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Unveiling The Scholarly Landscape: A Bibliometric Analysis Of Online Doctor And Health Consultation

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ABSTRACT

This bibliometric analysis investigates the trends and patterns in research related to online doctor and health consultations. Utilizing a systematic approach, relevant literature was identified from Scopus database, covering the period from 1997 to 2024. The analysis examined publication trends, authorship patterns, citation networks, geographical distribution of research, and thematic content. Results indicate a notable increase in research activity in recent years, reflecting the growing interest and adoption of online consultations in healthcare delivery. Moreover, the analysis reveals diverse research themes, including efficacy, patient satisfaction, and technological advancements, Overall, this bibliometric analysis provides valuable insights into the evolution and current landscape of research on online doctor and health consultations, highlighting areas for future investigation and policy development.

Keywords: virtual consultations, online doctor visits, bibliometric analysis, research trends

1. Introduction

The advent of online health and doctor consultation services has catalyzed a transformative shift in healthcare delivery, offering unprecedented accessibility and convenience to individuals seeking medical advice and support (Thompson & Walker, 2015). This paradigm shift has been particularly pronounced in the wake of recent global health crises, such as the COVID-19 pandemic, where the utilization of digital health technologies witnessed a remarkable surge (Wernhart et al., 2019). The imperative to swiftly localize, manage, and treat viral infections, exacerbated by the rapid spread of COVID-19 across continents, underscored the urgent need for efficient solutions, thereby elevating the role of telemedicine and e-health technologies (Senbekov et al., 2020). Consequently, the integration of digital platforms in healthcare not only enhanced accessibility and flexibility but also expedited data sharing and facilitated unprecedented collaboration in vaccine development. Moreover, the COVID-19 pandemic accelerated the adoption of remote working solutions, including telemedicine and online support groups, fostering a culture of self-management and augmenting disease knowledge among individuals (Marshall et al., 2018). This shift in patient engagement has not only revolutionized healthcare delivery but also yielded profound implications for medical research and analysis, generating a wealth of data that has fueled advancements in digital health technologies.

However, amidst the myriad benefits, it is imperative to acknowledge the challenges and limitations that accompany the widespread adoption of digital health technologies (Olu et al., 2019). Issues pertaining to data privacy, security, and equitable access to services warrant meticulous attention to ensure the responsible and effective implementation of online health consultation and telehealth practices. In rural areas, where healthcare disparities are exacerbated by geographical distance and socioeconomic constraints, online doctor consultation emerges as a transformative solution (Goodridge & Marciniuk, 2016; Butzner & Cuffee, 2021; Kumar et al., 2020). By leveraging telemedicine platforms, rural residents can access timely medical advice and treatment without the logistical constraints of travel, thereby improving healthcare accessibility and

affordability. Furthermore, the unprecedented utilization of digital health technologies during the COVID-19 pandemic underscored the potential of data sharing and collaboration in expediting medical treatments and vaccine development (Stoumpos et al., 2023). This shift towards increased self-management and disease knowledge empowers individuals to take control of their health, facilitated by the accessibility of online support groups and resources.

In light of these developments, it is imperative to undertake a comprehensive bibliometric analysis of online health consultation to discern prevailing trends, research landscape, and influential factors driving its growth. Such an analysis holds the promise of unraveling patterns in scholarly publications, identifying key contributors, and elucidating the impact of this burgeoning field on healthcare delivery and patient outcomes. Therefore, this research endeavors to conduct a meticulous bibliometric analysis of online health consultation, aiming to provide nuanced insights into its current state, emerging research areas, and potential implications for healthcare practice and policy. By systematically analyzing existing literature, this study seeks to inform stakeholders, researchers, and policymakers about the evolving landscape of digital health technologies and its transformative potential in improving healthcare delivery.

2. Methodology

2.1. Data retrieval, collection, and filtering

We extensively examined the field and employed the systematic quantitative literature review (SQLR) method to explore and evaluate relevant research. This methodology aligns with previous significant scientific works (Fisch & Block, 2018; Zupic & Čater, 2015). Our study drew from two prominent databases, Web of Science (WOS) and Scopus, which utilize standardized bibliometric formats to collect data from various sources like journal articles. A visual representation of our data collection, screening, and analysis process is depicted in Figure 1.

Initially, we gathered data from the Scopus databases by using the search string: "Online doctor consultation" OR "Online Medical Consultation" OR "Online health consultation" OR "Virtual doctor consultation" OR "Digital healthcare consultation" OR "Medical online consultation" OR "Online health consulting" OR "E-health consultation" OR "Online Teleconsultation" OR "Virtual online consultation" AND doctor OR health OR medical OR "virtual visit" AND doctor OR health OR medical. The search on the databases resulted in 994 publications. We limited ourselves to articles like other SQLRs have done. We further narrowed the range by only considering scientific publications published in English. Seven hundred seventy-six scientific outputs remained after we used these exclusion criteria and removed duplicate data from both lists. We obtained information such as titles, full names of authors, countries of corresponding authors, To gain deeper insights into the selected works, we examined factors such as the overall publication count, citation frequency, academic sources, keywords, institutional affiliations, and countries associated with the included publications in our final sample.

2.2. Data analysis procedure

Research in the field of online health consultation (OHC) was the subject of a bibliometric analysis. A new and effective tool for studying research fields' literature, citation patterns, and partnerships is bibliometric analysis (Yu et al., 2017). Donthu et al. (2021) and Ellegaard and Wallin (2015) state that bibliometric analysis is a powerful tool for scholars since it uses quantitative and statistical methods to find patterns in the literature, assess the influence and effect of academic publications, and discover new insights. It gives scholars a bird's-eye view of the state of knowledge in a particular field of study.

In this work, we survey the literature on telematics-based vehicle insurance studies, focusing on studies that use scientific mapping and performance evaluations. Performance analysis begins with activity indicators (country/region, Authors, Studies, Outlets, etc.) and builds upon them to evaluate the production and effect of publications (Cobo et al., 2011). Some common bibliometric indicators that may be used to quantify the necessary qualities are total publication count (TNP), total citation count (TNC), and average citation count per article (AC). Cluster analysis and theme mapping are scientific mapping techniques that provide light on the knowledge structure (Agarwal et al., 2023; Agbo et al., 2021). In order to collect and analyze data, this work employs two robust visualisation software tools: Bibliometrix (Aria & Cuccurullo, 2017) and VOSviewer (van Eck & Waltman, 2010).

