

Analysis of Indian Medical Tourism literature using a bibliometric and narrative-based approach

AMARTYA GHOSH * [amartya.ghosh@sibmhyd.edu.in]

SATYA PRASAD VK ** [vk.satyaprasad@sibmhyd.edu.in]

Abstract | India, among the developing countries, is a popular medical tourism destination for international medical patients looking for low-cost yet quality health care. The Medical Tourism discipline has a small body of literature, and scholarly research on India's attractiveness and potential as a top medical tourism destination is particularly scarce. The goal of this study, employing bibliometric analysis as a method, aims to identify the most influential research produced by academic stakeholders who have contributed to this field. The Bibliometrix - R package is used to analyze peer-reviewed journal articles indexed in Scopus and Web of Science databases published between 2011 and 2021 to achieve the study's objectives. The bibliometric study reveals the most cited documents and authors in the Indian medical tourism (MT) discipline, the top journals that publish MT-related papers, and the keywords and sub-themes that appear in the studies. Furthermore, since the Covid-19 pandemic has severely impacted the MT sector, the study also refers to secondary data sources such as articles and published reports from government, ministries, and consulting firms to gain insight into future trends that will likely affect international medical tourists seeking treatment in India.

Keywords | Indian medical tourism, literature review, bibliometric analysis, Covid-19, post-pandemic healthcare, international patients

* **Research Scholar** (JRF), (Faculty of Management). Symbiosis Institute of Business Management (SIBM), Hyderabad. Symbiosis International (Deemed University), India. ORCID: <https://orcid.org/0000-0002-9865-1084>

** **Associate Professor**, Symbiosis Institute of Business Management (SIBM), Hyderabad. Symbiosis International (Deemed University), India

1. Introduction

On March 11, 2020, the World Health Organization (WHO) designated the Coronavirus Disease, also known as (Covid-19), a global pandemic. The pandemic has had a significant impact on the tourism industry worldwide, with travel restrictions imposed to prevent the disease's spread. As estimated, the global tourism sector lost about USD 1.2 trillion in 2020 due to the pandemic (UNCTAD, n.d.). The pandemic shock has impacted both the demand-side and supply-side variables in the tourism industry. Consumer demand in the tourism industry involves restrictions on freedom of movement, border closures, and guests' fear of contagion. On the other hand, supply-side factors include the closure of hotels, restaurants, and recreational facilities – all of which are essential components of the tourism industry (Uğur & Akbiyık, 2020). The foreign travel ban harmed a considerable number of medical tourists throughout the world, who were unable to go abroad for treatment and other healthcare-related services during the lockdown and the period after it. In 2020, 1.83 lakh foreign visitors arrived in India for medical reasons, compared to 6.97 lakh in 2019, resulting in a 73.7 percent drop in medical tourist visits due to the Covid-19 outbreak. Despite the decline caused by the pandemic, incoming international patients still accounted for 6.7 percent of total Foreign Tourist Arrivals (FTAs). This ratio, however has stayed steady over the past few years regardless of the decline caused by the pandemic (Ministry of Tourism, 2021b, 2021a).

Several researchers (Cohen, 2010; Connell, 2006; Gan & Frederick, 2011; Hallem & Barth, 2011) in their studies, have highlighted the 'shift' observed in the patients seeking health care services from developing nations rather than availing them from the advanced western countries – as done previously. The Indian healthcare sector is deemed attractive to international patients because of the availability of quality services at relatively

low costs compared to Western countries (Chaulagain et al., 2020; KPMG, 2021). Gan and Frederick (2011), in their study, state that Foreign healthcare providers (FHP) catering the international patients, including patients from the United States, demonstrate their quality level by having western-trained doctors and having affiliations with US hospitals; while also having international accreditations such as Joint Commission International (JCI), and International Organization for Standardization (ISO), etc., which further enables the FHPs to earn the trust of the international patients (Musa et al., 2012).

Although the Medical Tourism (MT) sector is quite lucrative, and an important Foreign Exchange Earning (FEE) source for India, there is a dearth of academic literature discussing the outlook and future potential of the international medical tourists seeking health care related services in India. This study presents an overview of the research literature to facilitate understanding India's Medical Tourism sector using a bibliometric approach. Secondly, it also discusses the changes that are likely to shape the Indian MT sector due to the Covid-19 pandemic. The following section reviews the existing MT literature, especially the evolution of the MT concept over the years, the drivers of the MT sector globally from a healthcare consumers' perspective, and how it aids in the infrastructural and economic growth.

2. Review of Medical Tourism literature

2.1. Definition of Medical Tourism – a global perspective

The concept of Medical Tourism has evolved over the years. In their seminal paper about healthcare tourism, Goodrich and Goodrich (1987) defined medical tourism as "the attempt on the part of a tourist facility or destination to attract tou-

rists by deliberately promoting its healthcare services and facilities, in addition to its regular tourist amenities.” Since then, the definition of ‘medical tourism’ has had a few revisions. Gupta (2004) defined medical tourism as “the provision of cost-effective medical care to patients in collaboration with the tourism industry. This process is usually facilitated by the private medical sector, whereas both the private and the public sectors are involved in the tourism industry.” Furthermore, Keckley and Underwood (2008) define medical tourism simply as “the act of traveling abroad to obtain medical care.” Similarly, de la Hoz-Correa et al. (2018) in their paper mention medical tourism as “the act of traveling to a foreign country to access health care, associating it with tourist activities.” In a broad sense, the definition of medical tourism given by several authors relates to the same central theme, with (Heung et al., 2010) providing a more holistic sense to the term by stating it as “Medical tourism refers to a vacation that involves traveling across international borders to obtain a broad range of medical services. It usually includes leisure, fun, and relaxation activities, as well as wellness and health-care service”.

