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Research Article

PUBLICATIONS OF BREAST CANCER ANALYSIS- A SCIENTOMETRIC STUDY

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Abstract

Objective: To explore and evaluate the current status of breast cancer from the global scientific research article the period of 2021-2023 using bibliometric methods. **Methods:** All relevant publications from the year 2021 to 2023 were retrieved from Web of Science database. **Results:** During the span of 2021-2023 scientists all over the world have produced a total of 4761 publications on breast cancer research. In Authorship pattern research output Single author publication is low with 74 records. Multi author publication is high with 2348 records. The country wise output in country level of breast cancer research is given in table-5. It could be noted that the India is occupies in first position (4748) compared to USA (581); Saudi Arabia (505) followed by UK and etc. The productivity of breast cancer research is spread over a variety of publication media like Journal Articles, Review, Article; Early Access, Meeting abstracts, Retraction, etc. The most scholarly communication of scientific research is published in Article (3113, 65.38%, TLCS is 664 and TGCS is 14666), followed by review and other forms. Journal of molecular structure occupies in first position (94), Journal of biomolecular structure & dynamics in second place (71) followed by others. **Conclusion:** With the help of a scientometric analysis of breast cancer, researchers can clarify the current research status and explore the needed one.

Keywords: Breast cancer, Scientometrics, Journal, Articles.

INTRODUCTION

Breast cancer is a disease in which abnormal breast cells grow out of control and form tumors. If left unchecked, the tumors can spread throughout the body and become fatal. In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. (1) The cancer burden continues to grow globally, exerting tremendous physical, emotional and financial strain on individuals, families, communities and health systems. (2) In addition, women with breast cancer globally lose more disability-adjusted life years (DALYs) than any other kind of cancer.(3) The risk factors of breast cancer are Genetic and Non genetic factors. Genetic factors are family history of breast cancer, inheritance susceptibility. Non-genetic factors are sex, age, diet, exercise, weight, alcohol assumption, benign breast cancer, early pregnancy, breastfeeding, menopause, hormone replacement therapy. Breast cancer is one of the commonly metastasizes cancer to other organs in the terminal stage, resulting in a bleak prognosis.(3) The breast cancer rate increased 3.8% per year through the 1980s, but it has been stable from the 1990s to the present (4) Female breast neoplasm overtook lung cancer and became the most common cancer in 2020 (5). Scientometrics uses mathematical and statistical methods to analyze knowledge carriers, among which the Web of Science. Based on this premise, this paper conducted a scientometric analysis of literature from 2021 to 2023. This paper aims to explain about the most published countries and journals as well as the most influential authors, articles, and keywords.

Objectives

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

1. To examine the breast cancer research output during the study period.
2. To study the country wise research output of breast cancer research.
3. To identify the authorship pattern.
4. To study the language wise and institution wise male breast cancer research publications studies.
5. To identify the source wise breast cancer research publications studies.

METHODOLOGY

The study evaluates the contribute on countries to the growth pattern and development of research productivity in this discipline during the last two years.

Data collection

The publication of research output on breast cancer 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.

Analysis and Interpretation

Top 10 authors in breast cancer research (16750**)**

S. No	Author	Recs	TLCS	TGCS
1	Kumar S	122	30	583
2	Kumar A	101	26	512
3	Singh S	92	26	491
4	Kumar R	86	16	273
5	Gupta S	78	27	467
6	Sharma A	62	7	238
7	Kumar P	59	16	303
8	Kumar V	55	19	289
9	Kumar D	53	15	339
10	Singh A	48	4	218

Table 1 show that top 10 authors of breast cancer research. It could be noted that the Kumar S occupied in first position with 122 records compared to Kumar A second position with 101 followed by Singh S and others. Singh A and others occupied in last position with 48 records.

Top 10 Journals in breast cancer research (1107**)**

S. no	Journal	Recs	%	TLCS	TGCS
1	Journal of molecular structure	94	15.69	0	415
2	Journal of biomolecular structure & dynamics	71	11.85	27	197
3	Molecules	63	10.51	0	380
4	Anti-cancer agents in medicinal chemistry	58	9.68	26	209
5	Scientific reports	57	9.51	0	349
6	Cancers	56	9.34	0	378
7	Annals of oncology	54	9.01	0	55
8	Journal of drug delivery science and technology	52	8.73	0	203
9	ACS omega	50	8.34	14	148
10	Frontiers in oncology	44	7.34	0	257
	Total	599	100		

The Journal wise output of male breast cancer research is given in table-4. It could be noted that the Journal of molecular structure occupies in first position (94), Journal of biomolecular structure & dynamics in second place (71) followed by others.