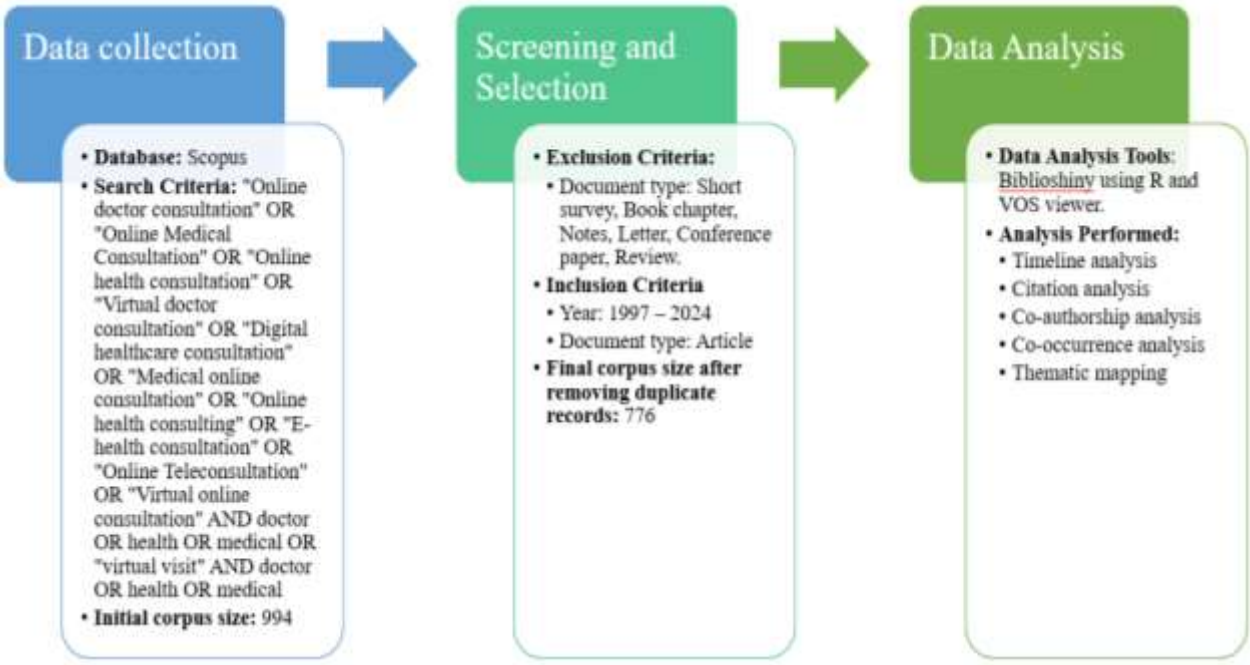

Figure 1: Methodology for bibliometric analysis

3. Findings

3.1. Descriptive statistics

The bibliometric analysis conducted on a dataset spanning from 1997 to 2024 reveals intriguing insights into scholarly research (see table 1). Comprising 776 documents from 482 sources, the dataset exhibits a notable annual growth rate of 14.95%, indicating a thriving body of literature. Despite the relatively young average age of documents at 3.31 years, they demonstrate significant scholarly impact, with an average citation count of 15.51 per document. Authors, totaling 4349 individuals, contribute to this diverse landscape, with 33 single-authored documents and a collaborative spirit evident in the average of 6.49 co-authors per document. Notably, international collaboration constitutes 13.14% of co-authorships, reflecting the global nature of contemporary research endeavors. Document contents include 3888 Keywords Plus and 1804 Author's Keywords, providing rich metadata for analysis. Notably, all documents in the dataset are articles, highlighting the prevalence of this scholarly format. This bibliometric snapshot encapsulates the dynamic nature of scholarly research, emphasizing collaboration, citation impact, and international engagement as key facets of contemporary academic discourse.

Table 1: Descriptive statistics

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1997:2024
Sources (Journals, Books, etc)	482
Documents	776
Annual Growth Rate %	14.95
Document Average Age	3.31
Average citations per doc	15.51
References	1
DOCUMENT CONTENTS	
Keywords Plus (ID)	3888
Author's Keywords (DE)	1804
AUTHORS	
Authors	4349
Authors of single-authored docs	33
AUTHORS COLLABORATION	
Single-authored docs	36
Co-Authors per Doc	6.49
International co-authorships %	13.14
DOCUMENT TYPES	
article	776

3.2. Publishing trend

The trend in publishing research on online health consultation shows a notable increase over the years, particularly in recent times. In the late 1990s and early 2000s, there were only sporadic publications, with 1 or 2 articles per year. The number of publications remained relatively low until around 2004, where there was a slight increase to 4 articles. From 2006 to 2008, there was a gradual rise in publications, reaching up to 4 articles per year. However, there were dips in 2009 and 2010 with no publications recorded (see figure 2).

From 2011 onwards, there was a steady increase in research output, with 3 to 4 articles per year. The trend gained momentum in 2013, with 6 publications, and further accelerated in subsequent years. Particularly noteworthy is the sharp increase observed from 2017 onwards, where the number of publications surged significantly. In 2020, there was a remarkable leap to 86 articles, marking a substantial rise in research activity. This surge continued into 2021 and 2022, with 196 and 170 articles respectively, indicating a burgeoning interest and investment in online health consultation research. This trend reflects the increasing recognition of online health consultation as a crucial aspect of modern healthcare delivery, with researchers and institutions dedicating more resources to studying its efficacy, impact, and implementation.