2.2. Growth factors of Medical Tourism - a healthcare service consumers' perspective

Medical Tourism has been observed as a “rising global phenomenon” in the 21st century. The growth of healthcare tourism results from globalization and neo-liberalization, resulting in lower costs, better health care quality, and shorter waiting periods in the healthcare sector of the economies, which have fostered the growth of the MT sector and subsequently attracted such large footfalls of MT patients. The potential for cost savings is a strong motivating factor that encourages people to travel long distances in search of affordable medical care or seek special medical services that are not available in their home country (de

la Hoz-Correa et al., 2018). As per Crooks et al. (2011), this holds particularly true for patients coming from privately funded health systems without having access to universal medical insurance. On the other side, people prefer to seek medical treatment overseas despite having access to publicly-funded medical care in their own country owing to excessive wait periods or to seek out particular medical services that are either not accessible in their home country or are illegal in some cases. Another significant driver of the MT sector is medical insurance. As insurance-related problems faced by patients in their home countries rise, they seek healthcare outside their own countries with more potential for cost savings (Connell, 2006; Han & Hwang, 2018). Moreover, the shift to insurance purchases is seen by such multinational corporations, which invest in obtaining trustworthy medical insurance from the target country – in which they are traveling for treatment, to ensure that highly trained professionals with global reputation provide reliable medical care (Han, 2013).

In another study by Lovelock and Lovelock (2018), it is stated that four key factors influence medical tourist patients to avail treatment overseas: first, the nature of the medical procedure (level of invasiveness and post-treatment recovery requirements); second, personal factors (e.g., travel experience, resilience, accompanying companions); third, destination factors, and lastly, financial factors. Furthermore, Lu et al. (2016) claim that hospital characteristics such as service quality, institution trustworthiness, and hospital image affect the perceived value of medical travel.

2.3. Growth factors of Medical Tourism – an infrastructure-level perspective

Talking about the supply side of the overall tourism industry as to what attracts international tourists to any particular country, Barman and Nath (2019) in their paper state that private initi-

atives and investment which are exclusively focused on the development of basic infrastructure is a significant driver for the international tourist footfalls. Secondly, Governments that implement proper monetary policy that ensures a low and steady inflation rate also help to promote international tourism, enticing MTs to use healthcare services in those countries. Furthermore, medical tourism and economic growth are linked because inbound foreign medical tourists boost the economy's Foreign Exchange Earnings (FEE); and more so, medical tourism has a beneficial impact on the host country's economic production, particularly in non-OECD nations (Beladi et al., 2019). Apart from the cost, type, and quality of healthcare services as deciding criteria, the function of Medical Tourism Facilitators (MTF) is playing an increasingly important role in the worldwide expansion of the medical tourism (Gan & Frederick, 2011; Moghavvemi et al., 2017; Singh, 2013; Skountridaki, 2017). In the study done by Cormany and Baloglu (2011), it is found that MTFs offer assistance in areas such as transference of medical records, providing destination area cell phone support, pre and post-operative treatment in the home country, and working with the MT clients to offer translation and financing options to pay for travel and medical costs in the destination country. Chaulagain et al. (2020) interestingly emphasize the MTFs' role to increase the potential tourists' understanding of the Medical Tourism benefits. MTFs from the host country should promote the high standard of medical attention, the reputation of the hospital facilities, specialization of the hospital, and accrediting the health services in the host country. Furthermore, the success of the MTFs in the MT sector is dependent on the host country's healthcare systems' connectivity and Information Communication Technology (ICT) infrastructure (Sarantopoulos et al., 2014). For instance, Ayuningtyas and Ariwibowo (2020), in their paper have stressed the importance of ICT's strategic role, especially in the first phase or pre-procedure

of medical tourism, wherein the patient first seeks information about the treatment to be availed for the ailment and other procedures, up to the point where the actual treatment is administered. Additionally, ICT enables the patient, MTFs, and the final healthcare service provider to discuss and collaborate using the internet and web-based software, thus having clear communication and reducing the scope for discrepancies and misunderstandings among the stakeholders.

Overall, the existing literature on MT provides an overview of the evolution of the MT concept over the years, as well as the drivers of the MT sector from a global perspective. However, there is a paucity of scholarly literature focusing exclusively on the Indian MT industry, and thus the bibliometric review method was used to conduct a transparent and reproducible review of the research literature based on statistical measurements of scientific, scholarly production.

3. Methodology

According to van Raan (2004), bibliometric review offers researchers a consistent and standardized range of quantitative indicators that aid in qualitative inferences and insights of academic literature. In this study, a bibliometric analysis was undertaken to figure out the most productive and influential research done in the MT sector in India between 2011 and 2021 to comprehend the scholarly production done so far. The retrospective analysis was conducted using the Bibliometrix R package developed by Aria and Cuccurullo (2017). The Bibliometrix R package makes it easy to conduct a full bibliometric analysis using methods designed for both bibliometric and scientometric quantitative research fields (Ghosh & Satya Prasad, 2021). The bibliometric metadata related to the MT sector in India was obtained from Scopus and Web of Science (WoS) databa-