Word wise publication in breast cancer research (8880**)**

S. No	Word	Recs	%	TLCS	TGCS
1	Cancer	2697	32.89	714	13720
2	Breast	2153	26.26	627	8784
3	Based	524	6.39	135	2625
4	Using	479	5.84	157	2183
5	Anticancer	469	5.72	72	2514
6	Synthesis	457	5.57	51	1951
7	Cells	436	5.31	84	1938
8	Cell	344	4.19	91	1668
9	Potential	334	4.07	77	1928
10	Activity	305	3.72	48	1208

Table – 8 provides a snapshot of the top 10 words of breast cancer research. The table grades Cancer as the major word in research with 2697 articles (32.89%, TLCS 714 and TGCS 13720) , Breast in the second place with 2153 records (26.26%, TLCS- 627 and TGCS- 8754) and Activity as the least with 305 articles (3.72%, TLCS- 48 and TGCS- 1208) in the top 10 list.

Year wise publication breast cancer research

S. No	Publication Year	Recs	%	TLCS	TGCS
1	2021	1449	30.43	577	14018
2	2022	2040	42.84	384	8583
3	2023	1272	26.73	41	1034

During the span of 2021-2023 scientists all over the world have produced a total of 4761 publications on breast cancer research. Table-1 shows the year wise distribution of papers published. In the year of 2021 published 1449 (30.43) articles and then it increased steadily and reached 2040(42.84) in 2022. And again 2023 decreased to 1272(26.73) articles. Table 2 portrays 10 document types researched for this study yielding a total of 4761 records during the course of study. The productivity of breast cancer research is spread over a variety of publication media like Journal Articles, Review, Article; Early Access, Meeting abstracts, Retraction, etc. The most scholarly communication of scientific research is published in Article (3113, 65.38%, TLCS is 664 and TGCS is 14666), followed by review and other forms.

Source wise output in breast cancer research 19

S. No	Document Type	Recs	%	TLCS	TGCS
1	Article	3113	65.38	664	14666
2	Review	1030	24.63	324	8539
3	Article; Early Access	266	5.58	0	203
4	Meeting Abstract	190	3.99	1	54
5	Review; Early Access	52	1.09	0	35
6	Letter	41	0.86	2	25
7	Editorial Material	35	0.73	2	15
8	Correction	15	0.31	0	1
9	Review; Book Chapter	7	0.14	9	86
10	Retraction	3	0.06	0	0

Top ten Institutions wise of breast cancer research (5653)

S. No	Institution	Recs	TLCS	TGCS
1	All India Inst Med Sci	187	20	636
2	Acad Sci & Innovat Res Ac Sir	116	20	618
3	King Saud Univ	115	40	856
4	Indian Inst Technol	109	5	429
5	Homi Bhabha Natl Inst	101	31	466
6	Jamia Hamdard	92	50	785
7	Manipal Acad Higher Educ	92	14	402
8	Tata Mem Hosp	81	17	223
9	Cent Univ Punjab	76	40	435
10	Vellore Inst Technol	74	14	222

The Institution wise output in male Infertility research is given in table-7. It could be noted that All India Inst Med Sci occupying in first position with 187 records; second Acad Sci & Innovat Res Ac Sir with 116 records followed by King Saud Univ etc.

Top ten Country wise of breast cancer research (142)

S. No	Country	Recs	TLCS	TGCS
1	India	4748	1002	23618
2	USA	581	98	4034
3	Saudi Arabia	505	130	3677
4	South Korea	199	45	1595
5	UK	177	44	1292
6	Peoples R China	155	41	1731
7	Australia	144	40	1258
8	Canada	101	20	712
9	Malaysia	98	21	709
10	Egypt	90	11	811

The country wise output in country level of breast cancer research is given in table-5. It could be noted that the India is occupies in first position (4748) compared to USA (581); Saudi Arabia (505) followed by UK and etc.

Authorship pattern in breast cancer research

Authors year	One Author	Two Author	Three Author	Four Author	Five Author	More Than Five Author
2021	29	154	222	172	186	625
2022	31	216	244	267	245	1037
2023	14	166	159	165	143	686
	74	536	625	604	574	2348

In Authorship pattern research output Single author publication is low with 74 records. Multi author publication is high with 2348 records.

Conclusion

This is due to the fundamental place that the journal occupies as a means of scientific communication compared to any other

form of publication; Most research results are published in general articles. From the discussion it is clear that, in the study period, the trend of publication of research articles is increasing. The highest percentage of publications published in 2022. The lowest percentage of research articles published in 2023. Breast cancer is the main concern of society and also of future generations. Different types of research are needed for the diagnosis, prevention, and treatment related to Breast cancer. This article may provide the information that researchers need.

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