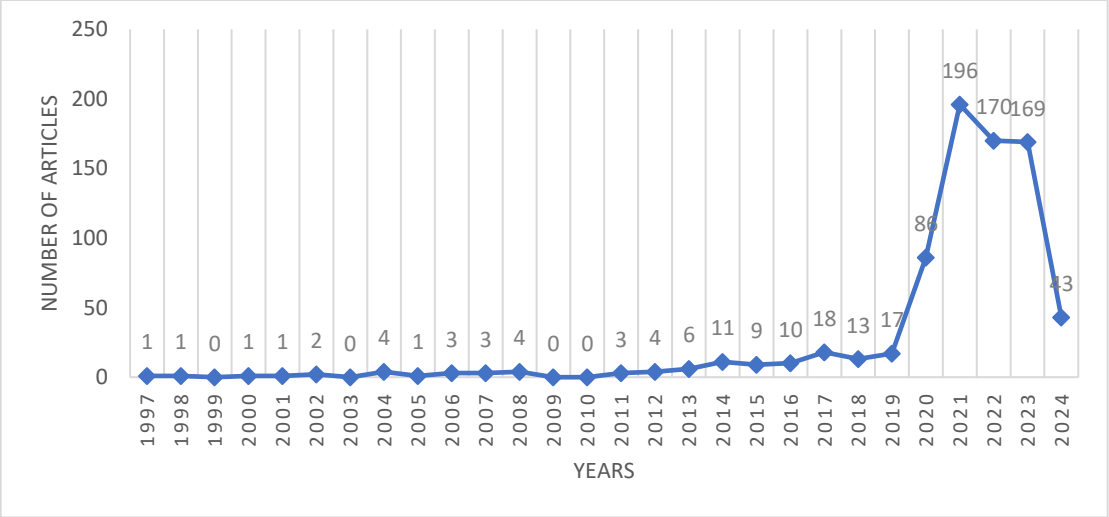

Figure 2: Trend of Scholarly Contribution

3.3. Assessing the Top Performers: Countries, Journals, Studies, Authors and affiliations

3.3.1. Top Countries

In the bibliometric analysis of online health consultation, the distribution of research output and impact metrics across various countries reveals compelling insights. The United States emerges as a leader, with 466 documents and 8145 citations, demonstrating a robust presence in both research output and impact. Following closely, Canada exhibits noteworthy performance with 102 documents and 1429 citations, indicating a significant scholarly impact relative to its output. China, with 87 documents and 1080 citations, reflects a strong citation impact comparable to Canada, highlighting its growing influence in the field. The United Kingdom, Australia, and Germany also contribute substantially to the literature, showcasing a diverse global participation in online health consultation research. Conversely, countries like Indonesia, France, and Israel show lower research output and impact metrics, suggesting areas for potential growth and collaboration. These findings underscore the dynamic landscape of online health consultation research, with certain countries leading the way in knowledge production and dissemination, while others offer opportunities for further exploration and collaboration. (see table 2)

Table 2: Top countries

Country	Documents	Citations	Total link strength
United States	466	8145	91
Canada	102	1429	52
China	87	1080	51
United Kingdom	31	577	42
Australia	18	148	29
Germany	17	183	11
India	12	76	2
Italy	12	210	10
Taiwan	12	210	11
Netherlands	10	206	9
Spain	10	42	5

Switzerland	10	188	6
Hong Kong	9	148	10
Saudi Arabia	9	33	2
Sweden	9	620	15
Indonesia	8	7	2
France	5	48	6
Israel	5	32	2
South Korea	5	38	8

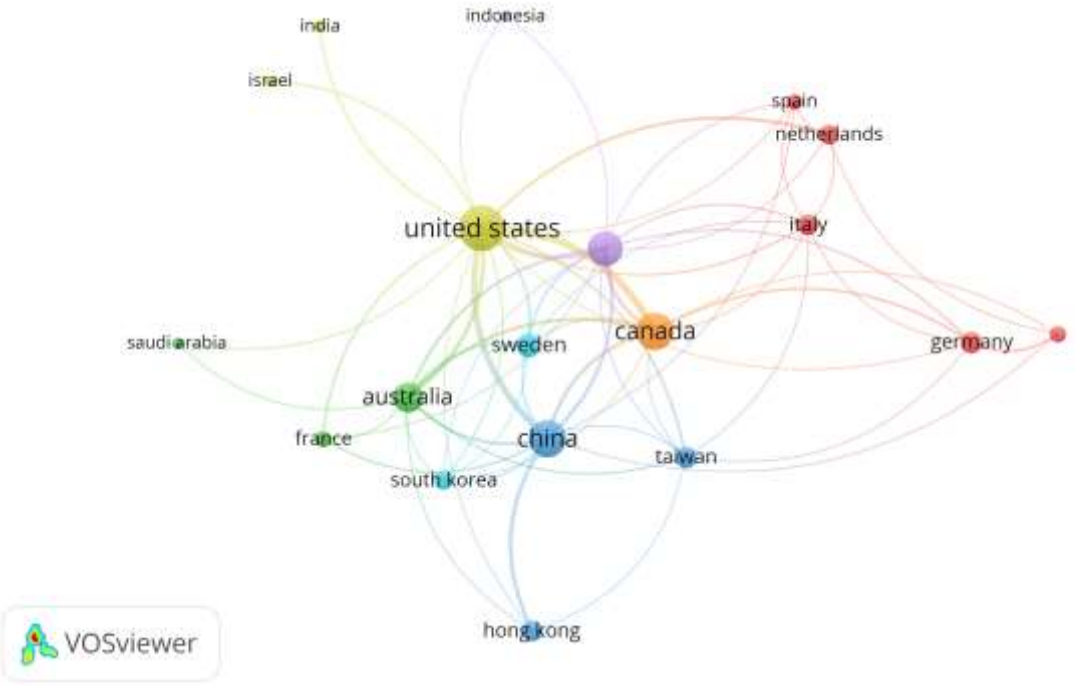

Figure 3: Countries' collaboration network

3.3.2. Top Journals

The bibliometric analysis of journals in the field of online health consultation reveals key insights into their impact and scholarly contribution. Topping the list is the Journal of the American Medical Informatics Association, established in 1997, with 987 total citations across 3 publications, boasting an h-index of 3. Following closely is Telemedicine and e-Health, founded in 2004, with 842 citations spread over 44 publications, exhibiting a robust h-index of 13. Pediatrics, with 557 citations and 5 publications since 2000, maintains a commendable h-index of 5. The International Journal of Medical Informatics, initiated in 2005, has garnered 502 citations through 12 publications, achieving an h-index of 8. Notably, the Journal of Medical Internet Research, launched in 2015, has swiftly gained prominence with 416 citations and an h-index of 10 across 22 publications. These journals, alongside others like Health Affairs, BMJ Open, and Maternal and Child Health Journal, collectively contribute to the scholarly discourse surrounding online health consultation, shaping the landscape of research and innovation in the field. (see table 3)