ses, and the search terms used to fetch the records were “Medical Tourism” AND “India” with the period ranging from 2011 to 2021. Only the document types ‘Articles’ and ‘Reviews’ were used for the analysis. Furthermore, documents about only “Business” and “Social Science” are included, as the purpose is to understand what motivates international medical tourists to visit India, rather than going deeper into the complex offerings of medical science concerning the ailments encountered. With the exception of 84 duplicate items that were removed after combining both data files, the total number of records collected from both abstract databases was 250. The bibliometric analysis revealed the annual scientific output since 2011; the top-cited authors in this field; the top journals that actively publish documents connected to medical tourism; and the keywords and topics that appeared in the studies. The analysis provides a retrospective view of previous scholarly activity, which will aid newcomers in becoming acquainted with the Indian MT sector. However, because the MT sector has been dramatically affected by the Covid-19 pandemic, which is a relatively new phenomenon with little literature available on the subject, the study also refers to secondary data sources such as articles and published reports from government, ministries, and consulting firms to gain insights into future trends that will likely affect international medical tourists visiting India for treatment. Figure 1 illustrates the research framework used in this study.

The bibliometric analysis successfully answers the 4 research questions (RQs) and meets this study’s objectives partially. The core focus of the analysis is to determine the volume of scholarly work related to the Indian MT domain done to date and to evaluate the growth rate of the scientific literature in the Indian MT sector. Additionally, it is important to identify those influential authors

who have contributed to this sector, especially the foreign authors who are particularly interested in working in the Indian MT sector. Furthermore, using the trend map feature of the Bibliometrix R tool, an attempt has been made to learn about the emerging themes or topics in the Indian MT research area on which authors have worked in the past decade. The keywords used in their studies highlight the ‘topic’ of study during that point in time when it was studied. Lastly, it is even more critical to identify the journals actively publishing articles related to the Indian MT research area. This is especially beneficial for the new researchers interested in contributing to this field of study. For the remaining 2 research questions that focus on seeking insight regarding the drivers for the international patients visiting India for their healthcare-related needs, and what will be the post-covid 19 outlooks of the MT sector overall in terms of future trends that are likely to affect the industry, the study uses secondary resources to fulfill the research objectives. The 6 RQs can be summarized as follows:

RQ1: What is the annual scientific publication growth related to the Indian MT research?

RQ2: Who are the most productive authors in this area?

RQ3: Which journals do the authors mainly publish their articles in?

RQ4: What are the keywords/themes used by the authors in their articles?

RQ5: Why do international patients prefer to avail treatment from Indian healthcare facilities?

RQ6: What will be the post-pandemic outlook of the MT sector in India?

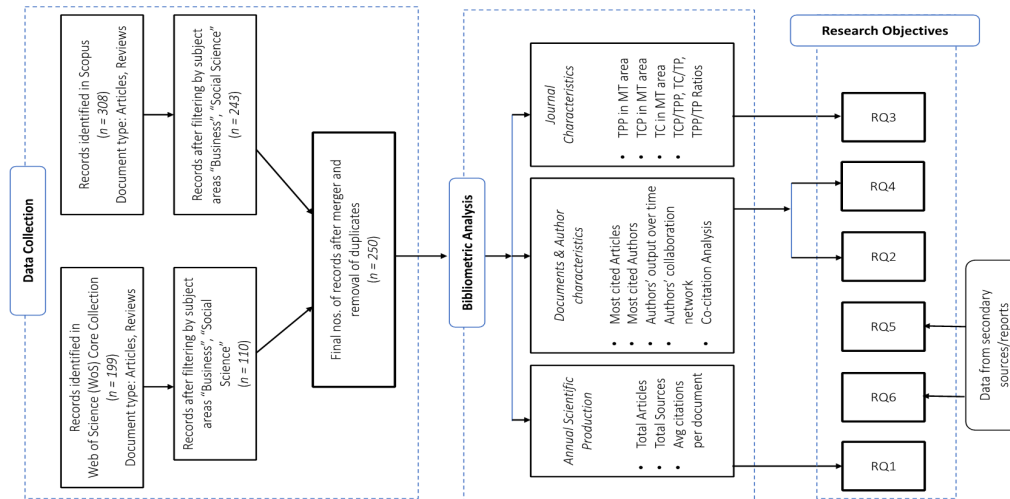


Figure 1 | Research Framework

4. Results and Analysis

4.1. Overview of collected Data

Figure 2 depicts the incremental trend in the scientific production of the scholarly literature related to India's medical tourism (MT) sector from 2011 to 2021, with an annual growth rate of 6.1 percent. Every year, on average, about 22 articles are published, which is relatively low when compared to other disciplines' output, thereby having an enormous scope for researchers to publish articles related to this domain. Table 1 highlights the bibliometric data overview. According to the main information overview, over 747 authors have contributed to this field of study so far, spanning 196 sources. There are also 66 articles with a single author and 575 documents with multiple authors. Furthermore, the average number of citations per document is 9.97.

