

# Scientometric Analysis of Liver Disease Research Publications in India

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**Abstract** - This paper discusses or analyses trends in Liver Disease research during from 2012-2017, the data have been collected from web of science database. Aim of the study to analyze source wise research output, year wise publications, authorship pattern, and country wise research. The study finds that articles occupies first place among various forms of sources, during the study period in the year 2016 published highest research output, INDIA have published highest publication among the Liver Disease, majority research papers published themes of Liver Disease in medical field.

**Keywords:** Genetic Liver Disorder, Liver cancer and Liver Disease

## I. INTRODUCTION

The liver is one of the major metabolizing organs in the human body. It plays a pivotal role in providing important nutrients from the food to the blood and liquor. Changes in liver function due to infection or any other associated diseases, causes an imbalance in the above-mentioned functions leading to irreversible severe hepatic diseases/disorders, such as, liver cirrhosis, liver cancer, hepatitis, and the like. A large number of liver-associated disorders or diseases are still unknown. One of the most severe and common liver disease is attributed to Hepatitis, which occurs due to inflammation caused by different types of hepatitis viruses. Hepatitis B and C lead to chronic disease in hundreds of millions of people; they are the most common cause of liver cirrhosis and cancer. As per the World Health Organization (WHO) fact sheet, there are an estimated 1.4 million cases of hepatitis globally every year; two billion people worldwide have been infected, and about 600 000 people die every year due to the consequences of Hepatitis B. About 150 million people are chronically infected, and more than 350 000 people die every year from Hepatitis C-related liver diseases. Every year there are 20 million Hepatitis E infections, over three million acute cases of Hepatitis E, and 70 000 hepatitis E-related deaths. In India, about 250 000 people die of viral hepatitis, 300 000 of cirrhosis, about 20 000 liver cancers may be occurring annually, and the community prevalence of nonalcoholic fatty liver diseases varies from 5 to 28%.

## II. OBJECTIVES OF THE STUDY

To major objectives are formulated the present study as mentioned below:

1. To examine the Liver Disease output during the study period.

2. To study the country wise research output of Liver Disease research.
3. To identify the authorship pattern.
4. To study the language wise and institution wise Liver Disease research publications studies.
5. To identify the source wise Liver Disease research publications studies.

## III. METHODOLOGY

This study aims to analyze the trend in the development of Liver Disease research in scientometrics. It is also focused to trace the past trends in the area of Liver Disease research publications in scientometrics based on the sample data. The study evaluates the contribution on countries to the growth pattern and development of research productivity in this discipline during the last few decades.

### A. Data Collection

The publication of research output on Liver Disease research in scientometrics is obtained from various sources, such as Journals articles, Conference papers. Review, short survey, note, editorial press release, and letter. The research data required for the present study are downloaded from the web of science database. All the publications retrieved from the web of science database on Liver Disease and scientometric cover the period from 2012-2017. Further, the researcher has downloaded the data in the form of notepad files; then the bibliographical details are converted to the form of MS-EXCEL format using the PHP (Hypertext Preprocessor) scripting language text unique data are rearranged in MS-EXCEL format to eliminate duplication from the download data. Overall data retrieved by the researcher are 2637 records for analyzing the present study.

### B. Limitations

The findings of this study apply only to Liver Disease studies in to the fields related to the Diseases Category, Genetic Liver Disorder, Liver cancer and Liver Disease. This study covers Liver Disease with respect to the medical field, brought under the purview of the study and no other themes. This study makes a special attention only on the performance of research output in Liver Disease research. This study covers the years from 2012 to 2017 only.

**IV. ANALYSIS AND INTERPRETATION**

TABLE I YEAR WISE PUBLICATION IN LIVER DISEASE RESEARCH

S. No.	Publication Year	RECS	Percent
1	2012	293	11.1
2	2013	305	11.6
3	2014	331	12.6
4	2015	510	19.3
5	2016	603	22.9
6	2017	595	22.6
	Total	2637	100.00

Note: TLCS: Total Local Citation Score,  
TGLS: Total Global Citation Score

The year wise productivity of publications in Liver Disease research during from year 2012 to 2017 is presented in Table I. It shows that the publication of output is gradually increased and decreased trend. In the 2016 occupied first position that the output is increased (22.9%) compared to 2012 and 2017. It is clearly stated that in future the research productivity in Liver Disease research is increasing trend.