Table 3: Top Journals: Overall

Journals	TNC	TNP	H index	Starting year
Journal of The American Medical Informatics Association	987	3	3	1997
Telemedicine And E-Health	842	44	13	2004
Pediatrics	557	5	5	2000
International Journal of Medical Informatics	502	12	8	2005
Journal of Medical Internet Research	416	22	10	2015
Health Affairs	320	5	4	2014
American Journal of Obstetrics and Gynecology	305	3	3	2019
Bmj Open	251	8	4	2016
Ieee/Acm Transactions on Computational Biology and Bioinformatics	244	1	1	2021

CMAJ	194	1	1	2021
Maternal and Child Health Journal	181	3	3	2020
American Journal of Physical Medicine And Rehabilitation	174	2	2	2020
American Journal of Perinatology	163	2	1	2020
Neurology	158	1	1	2017
CMAJ Open	149	3	3	2021
General Hospital Psychiatry	147	1	1	2020
American Journal of Kidney Diseases	135	2	2	2016
Journal of Cardiac Failure	132	2	2	2020
Jama Otolaryngology - Head and Neck Surgery	130	1	1	2021
Annals of Surgery	127	2	2	2018
New England Journal of Medicine	110	1	1	2015
Information And Management	102	3	3	2020

The landscape of journals in the realm of telemedicine and e-health is characterized by various publications making significant contributions to the field. According to the h-index Telemedicine and E-Health is leading the list, established in 2004, boasting an impressive h-index of 13, with 842 citations across 44 publications. Following closely is the Journal of Medical Internet Research, emerging in 2015, with an h-index of 10 and 416 citations from 22 publications. The International Journal of Medical Informatics, starting in 2005, maintains an h-index of 8, with 502 citations derived from 12 publications. Noteworthy mentions include the Journal of Telemedicine and Telecare, initiated in 2008, with an h-index of 7 and 97 citations across 11 publications. Additionally, the International Journal of Environmental Research and Public Health, commencing in 2015, has an h-index of 6, with 78 citations from 9 publications. These journals, alongside others like Pediatrics and Health Affairs, play pivotal roles in disseminating knowledge, fostering innovation, and shaping the discourse within the telemedicine and e-health domain. (see table 4)

Table 4: Top journals according to h-index

Journals	h_index	TNC	TNP	Starting year
Telemedicine and E-Health	13	842	44	2004
Journal of Medical Internet Research	10	416	22	2015
International Journal of Medical Informatics	8	502	12	2005
Journal of Telemedicine and Telecare	7	97	11	2008
International Journal of Environmental Research and Public Health	6	78	9	2015
Journal of The American Board of Family Medicine	5	83	9	2021
Health Communication	6	96	8	2019
BMC Health Services Research	4	75	8	2017
BMJ Open	4	251	8	2016
Frontiers In Public Health	2	75	7	2019
Plos One	4	91	6	2021
Pediatrics	5	557	5	2000
Health Affairs	4	320	5	2014
Information Processing and Management	4	58	5	2021
Journal Of Primary Care and Community Health	3	34	5	2021
Medical Care	3	18	5	2023
JMIR Human Factors	2	44	5	2021

3.3.3. Top studies

The study presents a selection of impactful research articles in the field of telemedicine, highlighting their total citations and average citations per year. Topping the list is "COVID-19 transforms health care through telemedicine: Evidence from the field" by MANN DM et al. (2020), with 856 total citations and an impressive average of 171.20 citations per year. Following closely is "Home telehealth—Current state and future trends" by KOCH S (2006), with 308 total citations and an average of 16.21 citations per year. Other notable contributions include "Telemedicine: Pediatric Applications" by HALL RW (2015) and "CNN-RNN Based Intelligent Recommendation for Online Medical Pre-Diagnosis Support" by ZHOU X (2021), with 288 and 244 total citations respectively. These studies reflect the evolving landscape of telemedicine and its increasing relevance, especially in the context of the COVID-19 pandemic, as evidenced by the surge in research activity and citations in recent years. (see table 5)

Table 5: Top studies

Study	Title	TNC	Total Citations per Year
Mann et al., (2020)	COVID-19 transforms health care through telemedicine: Evidence from the field	856	171.20
Koch (2006)	Home telehealth—Current state and future trends	308	16.21
Burke and Hall (2015)	Telemedicine: Pediatric Applications	288	28.80
Zhou and Liang (2020)	CNN-RNN Based Intelligent Recommendation for Online Medical Pre-Diagnosis Support	244	61.00
Glazier et al., (2021)	Shifts in office and virtual primary care during the early COVID-19 pandemic in Ontario, Canada	194	48.50
Finkelstein et al., (2006)	Home telehealth improves clinical outcomes at lower cost for home healthcare	187	9.84
Gray et al., (2000)	Baby CareLink: using the internet and telemedicine to improve care for high-risk infants	178	7.12
Greenhalgh et al., (2016)	Virtual online consultations: advantages and limitations (VOCAL) study	178	19.78
Ashwood et al., (2017)	Direct-To-Consumer Telehealth May Increase Access To Care But Does Not Decrease Spending	176	22.00
Tenforde et al., (2020)	Outpatient Physical, Occupational, and Speech Therapy Synchronous Telemedicine: A Survey Study of Patient Satisfaction with Virtual Visits During the COVID-19 Pandemic	163	32.60
Aziz et al., (2020)	Telehealth for High-Risk Pregnancies in the Setting of the COVID-19 Pandemic	163	32.60
Beck et al., (2017)	National randomized controlled trial of virtual house calls for Parkinson disease	158	19.75
Chen et al., (2020)	COVID-19 and telepsychiatry: Early outpatient experiences and implications for the future	147	29.40
Fryer et al., (2020)	Implementation of Obstetric Telehealth During COVID-19 and Beyond	143	28.60
Darrat et al., (2021)	Socioeconomic Disparities in Patient Use of Telehealth During the Coronavirus Disease 2019 Surge	130	32.50
Gorodeski et al., (2020)	Virtual Visits for Care of Patients with Heart Failure in the Era of COVID-19: A Statement from the Heart Failure Society of America	129	25.80
Tobah et al., (2019)	Randomized comparison of a reduced-visit prenatal care model enhanced with remote monitoring	125	20.83
Bhatia et al., (2021)	Virtual care use before and during the COVID-19 pandemic: a repeated cross-sectional study	121	30.25
Peahl et al., (2020)	Prenatal care redesign: creating flexible maternity care models through virtual care	110	22.00
Kahn (2015)	Virtual visits--confronting the challenges of telemedicine	110	11.00

