L. N., Stigler, F., Kringos, D., & Kluge, H. (2020). Lessons on the COVID-19 pandemic, for and by primary care. *European Journal of Public Health*, 30(4), pp. 633-634.
- [24] Swinburn, B. A., Kraak, V. I., Allender, S., Atkins, V. J., Baker, P. I., Bogard, J. R., ... & Dietz, W. H. (2019). The global syndemic of obesity, undernutrition, and climate change: the Lancet Commission report. *The Lancet*, 393(10173), pp. 791-846.
- [25] Wagner, E. H., Austin, B. T., Davis, C., Hindmarsh, M., Schaefer, J., & Bonomi, A. (2001). Improving chronic illness care: translating evidence into action. *Health Affairs*, 20(6), pp. 64-78.
- [26] Webster, P. (2020). Virtual health care in the era of COVID-19. *The Lancet*, 395(10231), pp. 1180-1181.
- [27] World Health Organization. (2022a). *Noncommunicable diseases*. WHO. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
- [28] World Health Organization. (2022b). *Invisible numbers: The true extent of noncommunicable diseases and what to do about them*. WHO.
- [29] Zupic, I., & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, 18(3), pp. 429-472.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

