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Invited Article

Health Tourism Research: A Scientometric Assessment of Global Publications Output during 2007-16

P. Visakhi[1], B M. Gupta[2], Ritu Gupta[3], Ashok Kumar Garg[4]

ABSTRACT

The paper examines 1422 global publications on health tourism research, as covered in Scopus database during 2007-16, experiencing an annual average growth rate of 7.26% and qualitative impact averaged to 8.78 citations per paper. The top 10 most productive countries individually contributed global share from 2.91% to 22.41%, with largest global publication share coming from USA (24.12%), followed by U.K. (12.59%), Canada and Australia (7.45% and 7.10%), India and Germany (3.45% and 3.38%) etc. Together, the 10 most productive countries accounted for 70.61% share of global publication output during 2007-16. Six of top 10 countries scored relative citation index above the average (1.46): Italy (2.97), Netherlands (1.99), Germany (1.92), Canada (1.66) and France (1.59) during 2007-16. Medicine, among subjects, contributed the largest publication share (66.67%),%), followed by social sciences (20.32%), business, accounting & management (12.38%), environment science (8.65%), biochemistry, genetics & molecular biology (5.70%), nursing (5.49%), arts & humanities (4.57%) and economics, econometrics & finance (3.66%) during 2007-16. The top 15 most productive organizations and authors together contributed 17.02% and 14.77% respectively as their share of global publication output and 27.66% and 32.41% respectively as their share of global citation output during 2007-16. Among the total journal output of 1317 papers, the top 10 journals contributed 17.16% share to the global journal output during 2007-16. Of the total global health tourism research output, the top 19 highly cited publications registered citations from 82 to 178 and they together received 2224 citations, with 117.05 citations per paper. These 19 highly cited papers involved the participation of 26 authors and 27 organizations. Among leading countries contributing to high cited research, the largest number of papers (7) came from USA, followed by U.K (5 papers), Italy (4 papers), Belgium, Netherlands and Canada (3 papers each), Denmark, Australia and Germany (2 papers each), Switzerland, France, New Zealand, Spain, Iran, Thailand, Laos, Cambodia, Philippines, Indonesia, Vietnam, Israel and Chile (1 paper each). The 19 highly cited papers involved the participation of 95 authors and 78 organizations. These 19 highly cited papers were published in 16 journals; of which of which 2 papers were published in Emerging Infectious Diseases and Human Reproduction and 1 paper each in other journals.

Key words: Health tourism, Global publication, Bibliometrics, Scientometric.

P. Visakhi[1], B. M. Gupta[2], Ritu Gupta[3], Ashok Kumar Garg[4]

[1]Indian Institute of Science Education and Research (IISER), Mohali - 140 306, Punjab, INDIA.
[2]Formely CSIR –NISTADS, New Delhi (Present Address: 1173 Sector 15, Panchkula 134 113, Haryana, INDIA).
[3]Formerly with Sri Venkateshwara University, Tirupathi (Present Address: 1K/A Arjun Nagar, Safdarjang Enclave, New Delhi, INDIA).
[4]Maharishi Markandeshwar University, Mullana, Ambala 133207, Haryana, INDIA.

Correspondence
B. M. Gupta,
Formely CSIR –NISTADS, New Delhi (Present Address: 1173 Sector 15, Panchkula 134 113, Haryana, INDIA.)
Mobile no: 9888378275
Email: bmgupta1@gmail.com

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INTRODUCTION

Medical tourism which is alternatively called "health tourism" or "wellness tourism" is an amalgamation of two distinct service sector 'healthcare' and 'tourism' with niche service features.[1] Medical tourism can be defined as the process of traveling outside the country of residence for the purpose of receiving medical care. Growth in the popularity of medical tourism has captured the attention of policy-makers, researchers and the media. Originally, the term referred to the travel of patients from less-developed countries to developed nations in pursuit of the treatments not available in their homeland. Today we are experiencing both qualitative and quantitative shifts in patient mobility, as people travel from richer to less-developed countries in order to access health services. Such shift is mostly driven by the relative low-cost of treatments in less developed nations, the availability of inexpensive flights and increased marketing and online consumer information about the availability of medical services.[2]