3.3.4. Top authors

The table 6 provides insights into the scholarly contributions of various authors in the field of telemedicine, including the number of publications, total citations, and h-index. Zhang Y stands out with 14 publications but has garnered 83 citations, resulting in an h-index of 5. Bhatia RS and Zhang X also exhibit similar h-index values despite varying numbers of publications, with 10 publications each and total citations of 212 and 131 respectively. Notable mentions include Agarwal P and Stamenova V, each with 9 publications and h-indices of 5 and 4 respectively, indicating significant scholarly impact. Chu C, Mao Y, and Bhattacharyya O demonstrate notable contributions with 6 publications each and h-indices of 4. Meanwhile, Tu K and Tadrous M have 6 publications but lower h-indices of 3 and 2 respectively. These authors collectively contribute to the evolving

discourse and advancement of knowledge in the field of telemedicine, shaping its trajectory through their research endeavors. (see table 6)

Table 6: Top authors

Authors	TNP	TNC	h_index
Zhang Y	14	83	5
Bhatia RS	10	212	5
Zhang X	10	131	5
Agarwal P	9	101	5
Martin D	9	61	5
Bhattacharyya O	8	85	4
Stamenova V	7	184	4
Chu C	6	144	4
Mao Y	6	66	4
Tu K	6	73	3
Tadrous M	6	128	2
Mukerji G	5	40	4
Nguyen M	5	117	4
Ring D	5	73	4
Schmidt-Weitmann S	5	40	3
Liu X	5	22	2
Wang H	5	36	2

3.4. 5. Top affiliations

The affiliation institutes of authors in the field of telemedicine are diverse, reflecting a wide range of academic and healthcare institutions contributing to research in this area. Harvard Medical School leads with 189 articles, followed by the University of Toronto with 147 articles. Other prominent institutions include the University of Michigan (49 articles), Massachusetts General Hospital (46 articles), and the University of California (42 articles). Yale School of Medicine, McMaster University, and the Medical University of South Carolina also make significant contributions, with 39, 36, and 35 articles respectively. Additionally, institutes like Stanford University School of Medicine, University of Rochester, University Health Network, and Mayo Clinic are actively involved in telemedicine research, each producing around 30 to 34 articles. These institutions, alongside others listed, play pivotal roles in advancing knowledge and innovation in the field of telemedicine, fostering collaboration and driving progress in healthcare delivery and technology integration. (see figure 4)

