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Research Article

**A BIBLIOMETRIC ASSESSMENT OF THE ACTUAL  
ARTICLES THAT WERE PRINTED IN PAKISTAN MEDICAL  
ASSOCIATION JOURNAL**<sup>1</sup>Fatima Tul Zahra, <sup>2</sup>Haseeb Nasir, <sup>3</sup>Zara Javed Barlas<sup>1</sup>King Edward Medical University, <sup>2</sup>MO, Central Jail Kot Lakhpat Lahore, <sup>3</sup>THQ, Kharian**Abstract:**

*The objective of this study was to organize a Bibliometric assessment of the actual articles that were printed in Pakistan Medical association journal.*

*Methods: The current research study was organized in Lahore. The time duration of this study was between 2014 and 2018. All the actual articles printed in the journal of Pakistan Medical Association were included in this study. Journal websites aided in the collection of articles. Bibliometrics was assessed for its limitations.*

*Results: The number of actual articles that were regularly provided was 913 in total. During the time of study, six important additions were printed, so these were excluded from study. Eventually, there observed an increased in number of actual articles. The number of actual articles in 2014 was 148 (16.2%), Where as in year 2018 the number of articles increased to 214(23.4). The number of actual articles printed yearly, exists between 148 and 214, 21-30 quotations were noticed in 510 (55.9%). More over the number of authors belong to Sindh, Pakistan were 481 (52.7%) and the institution which was most effective was Agha Khan University Karachi 104 (15.3%) articles were about community Medicine.*

*Conclusion: The study concluded that most of the authors who contributed in articles were from Sindh from the year 2014 to 2018, there observed an eventual increase in number of articles printed in journal of Pakistan Medical Association per issue.*

**Keywords:** Bibliometrics- medical journal, statistical bibliography-JPMA, Bibliometrics, Journal of Pakistan Medical Association, Distribution of articles, Citation, Author pattern.

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**INTRODUCTION:**

In 1969, both terms “bibliometrics’ scient metrics” were recognized simultaneously. scient metrics was the approach to those quantitative techniques that work with assessment of science observed as an information pathway whereas, bibliometrics was the approach of statically and mathematical techniques based on books and other modes of communication, now a days, both of these terms are considered alternatives of each other [1].

Statistical assessment of the history was the one name that was used in previous times and was very unfrequented instead of these terms [2].

However, with almost the same concept, different names were used for different scientists. There is a tremendous use of bibliometric technique in choosing and weeding policies by the librarians. In distinguishing most famous authors and important publications, this technique is very helpful to the academic community. By means of bibliometric approach and citation indicator, Library information science researches employed this technique widely to assess the scientific results of printed articles, Moreover, in determining important explanation of particular article, high cited journals, impact factor of journal, ranking of prolific authors and author’s productive pattern, bibliometrics studies are very helpful [3].

From Pakistan, the biomedical journal which is of international standard is journal of Pakistan Medical Association (JPMA). Since 1953 to now, this journal is thoroughly revised medical journal with international standard. Serial number (ISSN) 0030-9982 (J. Pak. Med. Assoc) JPMA is member of international committee of medical journal editors (ICMJE)2009, and member of committee on publication ethics, United Kingdom (COPE-UK2010). Medical and Dental council of Pakistan recognize JPMA in 2013, 0.409 was the impact factor of the journal according to citation reports [4]. Many objects were included in the current research study. These objectives include evaluating authorship

pattern to understand citation pattern to check out number and percentage of articles printed on yearly basis.

To analyze various aspects of original articles printed in JPMA.

To assess the works of authors along with their gender and geographical area.

To categorize articles by medical specialties to evaluate length of article material and methods.

The current research study was organized in Lahore. The time duration of this study was between 2014 and 2018. All the actual articles printed in the journal of Pakistan Medical Association were included in this study. Journal website aided in the collection of articles. Portable Document Format (PDF) and Hyper Text Markup Language (HTML) versions were assessed. The analysis was done for the work of authors and their gender and geographical area; number and percentage of articles printed yearly; citation pattern, authorship pattern and articles by medical specialties by using bibliometric technique.