The medical tourism potential of different countries will depend upon diversity of tourism destinations and experiences, presence of world-class hospitals, vast supply of skilled medical professionals of international reputation, quality service at affordable cost, strong presence in advanced healthcare, high success rate in treatment, less waiting time in the hospitals. Sustained growth of corporate hospitals and hospital chains across the country and government patronage and promotion of medical tourism as part of public policy are other factors responsible for growth of medical tourism.[1]

Medical tourism industry has become one of the fastest growing service sectors of 21st century and repre-

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sents a worldwide, multibillion-dollar phenomenon that is expected to grow considerably in the next decade. In 2015, medical tourism generated between U.S. $ 60-$ 70 billion and it is expected to double in next 5 years. Over the last few years, medical tourism has gained popularity among highly industrialized countries. The number of medical tourists has increased from about half a million in 2007 to an expected estimate of 1.25 million in 2014 in USA. The OECD estimates that there are up to 50 million medical tourists worldwide annually. These figures indicate a significant growth in the medical tourism industry, with estimates ranging from $50 billion to $65 billion dollars in 2014. The industry is expected experience a continued growth of approximately 20%. India ranks second as medical tourism destination in the world after Thailand and India hosts about 150000 medical tourists annually, and this number is expected to grow by 15% every year.[3]

Categories of different treatments and their availability also represent an important factor in decision to engage in medical tourism. The most common types of procedures that patients pursue during medical tourism trips are elective cosmetic surgery, dentistry, organ transplantation, cardiac surgery and orthopedic surgery. However, a wide variety of services can be obtained through medical tourism, ranging from various essential treatments to different kinds of traditional and alternative treatments. Reproductive tourism and reproductive outsourcing are growing in popularity, which is the practice of traveling abroad to engage in surrogate pregnancy, *in vitro* fertilization and other assisted reproductive technology methods.[2]

Literature Review

Only few studies were conducted in the past on quantitative analysis of medical tourism literature. Among such studies Chuanga, Liub, Luc and Leec[4] used the main path analysis, a unique quantitative and citation-based approach, to analyze the significant development trajectories, important literature, and recent active research areas in medical tourism. The authors indicate there are two distinctive development paths: one path focuses more on the evolution of medical tourism, the motivation factors, marketing strategies, and economic analysis; the other path emphasizes organ transplant and related issues. These two paths eventually merge to a common node in the citation network, which foretells transplantation to beautification as the future research direction trend. Temizkan, Çicek and Özdemir[5] studied 91 in Turkish academic journals and 155 articles in Web of Science database and examined their bibliometrics characteristics. According to authors, academic studies on the subject of health tourism concentrated on especially in the last 7-8 years and most publications centered in 2011 (16.3%). 57.7% of articles covered in the study used the empirical approach and 42.3% of articles were conceptual papers. Articles mostly published in tourism field (53), geography (44), and medicine (32) respectively. Studies in Turkish mainly centered on geography department under the sub-field of thermal, while articles published in English are centered on field of medicine under the sub-field of medical treatment. The studied articles showed that most of the articles (% 61) tend to have multiple authors. Using full articles from other databases, Institute for Scientific Information (ISI), Science Direct, Emerald, Oxford, Magiran, and Scientific Information Database (SID), Masoud, Alireza, Mahmoud and Zahara[6] examined systematically published articles about medical tourism in the interval 2000-2011 Articles were obtained using descriptive statistics and content analysis categories were analyzed. The main topics of study included the definition of medical tourism, medical tourists' motivation and development of medical tourism, ethical issues in medical tourism, and impact on health and medical tourism marketing.

Objectives

The main objectives of this study are to study the performance of global medical tourism research 2007-16, based on publications output covered in Scopus database. In particular, the study focuses on the following objectives: (i) To study the growth of world research output in health tourism research and its citation impact; (ii) To study the international collaboration share of top 10 most productive countries; (iii) To study the global research output by broad subject areas and the dynamics of its growth and decline; (iv) To study the trends by identifying significant keywords; (v) To study the publication productivity and citation impact of top 15 most productive organizations and authors; (vi) To study the modes of communication in research and (vii) to study the characteristics of top highly cited papers.

METHODOLOGY

The study retrieved and downloaded 10-year publication data of the world output in health tourism from the Scopus database (http://www.scopus.com) covering the period 2007-16. Keywords such as "health tourism" were used in the "keyword tag" and " title tag" in the search string and restricted the search to the period '2007-16' within "date range tag". Finally this search string was applied for searching global publication data on health tourism. The search string was subsequently refined by "subject area tag", "country tag", "source title tag", "journal title name" and "affiliation tag", to get data/information on the distribution of publications output by subject, collaborating countries, author-wise, organization-wise and journal-wise, etc. For citation data, citations to publications were also collected from date of publication till February 2017.