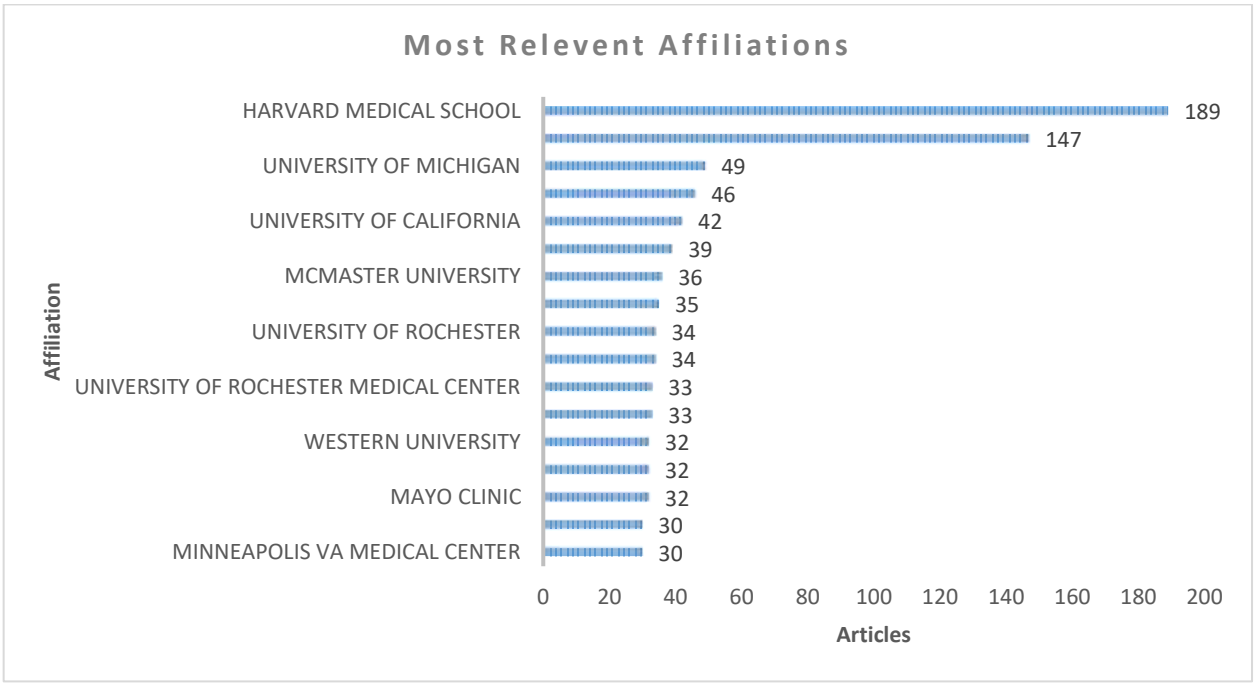

Figure 4: Most relevant affiliations

3.4. Scientific mapping

3.4.1. Thematic Mapping and Topic trends

Clustering and co-word network analysis form the basis of the theme mapping (Cobo et al., 2011). Researchers and stakeholders may benefit from this study since it reveals which field theme areas have the most promise for future research development (Agbo et al., 2021). The goal of thematic analysis is to discover overarching themes by grouping similar terms used by different writers and then studying how those keywords relate to one another. Density and centrality are two distinguishing characteristics of these topics. Along the vertical axis we see density and along the horizontal axis we see centrality. The degree to which one cluster in a network interacts with other clusters may provide light on the importance of a certain subject; this concept is known as centrality. According to Esfahani et al. (2019), density is a measure of the theme's development that takes into account the internal strength of a cluster network. These two attributes determine the significance of an issue and how well-developed it is. See Figure 5 for a thematic map of the automotive telematics and insurance industry, split into four sections representing different types of themes: motor, niche, emerging/declining, and basic.

To organize the online health consultation research sector, Q1 selects key topics including "*quality of care, Health services research, long term care, acceptability and quality improvement*" that are both well-developed and significant. The second quarter reveals specialized topics that have formed connections among themselves but have had only a little impact on the growth of online health consulting as a whole. Based on these results, it seems that there should be more of an emphasis on online medical consultation in Q2 themes like *"Health communication and health information"* when discussing treatments like *"ultrasound" and "antenatal care"* that need the actual presence of a doctor. Researchers in this area could look at these obstacles to online health consultations' development. While concepts like *"trust," "sentiment analysis,"* and *"artificial intelligence"* have surfaced in relation to OHCs in recent years, they are still in their early stages of development, therefore there aren't many themes in Q3 that deal with this topic. Themes like *"online consultation," "video consultation," "electronic health records,"* and *"telemedicine"* appeared in the fourth quarter and are fundamental to the growth of OHCs. (see figure 5)