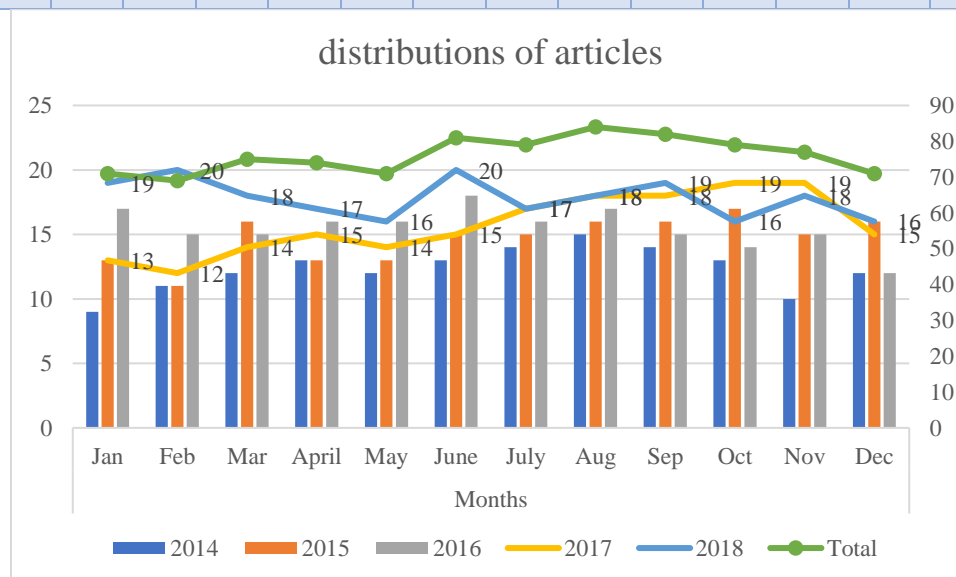
The study included all the actual articles that were provided regularly. However, in this study, case Reports, important supplements, short communication review articles, letter to the editor and students’ corner were not included. Different factors were observed for each actual article. These factors include citation pattern, articles medical specialty, involvement of different countries number of references, authorship pattern, gender and geographical association of authors. Other countries were not divided while Pakistan was divided for study purpose. Seven divisions were made which included Azad Jammu And Kashmir (AJK) Gilgit Baltistan, Khyber Pakhtunkhwa, Islamabad, Sindh, Baluchistan and Punjab.

**RESULTS:**

This study concludes 1953 citations and total actual articles were 913. In 2014, the lowest number of articles were 148(16.2%) and in 2018, 214(23.4%) were the highest number of articles. (Table- 1)

Table No 01: Year wise distributions of articles

Years	Months												Total	percentage
	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec		
2014	9	11	12	13	12	13	14	15	14	13	10	12	148	16.2%
2015	13	11	16	13	13	15	15	16	16	17	15	16	176	19.3%
2016	17	15	15	16	16	18	16	17	15	14	15	12	186	20.4%
2017	13	12	14	15	14	15	17	18	18	19	19	15	189	20.7%
2018	19	20	18	17	16	20	17	18	19	16	18	16	214	23.4%
Total	71	69	75	74	71	81	79	84	82	79	77	71	913	100%