(KEY(''Health tourism") OR TITLE(''Health tourism")) AND PUBYEAR > 2006 AND PUBYEAR < 2017

Analysis

The total research output of the world in field of health tourism cumulated to 1422 publications in 10 years during 2007-16, with annual output increased from 68 in the year 2007 to 89 publications in the year 2016, registering 7.26% growth per annum. The cumulative world output in health tourism in increased in from 592 to 830 publications from 2007-11 to 2012-16, registering 40.20% growth rate. Of the total global publications output, 59.21% (842) was published as articles, 11.67% (166) as reviews, 6.47% (92) as notes, 6.19% (88) as editorials, 5.84% (83) as conference papers, 4.43% (63) as letters, 2.81% (40) as book chapters, 1.97% (28) as short surveys, 0.84% (12) as articles in press and 0.42% (6) as books. The citation impact of global publications on health tourism research averaged to 8.78 citations per publication (CPP) during 2007-16; five-yearly impact averaged to 15.32 CPP for the period 2007-11 which declined to 8.78 CPP in the succeeding five-year 2012-16 (Table 1).

Top 10 Most Productive Countries in Health Tourism

The global research output in the field of health tourism research originated from as many as 90 countries in the world during 2007-16. Top 10 most productive countries in health tourism research had contributed 36 to 343 publications each during 2007-16 (Table 2). Of the 90 countries, 51 contributed 1-10 papers each, 25 countries 11-50 papers each and 4 countries 101-343 papers each. Top 10 most productive countries in health tourism research accounted for 68.92% global publication share during 2007-16. Their five-yearly output accounted for 70.61% global publication share during 2007-11 which declined to 67.71% during succeeding 5-year period 2012-16. Each of top 10 countries accounted for 2.53% to 24.12% global publication share during 2007-16, with USA accounting for the highest publication share (24.12%), followed by U.K (12.59% share), Canada and Australia (7.45% and 7.10%), India and Germany (3.45% and 3.38%), Italy, Spain, France and Netherlands (from 2.53% to 2.95%) during 2007-16. The global publication share in five years increased by 1.44% in Netherlands, followed by 1.06% in Spain, 1.02% in U.K., 0.91% in Canada and 0.29% in France, as against decrease

by 3.82% in USA, 2.59% in Australia, 0.58% in Germany, 0.44% in Italy and 0.17% in India from 2007-11 to 2012-16. Six of top 10 countries scored relative citation index above the average (1.46): Italy (2.97), Netherlands (1.99), Germany (1.92), Canada (1.66) and France (1.59) during 2007-16.

Subject-Wise Distribution of Research Output

The global health tourisms research output published during 2007-16 is distributed across eight sub-fields (as identified in Scopus database classification), with medicine accounting for the highest publications share (66.67%), followed by social sciences (20.32%), business, accounting & management (12.38%), environment science (8.65%), biochemistry, genetics & molecular biology (5.70%), nursing (5.49%), arts & humanities (4.57%) and economics, econometrics & finance (3.66%) during 2007-16.

The activity index, which computes change in research activity in a discipline over time 2007-11 to 2012-16 (world average activity index of a given subject is taken as 100), witnessed increase in social sciences (from 94.75 to 103.74), business, accounting & management (from 84.62 to 110.97), arts & humanities (from 66.52 to 123.88) and economics, econometrics & finance (from 69.29 to 121.90), as against decline of research activity in medicine (from 103.63 to 97.41), environment science (from 109.36 to 93.32), biochemistry, genetics & molecular biology (from 118.62 to 86.72) and nursing (from 132.42 to 76.88) from 2007-11 to 2012-16. Among 8 subjects, biochemistry, genetics & molecular biology scored the highest citation impact per paper of 14.00, followed by nursing (9.73), medicine (9.49), social sciences (9.18), environment science (8.89), arts & humanities (7.78), business, accounting & management (5.80) and economics, econometrics & finance (3.42) during 2007-16.

Table 1: World Output in Health Tourisms Research, 2007-16.