TABLE II SOURCES WISE OUTPUT IN LIVER DISEASE RESEARCH

S. No.	Document Type	RECS	Percent	TLCS	TGCS
1	Article	2105	79.8	626	19189
2	Review	324	12.3	87	4696
3	Meeting Abstract	121	4.6	1	4
4	Editorial Material	38	1.4	9	115
5	Letter	32	1.2	8	33
6	Article; Proceedings Paper	12	0.5	1	135
7	Review; Book Chapter	3	0.1	0	20
8	Article; Book Chapter	1	0.0	0	3
9	Correction	1	0.0	0	0
	Total	2637	100.00	-	-

The source wise output in country level of Liver Disease research is given in Table II. It shows that the Article is occupies first position (79.8%), Review (12.3%); Meeting Abstract (4.6%) followed by Editorial Material; Letter; Article; Proceedings Paper, Correction, News Item, Reprint, Article; Book Chapter.

TABLE III AUTHORSHIP PATTERN IN LIVER DISEASE RESEARCH OUTPUT

S. No.	Year	Single	Double	Three	Four	Five	Above Five	Total
1	2012	11	49	45	42	43	78	268
2	2013	15	37	45	59	85	111	352
3	2014	6	39	47	70	47	120	329
4	2015	9	73	69	91	74	184	500
5	2016	13	86	96	89	83	236	603
6	2017	7	62	84	88	97	247	585
	TOTAL	61	346	386	439	429	976	2637

The author productivity of research output is given in Table III. The authorship pattern is classified as single, double, three, four, five and above authors. It could be noted that

single author contribution is dominated (61 articles) followed by double, triple authors.

TABLE IV TOP 10 AUTHORS IN LIVER DISEASE RESEARCH (TOTAL AUTHORS 9449)

S. No.	Author	RECS	Percent	TLCS	TLCS/T	TLCSX	TGCS	TGCS/T	TLCR
1	Sarin S k	91	3.5	110	25.27	45	1839	668.15	81
2	Kumar A	79	3.0	77	16.25	41	856	233.60	20
3	Kumar S	58	2.2	11	3.32	7	252	70.97	14
4	Rastogi A	51	1.9	37	9.68	13	438	121.58	38
5	Sharma S	48	1.8	9	1.70	2	317	91.63	15
6	Kumar R	43	1.6	9	1.57	6	432	100.97	2
7	Kumar V	41	1.6	24	5.97	10	302	89.08	17
8	Sharma P	41	1.6	32	6.62	14	549	132.33	14
9	Gupta S	38	1.4	20	4.38	13	332	92.98	6
10	Singh A	38	1.4	7	2.78	2	141	42.82	18

Table IV shows that top 10 authors of country level of Liver Disease research. It could be noted that the SARIN SK occupied in first position (3.5%) compared to KUMAR A

second position (3.0%) followed by KUMAR S RASTOGI A and others. SINGH A occupied in last position(1.4%).

TABLE V TOP 10 JOURNALS IN LIVER DISEASE RESEARCH OUTPUT (TOTAL JOURNALS 3051)

S. No.	Journal	RECS	Percent	TLCS	TLCS/T	TGCS	TGCS/T	TLCR
1	Journal of Evolution of Medical and Dental Sciences-Jemds	97	3.7	1	1.00	4	4.00	5
2	Journal of Clinical and Diagnostic Research	65	2.5	0	0.00	57	28.33	9
3	Journal of Clinical and Experimental Hepatology	53	2.0	19	8.50	225	106.00	74
4	Journal of Gastroenterology and Hepatology	47	1.8	30	10.77	354	107.08	12
5	Plos One	47	1.8	0	0.00	399	100.52	24
6	Indian Journal of Gastroenterology	44	1.7	6	2.50	75	34.17	24
7	Hepatology International	38	1.4	42	10.42	1256	425.22	45
8	Journal of Hepatology	33	1.3	18	3.32	418	146.35	5
9	Hepatology	29	1.1	10	1.90	136	44.67	5
10	Indian Journal of Medical Research	28	1.1	16	3.48	148	37.55	5

The journal wise output in country level of Liver Disease research is given in Table V.