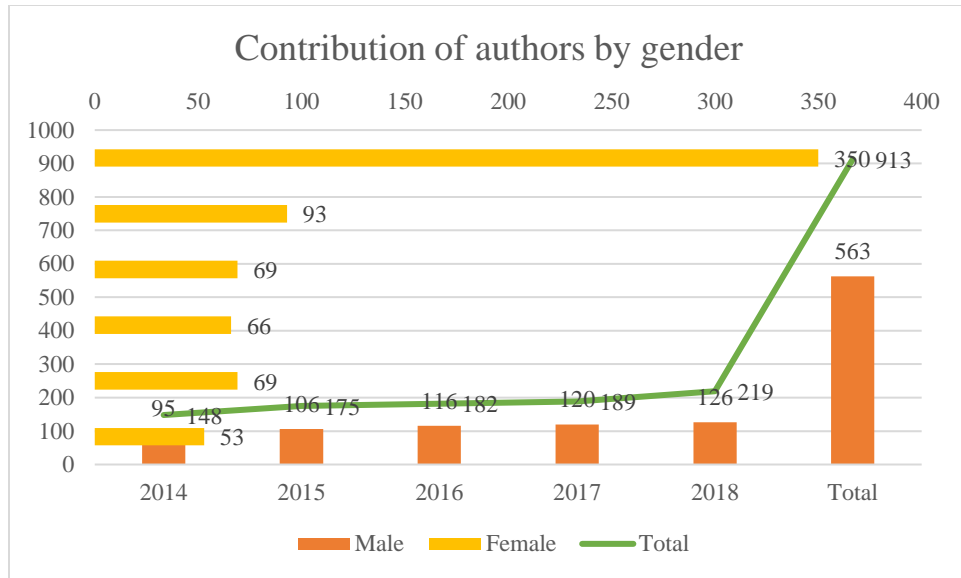


The number of male and female authors were 563(61.7%) and 350(38.3%). These found single author 27(3.0%), two author contributes 126(13.8%), three author 206(22.6%) and four author contributions 203(22.2%). Moreover, the contribution

of five author and six authors were 140 (15.3%) and 125(13.7%) respectively. The assessment was made for all the first authors for analysis of gender (Table-2)

Table No 02: Contribution of authors by gender

Years	Male	Percent	Female	Percent	Total	Percent
2014	95	64.2%	53	35.8%	148	16.2%
2015	106	60.6%	69	39.4%	175	19.2%
2016	116	63.7%	66	36.3%	182	19.9%
2017	120	63.5%	69	36.5%	189	20.7%
2018	126	57.5%	93	42.5%	219	24.0%
Total	563	61.7%	350	38.3%	913	100%



Two divisions namely international and national zones were made related to first authors geographical area 658(72%) was the involvement from Pakistan.

The involvement of Sindh and Punjab was 481(52.7%) and 98(10.7%) respectively (Table-3).

**Table No 03: Geographical affiliation of authors**

S.NO	Zones /Countries	2014	2015	2016	2017	2018	Total	Percent
1	Azad Kashmir	0	0	0	1	1	2	0.2
2	Baluchistan	1	1	0	0	1	3	0.3
3	GilgitBaltistan	0	0	0	0	1	1	0.1
4	Islamabad	6	9	10	10	20	55	6.0
5	KPK	1	3	2	6	6	18	2.0
6	Punjab	0	12	20	17	22	98	10.7
7	Sindh	27	120	92	92	87	481	52.7
8	Australia	90	0	4	0	0	4	0.4
9	Bangladesh	0	2	0	1	0	3	0.3
10	China	0	0	1	0	0	1	0.1
11	Egypt	0	0	1	1	0	2	0.2
12	Switzerland	0	0	3	0	1	4	0.4
13	India	0	2	1	1	2	6	0.7
14	Iran	8	9	20	28	36	101	11.1
15	Iraq	0	2	1	0	1	4	0.4
16	Ireland	0	1	0	0	0	1	0.1
17	Japan	1	0	0	0	0	1	0.1
18	Jordan	0	1	3	0		6	0.7
19	Liberia	0	1	0	0	2	5	0.5
20	Libya	0	0	5	0	0	1	0.1
21	Malaysia	0	0	0	2	0	2	0.2
22	Morocco	0	0	0	1	0	1	0.1
23	Nigeria	1	1	0	2	1	5	0.5
24	Oman	0	0	0	0	1	1	0.1
25	Qatar	0	0	1	0	1	2	0.2
26	Saudi Arabia	6	5	3	3	4	21	2.3
27	Scotland	1	0	0	0	0	1	0.1
28	Sri Lanka	0	0	0	0	1	1	0.1

29	Sudan	0	0	0	1	0	1	0.1
30	Thailand	0	0	0	0	1	1	0.1
31	Turkey	2	2	11	18	28	61	6.7
32	United Arab Emirates	3	1	1	1	1	7	0.8
33	United Kingdom	0	1	2	3	1	7	0.8
34	United States of America	0	2	1	1	0	4	0.4
35	Yemen	1	0	0	0	0	1	0.1
<b>Total</b>	<b>35</b>	<b>148</b>	<b>175</b>	<b>182</b>	<b>189</b>	<b>219</b>	<b>913</b>	<b>100%</b>
		16.21%	19.17%	19.93%	20.70%	23.99%		