Publication Period	World		
	TP	TC	CPP
2007	68	1638	24.09
2008	84	1048	12.48
2009	109	1203	11.04
2010	151	2295	15.20
2011	180	2883	16.02
2012	158	1144	7.24
2013	189	1065	5.63
2014	212	737	3.48
2015	182	422	2.32
2016	89	55	0.62
2007-11	592	9067	15.32
2012-16	830	3423	4.12
2007-16	1422	12490	8.78

TP=Total Papers; TC=Total Citations; CPP=Citations Per Paper.

Table 2: Global Publication Share of Top 10 Most Productive Countries in Medical Tourism during 2007-16.

S.No	Name of the Country	Number of Papers (TP)			Share of Papers			TC	CPP	RCI
		2007-11	2012-16	2007-16	2007-11	2012-16	2007-16			
1	USA	156	187	343	26.35	22.53	24.12	4179	12.18	1.39
2	U.K.	71	108	179	11.99	13.01	12.59	2350	13.13	1.50
3	Canada	41	65	106	6.93	7.83	7.45	1543	14.56	1.66
4	Australia	51	50	101	8.61	6.02	7.10	1258	12.46	1.42
5	India	21	28	49	3.55	3.37	3.45	270	5.51	0.63
6	Germany	22	26	48	3.72	3.13	3.38	809	16.85	1.92
7	Italy	19	23	42	3.21	2.77	2.95	1094	26.05	2.97
8	Spain	13	27	40	2.20	3.25	2.81	483	12.08	1.38
9	France	14	22	36	2.36	2.65	2.53	502	13.94	1.59
10	Netherlands	10	26	36	1.69	3.13	2.53	628	17.44	1.99
	Total	418	562	980	70.61	67.71	68.92	12488	12.74	1.46
	World	592	830	1422	100.00	100.00	100.00	12490	8.78	
	Share of 10 Countries in World Total	70.61	67.71	68.92				99.98		

TP=Total Papers; TC=Total Citations; CPP=Citations Per Paper; RCI=Relative Citation Index.

Profile of Top 15 Most Productive Global Organizations

The productivity of 15 most productive global organizations in global medical tourism research varied from 11 to 36 publications and together they contributed 17.02% (242) publication share and 27.66% (3455) citation share to its cumulative publications output during 2007-16. The scientometric profile of these 15 organizations is presented in Table 4. Three of these organizations registered publications output greater than the group average of 16.13: Simon Fraser University, Canada (36 papers), London School of Hygiene & Tropical Medicine, U.K (27 papers) and James Cook University, Australia (25 papers) during 2007-16. Eight organizations registered citation impact above the group average of 14.28 citations per publication during 2007-16: Maastricht University, Netherlands (24.92), University of Queensland, Australia (22.08), Monash University, Australia (20.17), University of York, U.K.(15.40), Simon Fraser University, Canada (15.39), University of Cambridge, U.K. (15.0), University College of London, U.K. (14.87) and University of Ottawa, Canada (14.67) during 2007-16. Five organizations registered h-index above the group average of 8.4: Massachusetts General Hospital, USA (16), Simon raser University, Canada (13), University College of London, U.K. and London School of Hygiene & Tropical Medicine, U.K. (10 each) and James Cook University, Australia (9) during 2007-16. Eight organizations contributed international collaborative publications share above the group average of 35.95%: Maastricht University, Netherlands (66.67%), University of Cambridge, U.K (54.55%), University of Alberta,

Table 3: Subject-Wise Breakup of Global Publications in Health Tourism Research during 2007-16.

S.No	Subject*	Number of Papers (TP)			Activity Index		TC	CPP	%TP
	2007-11	2012-16	2007-16	2007-11	2012-16	2007-16	2007-16	2007-16	
1	Medicine	409	539	948	103.63	97.41	8997	9.49	66.67
2	Social Sciences	114	175	289	94.75	103.74	2653	9.18	20.32
3	Business, Accounting & Management	62	114	176	84.62	110.97	1021	5.80	12.38
4	Environment Science	56	67	123	109.36	93.32	1093	8.89	8.65
5	Biochemistry, Genetics & Molecular Biology	40	41	81	118.62	86.72	1134	14.00	5.70
6	Nursing	43	35	78	132.42	76.88	759	9.73	5.49
7	Arts & Humanities	18	47	65	66.52	123.88	506	7.78	4.57
8	Economics, Econometrics & Finance	15	37	52	69.29	121.90	178	3.42	3.66
	World Output	592	830	1422					

*There is overlapping of literature covered under various subjects TP=Total Papers; TC=Total Citations; CPP=Citations Per Paper.