It could be noted that the Journal of Evolution of Medical And Dental Sciences-Jemds Occupies in first position (3.7%) compared to Journal of Clinical And Diagnostic Research (2.5%); Journal of Clinical And Experimental Hepatology (2.0%) followed by Journal of Gastroenterology and Hepatology, Plos One, Indian Journal of Gastroenterology, Hepatology International, Journal of Hepatology, Hepatology and Indian Journal of Medical Research.

The country wise output in country level of Liver Disease research is given in Table VI. It could be noted that the INDIA is occupies in first position (99.8%) compared to USA (8.3%); UK (2.8%) followed by Australia and etc.

TABLE VI TOP TEN COUNTRY WISE OF LIVER DISEASE RESEARCH OUTPUT

S. No.	Country	RECS	Percent	TLCS	TGCS
1	India	2633	99.8	730	24166
2	USA	220	8.3	60	8502
3	UK	73	2.8	31	6525
4	Australia	46	1.7	17	6811
5	Japan	43	1.6	41	7037
6	Saudi Arabia	43	1.6	10	4902
7	Germany	39	1.5	5	1509
8	South Korea	39	1.5	28	2569
9	France	37	1.4	41	6282
10	Malaysia	37	1.4	34	2380

TABLE VII TOP TEN INSTITUTIONS WISE OF LIVER DISEASE RESEARCH OUTPUT

S. No.	Institution	RECS	Percent	TLCS	TGCS
1	All India Inst Med Sci	132	5.0	90	5702
2	Inst Liver & Biliary Sci	132	5.0	102	1720
3	Post. grad Inst Med Educ & Res	100	3.8	106	1255
4	Christian Med Coll & Hosp	55	2.1	23	359
5	Sanjay Gandhi Post.grad Inst Med Sci	53	2.0	43	4855
6	CSIR	48	1.8	21	494
7	Govt Med Coll	43	1.6	1	105
8	Annamalai University	42	1.6	7	411
9	Sir Ganga Ram Hosp	39	1.5	13	314
10	Univ Delhi	37	1.4	19	420

The institution wise output in country level of Liver Disease research is given in Table VII. It could be noted that the is All India Inst. Med Sci and Inst Liver & Biliary Sci occupying in first position (5.0%) Post grad Inst Med Educ & Res (3.8%) followed by Christian Med Coll & Hosp and etc.

The word wise output in country level of Liver Disease research is given in Table VIII. It could be noted that this occupies in first position Liver (29.3%) compared to Disease (17.9%), Induced (12.1%) followed by Patients and etc.

TABLE VIII WORD WISE OF LIVER DISEASE RESEARCH OUTPUT

S. No.	Word	RECS	Percent	TLCS	TGCS
1	Liver	773	29.3	373	4148
2	Disease	471	17.9	148	7576
3	Induced	320	12.1	81	2585
4	Patients	303	11.5	137	2013
5	Rats	211	8.0	43	1493
6	Hepatitis	210	8.0	82	2602
7	Chronic	188	7.1	158	1780
8	Hepatic	188	7.1	57	1436
9	India	178	6.8	71	1018
10	Effect	146	5.5	28	929

### V. CONCLUSION

It is due to the pivotal place of journal as a medium of scientific communication than any other form of publication; majority of the research output published in article in general. It could be deduced from the discussion that, during the study period the research paper

publication trend is increasing and degreasing. Highest percent of publication published in 2016. Very lowest percent of research paper published in the year 2012. Conclude from the study, multi authored contributions is high compare to single authorship pattern. More papers published theme of Liver Disorder, Liver Disease, Hepatocellular carcinoma its evident of global level developed medical field.

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