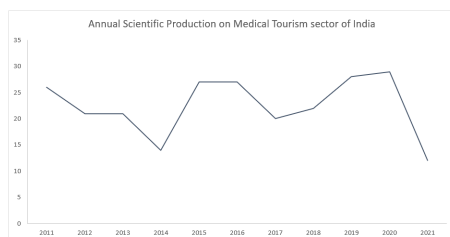


Figure 2 | Evolution of the number of articles published on India's Medical Tourism sector
Source: Scopus and Web of Science Database

Table 1 | Summary of the Data

	DESCRIPTION	RESULTS
Main Information About Data	Timespan	2011:2021
	Sources (Journals, Books, etc.)	196
	Documents	250
	Average citations per documents	9.968
	References	2437
Document Types	Article	203
	Article; book chapter	7
	Article; early access	3
	Review	37
	Author's Keywords (DE)	730
Authors	Author Appearances	747
	Authors of single-authored documents	65
	Authors of multi-authored documents	575
	Authors per Document	2.56
Authors Collaboration	Co-Authors per Documents	2.99
	Collaboration Index	3.12

4.2. Document and Author characteristics

The bibliometric analysis at the document level reveals the following indicators – most cited articles and authors in this field, authors production over time, co-citation network, and authors collaboration network. The analysis also reveals the sub-themes that have arisen from Indian MT scholarly writings over time. Table 2 lists the most relevant authors and highly-cited documents in this field of study. It can be observed that Crooks, et al., Phuka, et al., and Smith, et al. are the most cited authors for their works which focus on the Indian MT sector. Especially the research article

titled 'Promoting Medical Tourism To India Messages Images And The Marketing Of International Patient Travel' by Crooks V et. al, published in *Social Science & Medicine Journal* (Impact Factor 4.634 and cite score of 6.1), which discusses the promotion of Medical Tourism in India to international patients. Figure 3 depicts the authors collaboration network, revealing that six clusters-blue, purple, brown, green, orange, and aqua, have more than three authors working together on their project. The blue-colored cluster includes Medhekar, Hall, and Wong, who have collaborated on multiple works. Similarly, Kingsbury, Snyder, Crooks, Turner, and Johnston are members of the purple cluster and have worked together on several projects. The co-citation network is depicted in Figure 4. Green, blue, purple, and red clusters are highlighted in the network, with the green and purple

clusters having the most co-cited authors. Interestingly, all except the red cluster cite the research article titled 'Medical tourism: globalization of the healthcare marketplace' by Horowitz (2007).

Figure 5 depicts the author's output over time, including data such as the number of documents published and Total Citations (TC) received each year. In recent years, it has been observed that Ajmera, Medhekar, Jain, and Wong have contributed more in the field of Indian MT with a minimum of 2 articles per author and having a Total Citation (TC) of 5 per document. Figure 6 depicts the sub-themes that have arisen within the Indian MT discipline over time, as explored by authors. It is interesting to observe that the concept of medical travel gained some traction among the researchers in 2018 and also in the subsequent year 2019 - the year before the Covid-19 pandemic hit the world.

Table 2 | Most cited documents on Indian Medical Tourism

CITES	AUTHORS	TITLE	YEAR	JOURNAL	CITES PER YEAR
114	CROOKS, V., et al.	Promoting Medical Tourism To India Messages Images And The Marketing Of International Patient Travel	2011	Social Science & Medicine	10.36
111	PHUA, K., et al.	Health In Southeast Asia 1 Health And Healthcare Systems In Southeast Asia Diversity And Transitions	2011	Lancet	9.45
61	SMITH, R., et al.	Medical Tourism A Review Of The Literature And Analysis Of A Role For Bilateral Trade	2011	Health Policy	5.55
55	CROOKS, V.	Flyby Medical Care Conceptualizing The Global And Local Social Responsibilities Of Medical Tourists And Physician Voluntourists	2011	Globalization And Health	5.00
46	DEONANDAN, R., et al.	Ethical Concerns For Maternal Surrogacy And Reproductive Tourism	2012	Journal Of Medical Ethics	4.60
32	DEBATA, B., et al.	Evaluating Medical Tourism Enablers With Interpretive Structural Modeling	2013	Benchmarking - An International Journal	3.56
29	MAHAPATRA, S., et al.	An Integrated Approach For Service Quality Improvement In Medical Tourism An Indian Perspective	2012	International Journal Of Services And Operations Management	2.90
26	HAQUE, A.	Factors Affecting The Attractiveness Of Medical Tourism Destination An Empirical Study On India review Article	2014	Iranian Journal Of Public Health	3.25
20	DATTA, S.	Health Care As A Worldwide Concern Insights On The Italian And Indian Health Care Systems And PPPs From A VSA Perspective	2014	Euromed Journal Of Business	2.50
10	MEDHEKAR, A., et al.	Factors Influencing Outbound Medical Travel From The USA	2019	Tourism Review	3.33



Figure 3 | Author collaboration Network

Source: Scopus and Web of Science Databases; Graph generated from Bibliometrix R package tool

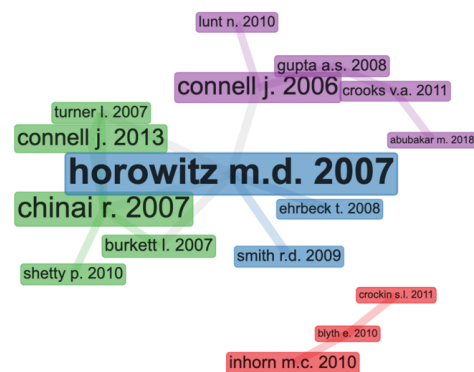


Figure 4 | Co-citation Network

Source: Scopus and Web of Science Databases; Graph generated from Bibliometrix R package tool