Table 4: Scientometric Profile of Top 15 Most Productive Organizations in Global Health Tourism Research during 2007-16 .

S.No	Name of the Organization	TP	TC	CPP	HI	ICP	%ICP	RCI
1	Simon Fraser University, Canada	36	554	15.39	13	8	22.22	1.75
2	London School of Hygiene & Tropical Medicine, U.K.	27	304	11.26	10	10	37.04	1.28
3	James Cook University, Australia	25	202	8.08	9	7	28.00	0.92
4	Massachusetts General Hospital, USA	16	214	13.38	16	7	43.75	1.52
5	University of York, U.K.	15	231	15.40	8	4	26.67	1.75
6	University College of London, U.K.	15	223	14.87	10	6	40.00	1.69
7	University of Alberta, Canada	14	177	12.64	7	7	50.00	1.44
8	University of Sydney, Australia	13	120	9.23	6	6	46.15	1.05
9	Maastricht University, Netherlands	12	299	24.92	8	8	66.67	2.84
10	Monash University, Australia	12	242	20.17	7	4	33.33	2.30
11	University of Ottawa, Canada	12	176	14.67	5	2	16.67	1.67
12	University of Queensland, Australia	12	265	22.08	8	4	33.33	2.52
13	University of British Columbia, Canada	11	153	13.91	7	5	45.45	1.58
14	University of Melbourne, Australia	11	130	11.82	7	3	27.27	1.35
15	University of Cambridge, U.K.	11	165	15.00	5	6	54.55	1.71
	Total of 15 organizations	242	3455	14.28	8.4	87	35.95	1.63
	Total of World	1422	12490	8.78				
	Share of top 15 organizations in World total output	17.02	27.66					

TP=Total Papers; TC=Total Citations; CPP=Citations Per Paper; HI=h-index; ICP=International Collaborative Papers; RCI=Relative Citation Index.

Canada (50.0%), University of Sydney, Australia (46.15%), University of British Columbia, Canada (45.45%), Massachusetts General Hospital, USA (43.75%), University College of London, U.K (40.0%) and London School of Hygiene & Tropical Medicine, U.K (37.04%) during 2007-16. Eight organizations registered the relative citation index above the group average (1.63) of all organizations: Maastricht University, Netherlands (2.84), University of Queensland, Australia (2.52), Monash University, Australia (2.30), University of York, U.K 15 (1.75), Simon Fraser University, Canada (1.75), University of Cambridge, U.K. (1.71), University College of London, U.K (1.69) and University of Ottawa, Canada (1.67) during 2007-16.

Profile of Top 15 Most Productive Authors

The research productivity of top 15 most productive authors in the field of global health tourism research varied from 7 to 35 publications. Together they contributed 14.77% (210) global publication share and 32.41% (4048) citation share during 2007-16. The scientometric profile of these 15 authors is presented in Table 5. Four authors registered publications output above the group average of 14: V.A. Crooks (35 papers), J. Snyder (33 papers), R. Johnston (24 papers) and L. Turner (15 papers) during 2007-16. Five authors registered citation impact above the group average of 19.28 citations per publication: K. Adams (48.5), G. Pennings (39.25), P. Kingsbury (39.13), M.C. Inhorn (34.10) and L. Turner (19.87) during 2007-16. Five authors registered h-index above the group average of 8 of all authors: J. Snyder and V.A. Crooks (13 each), R. Johnston (10), M.C. Inhorn and L. Turner (9 each) during 2007-16. Six authors contributed international collaborative publications share above the group average of 26.67% of all authors: M. Ormond (57.14%), F.L. Delmonico (50.0%), L. Turner (46.67%), M.C. Inhorn (40.0%), K. Adams (37.5%) and R. Smith (36.36%) during 2007-16. Five authors registered the relative citation index above the group average (2.20) of all authors: K. Adams (5.52), G. Pennings (4.47), P. Kingsbury (4.46), M.C. Inhorn (3.88) and L. Turner (2.26) during 2007-16.

Medium of Communication

Of the total world output in health tourisms research, 92.62% (1317) appeared in journals. The top 10 most productive journals accounted for 12 to 42 papers each in health tourism research and together accounted

Table 5: Scientometric Profile of Top 15 Most Productive Authors in Global Health Tourism Research during 2007-16.