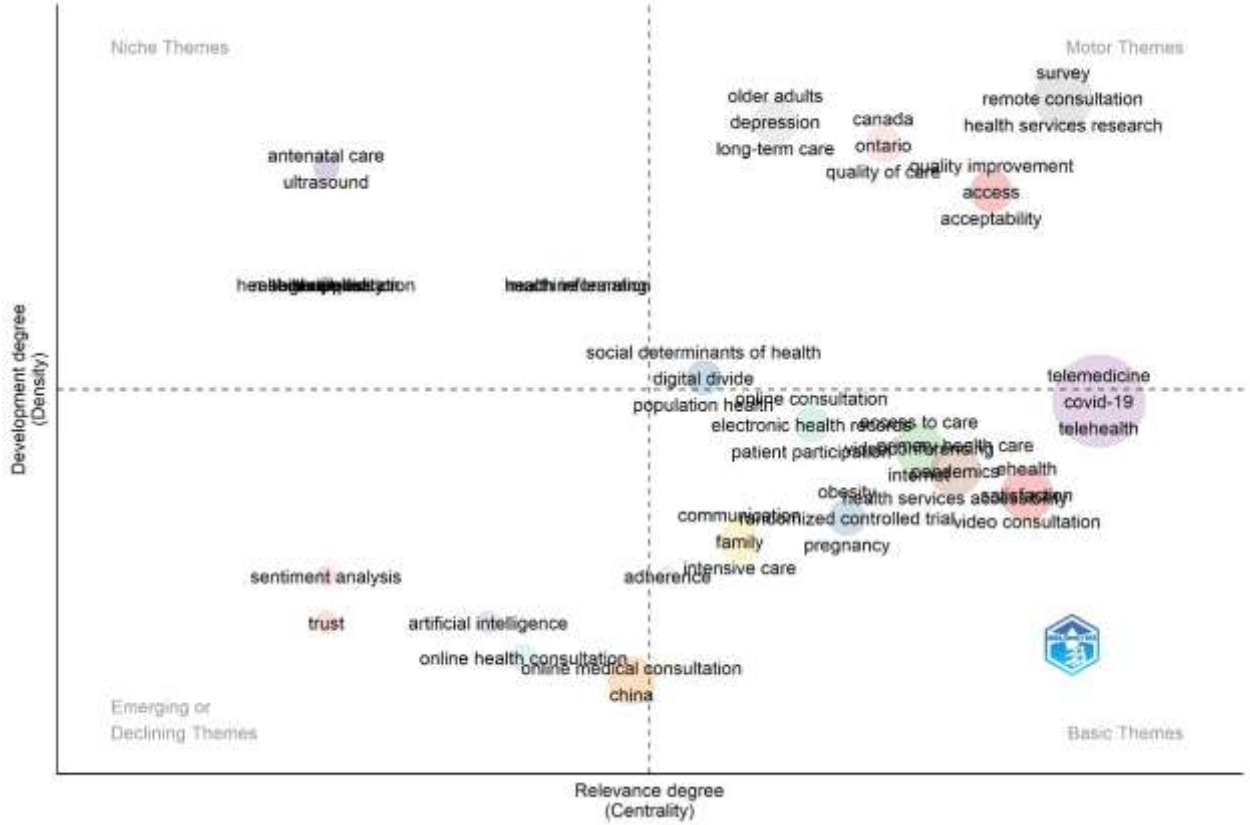

Figure 5: Thematic map

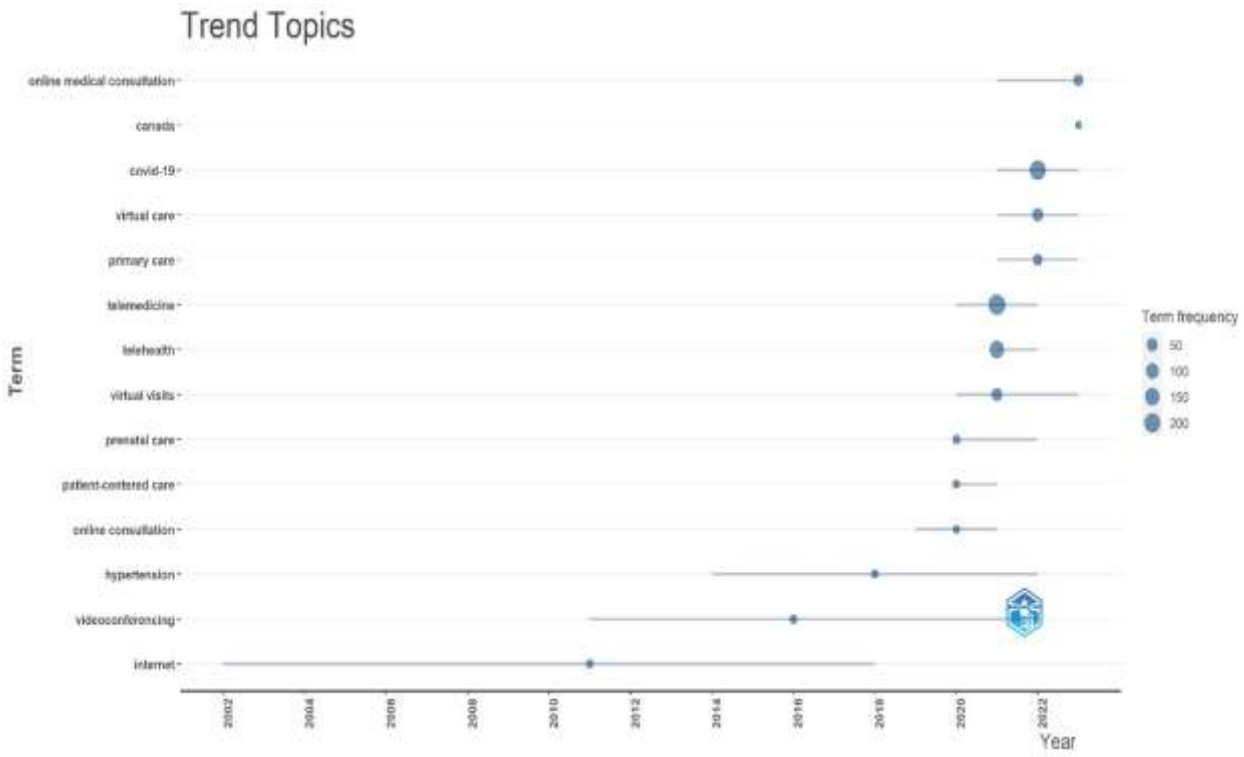

Figure 6: Trend topics

4. Discussion

4.1. Key findings

The present study provides a comprehensive overview of the literature on online health consultations (OHCs) from 1997 to 2024, utilizing bibliometric analysis to understand various aspects such as prolific countries, authors, research themes, and publication venues. One notable finding is the significant growth in publications related to telematics-based automobile insurance, especially after the COVID-19 pandemic, with over 500 articles published. Despite the longstanding presence of the concept, it appears to be an evolving topic that necessitates further conceptual development. The primary focus of research in OHCs has been on enhancing the accessibility of health consultations through technology, which could potentially benefit online doctor consultation provider companies. In terms of publication venues, the Journal of the American Medical Informatics Association and Telemedicine and E-Health emerge as prominent outlets. The paper "COVID-19 transforms health care through telemedicine: Evidence from the field" by MANN DM et al. (2020) seems to be particularly influential in this domain. Regarding authors, Zhang Y stands out with 14 publications, while Harvard Medical School leads with 189 articles, indicating their significant contributions to the field. Overall, this study sheds light on the evolving landscape of online health consultations and underscores the importance of continued research in this area to further advance understanding and implementation.

4.2. Direction for future research

Based on the knowledge acquired from this bibliometric study, future studies might further investigate certain facets of online health and medical consultation. For instance,

1. it is important to carry out research in developing nations, particularly in rural regions.
2. Research on doctor-patient communication and satisfaction is necessary. This will result in improved spread of these crucial services.
3. Further research is required to enhance the experience of both patent and physicians via advancements in technology and system development. AI and other immersive technologies may be used.
4. Analyzing the influence of internet platforms on patient results
5. Investigating the efficacy of various online consultation approaches
6. Examining the ethical and regulatory factors related to the provision of healthcare services online.

The aforementioned areas show great potential for future research. By tackling these areas of study that have not yet been explored, researchers may contribute to a more thorough and complete knowledge of the function and possibilities of online health and doctor consultation.

5. Conclusion

In conclusion, the bibliometric analysis of online health or doctor consultation articles provides valuable insights into the evolving landscape of healthcare delivery. The increasing volume of literature in this area underscores the growing significance of online platforms for accessing healthcare services. The findings have practical implications for healthcare practice and point towards important avenues for future research. As online health and doctor consultation continue to shape the healthcare landscape, it is imperative for stakeholders to stay informed and engaged with the latest developments in this rapidly evolving field.