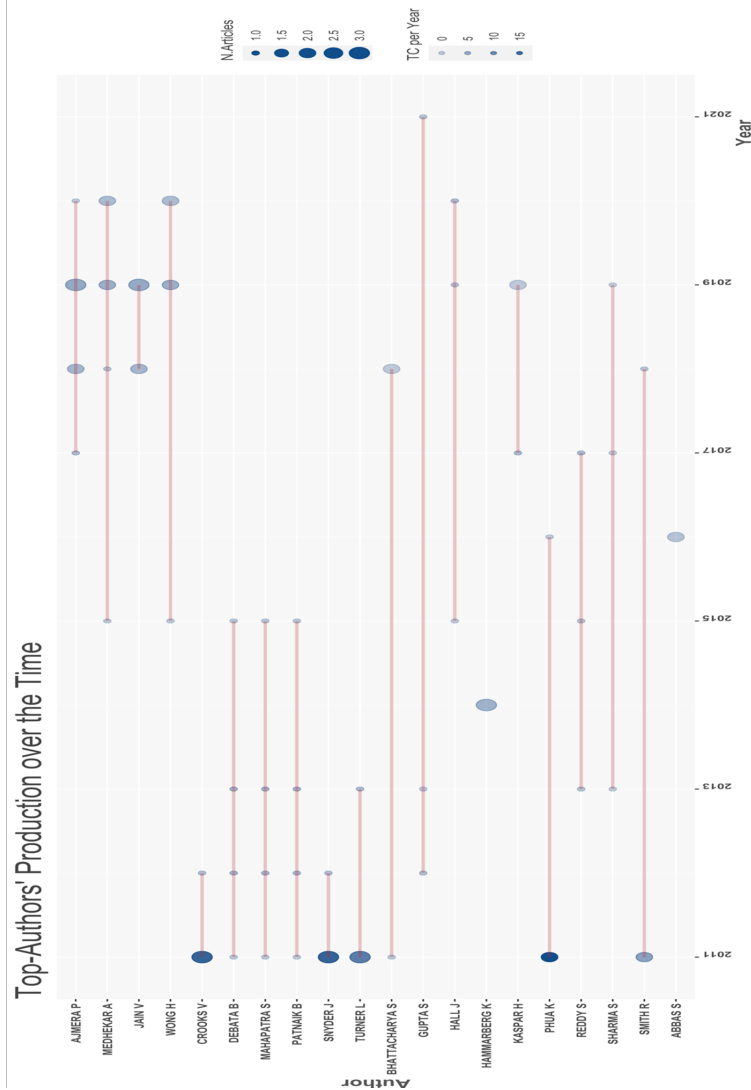


Figure 5 | Authors' production over time
Source: Graph generated from Bibliometrix R package tool

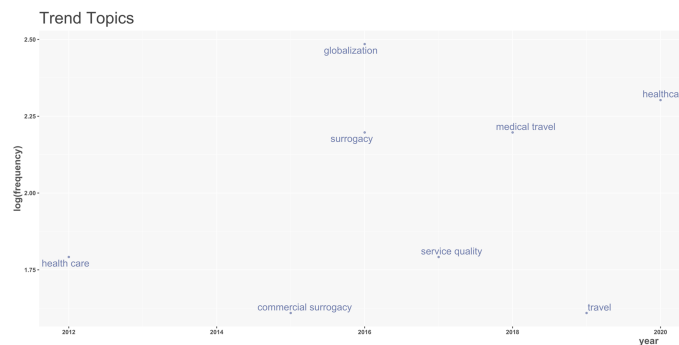


Figure 6 | Emerging Indian Medical Tourism sub-themes across the time period
Source: Graph generated from Bibliometrix R package tool

4.3. Journal characteristics

Table 3 lists the most influential journals in the medical tourism discipline. Other journal metrics include the total number of publications in MT discipline (TPP), the total number of citations in MT related documents (TCP), the total number of publications of the journal (TP), the total number of citations of the journal (TC), and ratios like TCP/TPP, TC/TP, and TPP/TP. It is interesting to observe that the average number of citations received by MT articles (TCP/TPP) is larger than the average number of citations compared to other articles in the journals (TC/TP), indicating that MT articles have a significant influence compared to non-MT articles. On the other hand, those journals with a low TPP/TP ratio suggest that they are not specific to the medical tourism discipline. Compared to the other journals in the analy-

sis, '*Globalization and Health*', '*Developing World Bioethics*', and '*Indian Journal of Medical Ethics*' perform better and rank the top 3 with most MT-related publications with a reasonable number of total citations (TC).

The bibliometric data help address the four research questions, which focus on scientific production and growth, influential authors in this field of research and their topic of study during the last decade, and the journals where these studies are published. The following three sections try to address the last two RQs, which are concerned with the international outlook of the Indian MT sector and the reasons that entice overseas patients to visit India for their healthcare needs. It also gives insight into the potential future developments that may affect the MT industry due to the Covid-19 epidemic.

Table 3 | Most influential journals in medical tourism

RANK	JOURNAL	TPP	TCP	TCP/TPP	TP	TC	TC/TP	TPP/TP
1	Globalization And Health	7	124	17.71	357	2149	6.0	0.0196
2	Developing World Bioethics	5	127	25.40	102	378	3.7	0.0490
3	Indian Journal Of Medical Ethics	4	36	9.00	211	179	0.8	0.0190
4	Asia Pacific Viewpoint	3	56	18.67	106	229	2.2	0.0283
5	Benchmarking - An International Journal	3	51	17.00	501	2783	5.6	0.0060
6	Iranian Journal Of Public Health	3	49	16.33	836	1427	1.7	0.0036
7	Tourism Review	3	19	6.33	264	1475	5.6	0.0114
8	Social Science & Medicine	2	131	65.50	2096	10795	5.2	0.0010
9	Lancet	1	104	104.00	1458	138385	94.9	0.0007
10	Health Policy	1	61	61.00	621	2544	4.1	0.0016
11	Journal Of Medical Ethics	1	46	46.00	545	2128	3.9	0.0018
12	International Journal Of Services And Operations Management	1	29	29.00	273	260	1.0	0.0037
13	Euromed Journal Of Business	1	20	20.00	68	326	4.8	0.0147