S.No	Name of the Author	Affiliation of the Author	TP	TC	CPP	HI	ICP	%ICP	RCI
1	V.A. Crooks	Simon Fraser University, Canada	35	554	15.83	13	8	22.86	1.80
2	J. Snyder	Simon Fraser University, Canada	33	546	16.55	13	6	18.18	1.88
3	R. Johnston	Simon Fraser University, Canada	24	452	18.83	10	5	20.83	2.15
4	L. Turner	University of Minnesota, USA	15	298	19.87	9	7	46.67	2.26
5	N.Lunt	University of York, U.K.	14	224	16.00	8	3	21.43	1.82
6	F.L.Delmonico	Harvard Medical School, USA	12	193	16.08	6	6	50.00	1.83
7	J. Hanefeld	London School of Hygiene & Tropical Medicine, U.K.	11	84	7.64	6	2	18.18	0.87
8	R. Smith	London School of Hygiene & Tropical Medicine, U.K.	11	137	12.45	8	4	36.36	1.42
9	M.C. Inhorn	Yale University, USA	10	341	34.10	9	4	40.00	3.88
10	P. Kingsbury	Simon Fraser University, Canada	8	313	39.13	8	1	12.50	4.46
11	G.Pennings	Ghent University, Belgium	8	314	39.25	8	1	12.50	4.47
12	K. Adams	Simon Fraser University, Canada	8	388	48.50	6	3	37.50	5.52
13	I. Bauer	James Cook University, Australia	7	88	12.57	7	1	14.29	1.43
14	D.Horsfall	University of York, U.K.	7	55	7.86	4	1	14.29	0.89
15	M.Ormond	Wageringen University, Netherlands	7	61	8.71	5	4	57.14	0.99
		Total of 15 authors	210	4048	19.28	8	56	26.67	2.20
		Total of World	1422	12490	8.78				
		Share of top 15 authors in World total output	14.77	32.41					

TP=Total Papers; TC=Total Citations; CPP=Citations Per Paper; HI=h-index; ICP=International Collaborative Papers; RCI=Relative Citation Index.

Table 6: Top 10 Most Productive Journals in Global Health Tourism Research during 2007-16

S.No	Name of the Journal	Number of Papers		
		2007-11	2012-16	2007-16
1	Journal of Travel Medicine	21	21	42
2	Travel Medicine & Infectious Diseases	16	15	31
3	Reproductive Medicine Online	22	5	27
4	Social Science & Medicine	3	22	25
5	Lancet	9	15	24
6	Tourism Management	7	11	18
7	Transplantation	8	10	18
8	European Journal of Health Law	0	15	15
9	Globalization & Health	6	8	14
10	BMJ Journal of Clinical Research Ed	2	10	12
	Total of 10 journals	94	132	226
	Total global journal output	560	757	1317
	Share of top 10 journals in global journal output	16.79	17.44	17.16

Table 7: List of Significant Keywords in Literature on Global Health Tourism Research during 2007-16

S.No	Keyword	Frequency	S. No	Keyword	Frequency
1	Medical Tourism	675	17	Patient Safety	51
2	Tourism	490	18	Health Hazards	49
3	Health Care Cost	184	19	Kidney Transplant	49
4	Health Care Delivery	177	20	Public Health Service	41
5	Health Care Policy	177	21	Health Programs	44
6	International Cooperation	162	22	Transplantation	37
7	Economics	157	23	Vaccination	36
8	Health Care	154	24	Transplant Tourism	34
9	Health Care Quality	148	25	Globalization	33
10	Public Health	143	26	Leisure	33
11	Health Care Access	76	27		

for 17.16% share (226 papers) of total journal publication output during 2007-16. The publication share of these top 10 most productive journals increased from 16.79% to 17.44% between 2007-11 and 2012-16. The top most productive journal (with 42 papers) was the Journal of Travel Medicine, followed by Travel Medicine & Infectious Diseases (31 papers), Reproductive Medicine Online (27 papers), Social Science & Medicine (25 papers), etc. during 2007-16 (Table 6).

Significant Keywords

Around 26 significant keywords have been identified from the literature, which point to possible trends in global health tourism research. These keywords are listed in Table 7 in the decreasing order of the frequency of occurrence during 2007-16.