References

1. Butzner, M., & Cuffee, Y. (2021). Telehealth interventions and outcomes across rural communities in the United States: narrative review. Journal of medical Internet research, 23(8), e29575.
2. Goodridge, D., & Marciniuk, D. (2016). Rural and remote care: Overcoming the challenges of distance. Chronic respiratory disease, 13(2), 192-203.
3. Kumar, A., Nayar, K. R., & Koya, S. F. (2020). COVID-19: Challenges and its consequences for rural health care in India. Public Health in Practice, 1, 100009.
4. Marshall, M., Shah, R., & Stokes-Lampard, H. (2018, March 26). Online consulting in general practice: making the move from disruptive innovation to mainstream service. BMJ. British medical journal. https://www.bmj.com/content/360/bmj.k1195
5. Olu, O., Muneene, D., Bataringaya, J. E., Nahimana, M. R., Ba, H., Turgeon, Y., ... & Dovlo, D. (2019). How can digital health technologies contribute to sustainable attainment of universal health coverage in Africa? A perspective. Frontiers in public health, 7, 341.
6. Senbekov, M., Saliev, T., Bukeyeva, Z., Almabayeva, A., Zhanaliyeva, M., Aitenova, N., ... & Fakhradiyev, I. (2020). The recent progress and applications of digital technologies in healthcare: a review. International journal of telemedicine and applications, 2020.
7. Stoumpos, A. I., Kitsios, F., & Talias, M. A. (2023). Digital transformation in healthcare: technology acceptance and its applications. International journal of environmental research and public health, 20(4), 3407.
8. Thompson, D. F., & Walker, C. K. (2015). A descriptive and historical review of bibliometrics with applications to medical sciences. Pharmacotherapy: The Journal of Human Pharmacology and Drug Therapy, 35(6), 551-559.
9. Wernhart, A., Gahbauer, S., & Haluza, D. (2019). eHealth and telemedicine: Practices and beliefs among healthcare professionals and medical students at a medical university. PloS one, 14(2), e0213067.
10. Mann, D. M., Chen, J., Chunara, R., Testa, P. A., & Nov, O. (2020). COVID-19 transforms health care through telemedicine: evidence from the field. *Journal of the American Medical Informatics Association*, *27*(7), 1132-1135.
11. Koch, S. (2006). Home telehealth—current state and future trends. *International journal of medical informatics*, *75*(8), 565-576.
12. Burke Jr, B. L., Hall, R. W., Section on Telehealth Care, Dehnel, P. J., Alexander, J. J., Bell, D. M., ... & Kile, J. R. (2015). Telemedicine: pediatric applications.
13. Zhou, X., Li, Y., & Liang, W. (2020). CNN-RNN based intelligent recommendation for online medical pre-diagnosis support. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, *18*(3), 912-921.
14. Glazier, R. H., Green, M. E., Wu, F. C., Frymire, E., Kopp, A., & Kiran, T. (2021). Shifts in office and virtual primary care during the early COVID-19 pandemic in Ontario, Canada. *Cmaj*, *193*(6), E200-E210.
15. Finkelstein, S. M., Speedie, S. M., & Potthoff, S. (2006). Home telehealth improves clinical outcomes at lower cost for home healthcare. *Telemedicine Journal & e-Health*, *12*(2), 128-136.
16. Gray, J. E., Safran, C., Davis, R. B., Pompilio-Weitzner, G., Stewart, J. E., Zaccagnini, L., & Pursley, D. (2000). Baby CareLink: using the internet and telemedicine to improve care for high-risk infants. *Pediatrics*, *106*(6), 1318-1324.
17. Greenhalgh, T., Vijayaraghavan, S., Wherton, J., Shaw, S., Byrne, E., Campbell-Richards, D., ... & Morris, J. (2016). Virtual online consultations: advantages and limitations (VOCAL) study. *BMJ open*, *6*(1), e009388.
18. Ashwood, J. S., Mehrotra, A., Cowling, D., & Uscher-Pines, L. (2017). Direct-to-consumer telehealth may increase access to care but does not decrease spending. *Health Affairs*, *36*(3), 485-491.
19. Tenforde, A. S., Borgstrom, H., Polich, G., Steere, H., Davis, I. S., Cotton, K., & Silver, J. K. (2020). Outpatient physical, occupational, and speech therapy synchronous telemedicine: a survey study of patient satisfaction with virtual visits during the COVID-19 pandemic. *American journal of physical medicine & rehabilitation*, *99*(11), 977-981.
20. Aziz, A., Zork, N., Aubey, J. J., Baptiste, C. D., D'Alton, M. E., Emeruwa, U. N., ... & Friedman, A. M. (2020). Telehealth for high-risk pregnancies in the setting of the COVID-19 pandemic. *American journal of perinatology*, *37*(08), 800-808.

21. Beck, C. A., Beran, D. B., Biglan, K. M., Boyd, C. M., Dorsey, E. R., Schmidt, P. N., ... & Zhu, W. (2017). National randomized controlled trial of virtual house calls for Parkinson disease. *Neurology*, *89*(11), 1152-1161.
22. Chen, J. A., Chung, W. J., Young, S. K., Tuttle, M. C., Collins, M. B., Darghouth, S. L., ... & Huffman, J. C. (2020). COVID-19 and telepsychiatry: Early outpatient experiences and implications for the future. *General hospital psychiatry*, *66*, 89-95.
23. Fryer, K., Delgado, A., Foti, T., Reid, C. N., & Marshall, J. (2020). Implementation of obstetric telehealth during COVID-19 and beyond. *Maternal and child health journal*, *24*, 1104-1110.
24. Darrat, I., Tam, S., Boulis, M., & Williams, A. M. (2021). Socioeconomic disparities in patient use of telehealth during the coronavirus disease 2019 surge. *JAMA Otolaryngology–Head & Neck Surgery*, *147*(3), 287-295.
25. Gorodeski, E. Z., Goyal, P., Cox, Z. L., Thibodeau, J. T., Reay, R. E., Rasmusson, K., ... & Starling, R. C. (2020). Virtual visits for care of patients with heart failure in the era of COVID-19: a statement from the Heart Failure Society of America. *Journal of Cardiac Failure*, *26*(6), 448-456.
26. Tobah, Y. S. B., LeBlanc, A., Branda, M. E., Inselman, J. W., Morris, M. A., Ridgeway, J. L., ... & Famuyide, A. (2019). Randomized comparison of a reduced-visit prenatal care model enhanced with remote monitoring. *American Journal of Obstetrics and Gynecology*, *221*(6), 638-e1.
27. Bhatia, R. S., Chu, C., Pang, A., Tadrous, M., Stamenova, V., & Cram, P. (2021). Virtual care use before and during the COVID-19 pandemic: a repeated cross-sectional study. *Canadian Medical Association Open Access Journal*, *9*(1), E107-E114.
28. Peahl, A. F., Smith, R. D., & Moniz, M. H. (2020). Prenatal care redesign: creating flexible maternity care models through virtual care. *American journal of obstetrics and gynecology*, *223*(3), 389-e1.
29. Kahn, J. M. (2015). Virtual visits—confronting the challenges of telemedicine. *N Engl J Med*, *372*(18), 1684-1685.