5. International outlook of India's medical tourism sector

In 2020, 1.83 lakh foreign tourists visited India for medical reasons, compared to 6.97 lakh in 2019, representing a 73.7 percent decrease in medical tourist visits due to the Covid-19 epidemic. Despite the pandemic's impact, inbound international patients represented 6.7 percent of all foreign tourist arrivals (FTAs). This percentage has remained consistent over the years, irrespective of the

overall FTAs (Ministry of Tourism, 2021a, 2021b). As of 2020, Bangladeshis constituted the largest FTAs, accounting for 54% of all incoming medical tourists to India. Furthermore, it is believed that roughly 14% of Bangladeshi nationals travel to India each year for medical treatment (Sarat, n.d.). This can be credited to the Government of India liberalizing the Revised Travel Agreement with Bangladesh between 2013 and 2018, which led to a 40 percent increase in year-on-year (y-o-y) tourist arrivals from Bangladesh (Brookings, n.d.).

Interestingly, an empirical study by Mahmud et al. (2021) about Bangladeshi medical tourists visiting India for their treatment reveal that Bangladeshi MTs do not only focus on the cost factor while availing treatment in Indian healthcare facilities. Apart from cost, the experience of service quality, medical tourism infrastructure, and overall experience of medical tourism directly impact the MT's satisfaction. Furthermore, destination appeal and culture have a significant moderating effect on the relationship between MTs satisfaction and destination loyalty. Following Bangladesh, Iraq, Afghanistan, Maldives, and Oman are the other South and Central Asian countries that account for a significant portion of medical FTAs, with 9.12%, 8.87%, 6.06%, and 2.37% of inbound medical tourists in India, respectively.

In their study titled 'Medical travelers' perspective on factors affecting medical tourism to India,' Medhekar and Wong (2020) state that medical treatment and tourism complement each other. The significant inflow of overseas patients in India can be attributable to various factors. Firstly, compared to many other countries, India's healthcare costs are relatively modest. For example, dental, eye, and cosmetic surgery costs are less than half of what they are in Western countries (Connell, 2006). Secondly, despite being a less developed country than most European and North American countries, India has a world-class private healthcare infrastructure capable of performing complex medical surgery and providing post-operative care (Beladi et al., 2019). This has been possible due to the Indian hospitals leveling up to the global standards in terms of striving to achieve the highest quality of healthcare and services, including hosting in-house Western-trained surgeons, High-quality nursing capability, equipping the hospitals with modern and internationally accepted healthcare and surgery equipment supplies, and lastly to get accredited to global quality accreditations like the Joint Commission International (JCI) and International Organization for Standardization

(ISO).

Several researchers (Beladi et al., 2019; Chaulagain et al., 2020; Gan & Frederick, 2015; Musa et al., 2012), have emphasized the linkage between accreditations and the quality of medical services offered by a Foreign Healthcare Provider (FHP). Furthermore, it has been noticed that US patients seeking medical treatments outside of the United States are concerned about the quality of care provided by hospitals in developing countries; hence they rely on JCI accreditations to determine the quality of the destination FHP (University & Hopkins, 2019). Moreover, international patients prefer to seek complex medical services in India, such as open-heart surgery, joint replacement, cancer treatment, organ transplantation, or stem cell therapy, because there is little to no waiting time for international patients – a major disadvantage for international patients seeking surgical procedures in their home countries (Cohen, 2010; Connell, 2006; Gopal, 2008; Hallem & Barth, 2011; Lee & Fernando, 2015; Mun et al., 2015; Musa et al., 2012).

Thirdly, because India has such a huge English-speaking population, native English-speaking people feel more at ease while interacting with healthcare professionals and expressing their requirements (Badwe et al., 2012; Dangor et al., 2015; Kim et al., 2020). The fourth factor is that alternative medicine such as Ayurveda, Yoga, Unani, Siddha, and Homeopathy (AYUSH) are being considered by foreign medical tourists as an alternative to allopathy or general medicine and healthcare treatments, as India provides holistic medical and welfare services. (Dangor et al., 2015; Mun et al., 2015; Sultana et al., 2014; Vitthal et al., 2015). In addition, the Ministry of Tourism launched the Incredible India Tourist Facilitator (IITF) Certification Program, a digital initiative that uses an online learning platform to develop a pool of well-trained and professional tourist facilitators, including MTFs, to aid in the growth of the Indian healthcare sector. Interestingly, the preference of

Halal food and Islamic healthcare practices carried out by the hospitals in India is also one of the most significant drivers of medical FTAs among the Islamic, Arab and African countries having a predominant majority of Muslim residents (Zailani et al., 2016). And lastly, several overseas medical tourists take advantage of India's broad tourism options by combining medical tourism and leisure tourism in their travel schedules, with the latter being mostly for convalescence as a result of the post-operative therapy (Gupta & Das, 2012; IBEF, 2020; Ministry of Tourism, 2019; Singh, 2013).