Highly Cited Papers

A total of 19 highly cited papers were identified which received citations from 82 to 178 during 2007-16. These 19 high cited papers together received 2224 citations, which averaged to 117.05 citations per paper. Of the 19 highly cited papers, 5 resulted from the participation of single organization (non-collaborative) and 14 involved the participation of two or more organizations (5 national collaborative and 9 international collaborative). Among international collaborative papers, the largest participation was from USA (7 papers), followed by U.K (5 papers), Italy (4 papers), Belgium, Netherlands and Canada (3 papers each), Denmark, Australia and Germany (2 papers each), Switzerland, France, New Zealand, Spain, Iran, Thailand, Laos, Cambodia, Philippines, Indonesia, Vietnam, Israel and Chile (1 paper each). The 19 highly cited papers involved the participation of 95 authors and 78 organizations. Of the 19 highly cited papers, 13 were published as articles, 5 reviews and 1 short survey. These 19 highly cited papers were published in 16 journals, of which 2 papers were published in Emerging Infectious Diseases and Human Reproduction and 1 paper each in Annals of Internal Health, BMC Health Services Research, Bulletin of the WHO, Clinically Infectious Diseases, Fertility & Sterility, General & Comparative Endocrinology, International Journal of Health Services, Journal of Public Health Policy, The Lancet, Maturitas, MedGenMed Medscape General Medicine, Pediatrics, Proceedings of the National Academy of Sciences of the United States of America, Science and Veterinary Parasitology.

SUMMARY & CONCLUSION

Using the Scopus database, this study provides a quantitative and qualitative description of the development of the research involving global health tourism research over a period of 10 years. From 2007 to 2016 the scientific literature related to global health tourism research registered a small growth rate of 7.26% per annum. However, qualitative performance of global health tourism research literature measured in terms of citation impact is 8.78 per paper in 10 years period, considered as high. USA is the top most productive country in the world in health tourism research. The other countries joining the top 10 most productive countries in 2007-16: U.K (12.59% share), Canada and Australia (7.45% and 7.10%), India and Germany (3.45% and 3.38%), Italy, Spain, France and Netherlands (from 2.53% to 2.95%) during 2007-16. Top 10 most productive countries in health tourism research accounted for 68.92% global publication share during 2007-16, which declined from 70.61% to 67.71% from 2007-11 to 2012-16. Six of top 10 countries scored relative citation index above the average (1.46): Italy (2.97), Netherlands (1.99), Germany (1.92), Canada (1.66) and France (1.59) during 2007-16.

CONCLUSION

Conclusively, the countries from North Americas, the European and Pacific dominate both in terms of quantitative and qualitative research. India ranks 5th in global publication output. For enabling counties like India to perform better in qualitative terms in future, it is desirable that the stakeholders in India should strive to give high priority to research in this area and also promote international collaborative research.

CONFLICT OF INTEREST

The authors declare none

REFERENCES

1. Gupta MK, Rajachar, Veena, Prabha, Chandra. Medical tourism: a new growth factor for Indian healthcare industry. International Journal of Research in Medical Sciences 2015;3(9):2161-3. https://doi.org/10.18203/2320-6012.ijrms20150597.
2. Tomislav Meštrović. What is Medical Tourism? http://www.news-medical.net/health/What-is-Medical-Tourism.aspx. (Accessed on 25.3.2017)
3. Medical Tourism Statistics and Facts https://www.health-tourism.com/medical-tourism/statistics/ (Accessed on 25.3.2017)
4. Chuang TC, Liu JS, Lu LY, Lee Y. The main paths of medical tourism: From trans-Plantation to Beautification. Tourism Management. 2014;45:49-58. https://doi.org/10.1016/j.tourman.2014.03.016.
5. Temizkan P, Çiçek D, Özdemir C. Bibliometric profile of articles published on health tourism Sağlık turizmi konusunda yayınlanan makalelerin bibliyometrik profili. Journal of Human Sciences. 2015;12(2):394-415. https://doi.org/10.14687/ijhs.v12i2.3287.
6. Masoud, Ferdosi, Alireza, Jabbari, Mahmoud, Keyvanara, *et al*. A systematic review of publications studies on medical tourism. Journal of Education and Health Promotion. 2013;2:51. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3826028/. https://doi.org/10.4103/2277-9531.119037; PMid:24251287 PMCid:PMC3826028.

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