However, due to the Covid-19 pandemic, the change to non-recovery tourism will be noted more, as potential tourists are still less ready for travel and avoid visiting sites that can jeopardize health during such a pandemic (Zhang et al., 2020). To prevent the virus from spreading further, government officials would limit the length of stay for overseas patients, particularly those who had recently undergone surgery. Furthermore, conforming to the necessity for post-pandemic quarantine on arrival – as medical tourists with convalescence intent must self-quarantine for a certain number of days as stated by the destination regulatory authorities – would be a substantial obstacle to travel for foreign tourists. Medical tourists would like to return to their home nations as soon as their medical treatment is completed in such circumstances (UNCTAD, n.d.). Furthermore, travel insurance will become more significant in the future as foreign visitors become more aware of the insured aspects covered throughout their trip. However, rising travel insurance rates and lesser coverage will cause foreign visitors to abandon their plans to travel (Tan & Caponecchia, 2020).

6. Analysis of International MTs visiting healthcare facilities in Hyderabad, India

An attempt has been made in this study to understand the profiles of international medical tourists visiting the leading private hospitals in Hyderabad. The city of Hyderabad was chosen based on two criteria. The Islamic culture of the city naturally draws a high number of Muslim overseas patients from the Middle East, East Africa, and Bangladesh. Second, compared to other metro cities such as New Delhi, Mumbai, and Chennai, healthcare expenditures in Hyderabad are significantly lower, which is another draw for international medical tourists (Today, n.d.). Apollo Health City and Continental Hospitals were chosen for the study because they are JCI-accredited hospitals in Hyderabad, while Yashoda Hospitals was selected due to the availability of data in the form of international patients' video testimonials, which provided us with a detailed background on why they came to the hospital. Before the Covid-19 epidemic, all three hospitals had an average annual footfall of over 5000 overseas patients. The testimonies can be seen on the websites of all three institutions under the 'International Patients' section. Figure 7 shows the nationalities of international patients, and Figure 8 illustrates the therapy options availed by the patients based on their gender. In Figure 8, it is observed that male foreign patients seek more heart and spine-related treatments in Hyderabad hospitals. In contrast, female international patients seek more cancer and gynecology-related medical services.

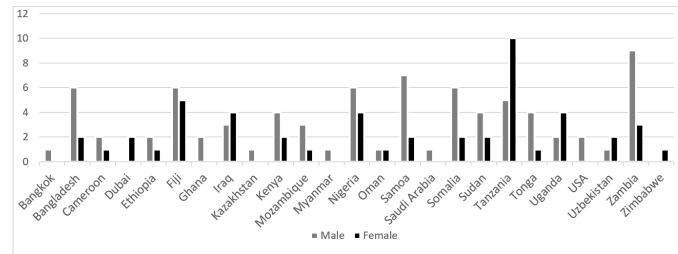


Figure 7 | Inbound international medical Tourists' nationalities visiting the hospitals in Hyderabad
Source: Apollo Health City, Continental Hospitals, and Yashoda Hospital, Hyderabad – international patients' data from website

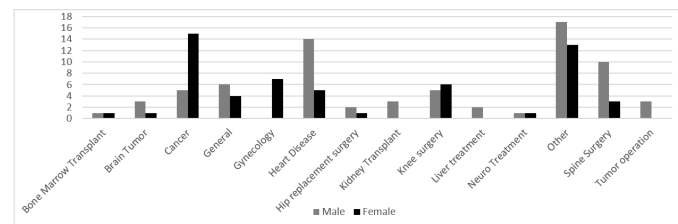


Figure 8 | Type of treatment available by International Medical Tourists from the hospitals in Hyderabad
Source: Apollo Health City, Continental Hospitals, and Yashoda Hospital, Hyderabad – international patients' data from website.
Apollo Hospitals: <https://www.youtube.com/playlist?list=PLDv11zHNxE9L4cKQ5Afun7ZNiPML1AK4u> Continental Hospitals: <https://continentalhospitals.com/testimonials/>

7. Future developments in the MT sector: A Post Covid-19 Outlook and Discussion

As a result of the Covid-19 pandemic, medical tourism is undoubtedly expected to change. There may be an influx of people seeking treatment for chronic illnesses, which the virus may cause in some situations, or others seeking general medical care for non-Covid related problems. Following the Covid-19 outbreak, the following trends in the medical tourism industry are envisaged. (IndiaMedToday, n.d.).

[1] Increasing demand for sophisticated treatment: Once travel restrictions are lifted, the number of domestic and international patients visiting hospitals are projected to increase. The demand for sophisticated treatment is predicted to rise due to chronic illnesses caused by lifestyle disorders due to the lockdown.

[2] More emphasis on sanitation and tailored treatment: International patients will favor countries that adhere to strict social

distancing standards, preferring personalized treatment in a less congested setting and infrastructure. The demand for single occupancy rooms will likely rise.

[3] New Visa Policy: Following the resumption of international travel, most countries – particularly those with high global MT demand and footfalls – are expected to revise their visa policies. During the immigration process, international travelers will be required to produce proof of vaccination certificates or a valid and negative RT-PCR test (or Covid-19 test) report.

[4] Vaccine or immunity passports: Vaccine passports are essentially immunity certificates or proofs of vaccination that include information about the holder's previous vaccination records, including the covid-19 immunization. Vaccine passports are expected to become an essential part of pre-travel risk assessments for international travelers. Because of the mutative nature of the Covid-19 virus, health experts urge that the vaccine

passport document include the variant type exposed (if any) and the brand of vaccine administered to the person. The benefits of vaccine passports, as observed by Schlagenhauf et al.(2021), include – easier travel facilitation with lesser restrictions no quarantine mandate for immunized travelers; however, the basic covid-19 safety norms such as mask-wearing and social distancing have to be followed, irrespective of whether inoculated or not

[5] Fly Out Doctor Programs to regain importance: Fly Out Doctor Programs may resurface, causing a reversal in healthcare services due to the pandemic. In a journal article (Youngman, n.d.) claims that governments will be hesitant to invite visitors because of fear and that certain countries will no longer wish to attract medical tourists after the pandemic has passed. The focus will be more on low-impact but high-spend visitors to the state. Fly Out Doctor Programs were once thought to be a remedial measure for the most interior and rural parts of the country without health care services while seeming unrealistic for urban conditions. Suppose MTs with critical illnesses are not encouraged to travel to avoid additional risk or complications. In that case, the host country's or healthcare facility's expert doctors will fly to the patient's location for treatment.

[6] Changes in the medical insurance policies: The consumer demand for medical insurance is expected to increase due to the pandemic. On the supply side, health care insurance providers in nations such as India cooperate with foreign insurance firms to help overseas MTs use their home-owned insurance in India for medical treatment in Indian facilities. To enhance the tourist sector, the Government of India plans to give

special Covid-19 insurance covers to international patients at affordable rates (Livemint, n.d.; Standard, n.d.).

[7] Rise in telemedicine services: The expansion of telemedicine and consultation services will be the next components of the healthcare delivery revolution as a result of the pandemic. Telemedicine is defined as the delivery of healthcare and the transmission of health-care-related information over long distances (Craig & Patterson, 2005; Rashid, 1995; Wootton, 2001). It's an umbrella word for an integrated healthcare delivery system that uses telecommunications and ICT to replace face-to-face interaction between healthcare practitioners and patients. Chellaiyan et al. (2019) highlighted the strengths and potential of telemedicine to improve overall healthcare in India while also expressing their disappointment that telemedicine has not been widely adopted by both the general public and professionals due to a lack of awareness and skepticism to adopt new technology. However, with the outbreak of Covid-19, the situation is likely to change. Raj Westwood (2021) asserts that a hybrid telemedicine model will likely be the norm in the future. It has many advantages, including pre-screening through video consultation from the patient's home environment and limiting risk to others, saving travel time and cost. Post-initial screening by a General Physician would further determine the need for additional investigations if necessary. Overall, the entire process would save cost and limit the exposure and risk to both patients and healthcare professionals.

Nevertheless, the above trends are expected to 'reconstruct tourism as the new normal' in the medical tourism sector due to the pandemic (Sengel, 2021).

8. Conclusion, Limitations & Future scope of research in the Indian MT sector

This research aimed to assess the number of academic publications in Indian medical tourism research from 2011 to 2021. The Bibliometrix - R tool was used to undertake a bibliometric analysis of scientific metadata sourced from two widely used academic abstract citation databases and websites, namely Scopus and Web of Science (WoS). The analysis is carried out at four broad bibliometric indicator levels: total scientific production, important authors in this field of study, MT sub-topics investigated by researchers over the last decade, and sources or journals that actively publish MT-related publications.

The scientific production analysis revealed a 6.1 percent yearly increase in research output. The Indian medical tourism (MT) area of research has gained pace over the years, with more than 2437 references referenced across 250 peer-reviewed publications in 196 journals and about 747 authors actively contributing to this field of study. Furthermore, a paper cited 10 times on average underlines the active engagement seen in this study field worldwide. Similarly, the top contributing authors were identified as 'Crooks, et al., Phuka, et al., Smith, et al., Ajmera, et al., Medhekar, et al., Jain, et al., and Wong, et al.'. The authors' collaboration and co-citation networks are visual representations of the authors' collective contribution to the Indian medical tourism sector. According to the sources, the top three journals that publish MT-related articles are 'Globalization and Health', 'Developing World Bioethics', and 'Indian Journal of Medical Ethics'. Among the three, the 'Globalization and Health' magazine is the oldest and has the most publications on the Indian MT sector. It has a total of 2149 citations and an h-index of 53. After concluding the bibliometric study with thematic trend analysis to analyze the evolution of

sub-themes in the Indian MT field, the analysis identified several keywords or issues linked to medical tourism that scholars have explored over the last decade. This bibliometric study gives researchers a head start on those who want to learn more and contribute, particularly in Indian medical tourism.

In addition to the bibliometric review approach used to answer the four research questions, this study utilizes secondary sources to learn about the factors that draw inbound medical tourists to India for their healthcare requirements. Low healthcare prices, world-class western-trained surgeons, and a high-quality private healthcare infrastructure capable of conducting complex operations are factors that draw international patients to India. Furthermore, medical travelers evaluate India's leisure tourism accessibility for post-operative treatment while organizing their medical vacation to the country. Aside from the cost, the MTs' overall satisfaction is strongly influenced by their experiences with service quality, medical tourism infrastructure, and medical tourism costs. The report also discusses upcoming trends such as telemedicine, fly-out-doctor programs, vaccination passports, Visa policy changes, and medical insurance policies, which are expected to become the new reality due to the Covid-19 epidemic.

In terms of limitations, this study primarily looks at existing literature to learn more about the Indian MT industry from the perspective of an overseas medical tourist. Contrastingly, supply-side research involving primary inputs from healthcare facilities, physicians, and other professionals, and gathering their views on the obstacles they experience in catering to overseas MTs during the pandemic, and finding strategies to service them and minimize the barriers they confront (geographical, financial, and emotional) would be of tremendous benefit to the academic community and healthcare policymakers.

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