Iran and Turkey also contributed from other countries. Involvement from other countries was 255(28%). Among these countries, the involvement of Iran and Turkey was 101(11.1%) and 61(67%) respectively. In JPMA, authors from 28 countries were involved, in this list, the contributes of united states of America, Saudi Arabia and United kingdoms were 4(0.4%), 21(2.3%) and 7(0.8%) respectively. From various countries, the number of articles had been 63(7%).

In the year 2009,2010,2011,2012 and 2013, the number of articles were 9(14.2%), 8(12.6%), 14(22.2%), 21(33.3%) and 11(17.4%) respectively. Among these, 2012 was the dominant year. In the study, total involvement of authors was 3736. Out of

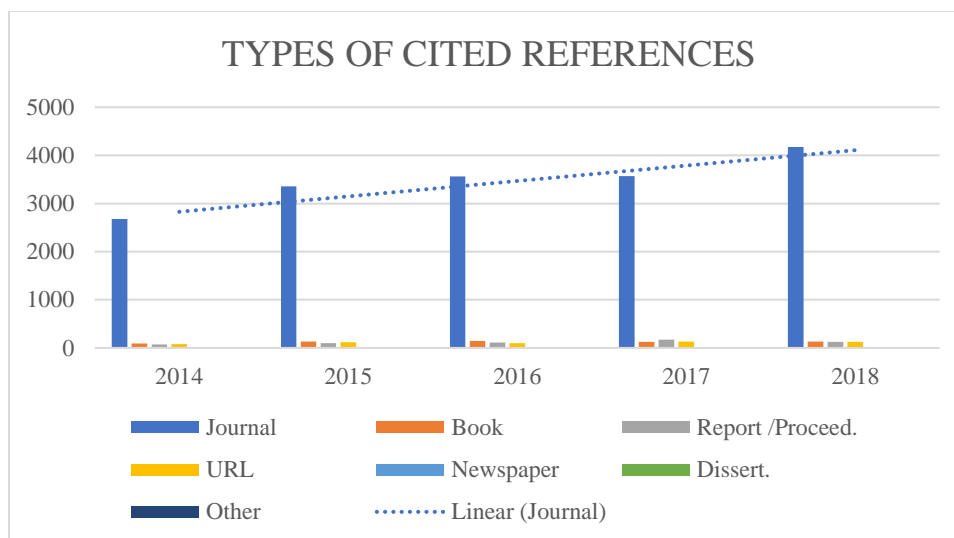
these, co-authors were 2823(75.5%) and first authors were 913(24.4%).

Articles were also examined length wise. The number of articles with 3, 4, 5 and 6 pages were 116(12.7%), 389(42.6%), 282(30.9%) and 98(10.7%) respectively. The articles with more than 6 pages were also found. The number of such articles was 25(2.7%). Reference of the articles was checked. The number of references were 5-10 ,11-20,21-30 and 31-40 observed in 29(3.2%),355(38.9%),510(55.9%) and 16(1.7%) respectively. 03(0.3%) articles had reference about 40.

The number of authors who cited reports/proceeding, books and journals were 585(3.1%), 621(3.2%) and 17340(90.5%) respectively (Table-4)

**Table-4: Types of cited references:**

Years	Journal	Book	Report /Proceed.	URL	Newspaper	Dissert.	Other	Total
<b>2014</b>	2679	89	73	78	2	3	1	2925
<b>2015</b>	3357	130	102	118	5	6	6	3724
<b>2016</b>	3562	147	114	100	3	6	0	3932
<b>2017</b>	3570	126	171	131	1	6	3	4008
<b>2018</b>	4172	129	125	125	0	11	2	4564
<b>Total</b>	17340 (90.5%)	621 (3.2%)	585 (3.1%)	552 (2.9%)	11 (0.1%)	32 (0.2%)	12 (0.1%)	19153 (100%)



The internet citations were 552(2.9%) and highest among other means of information like newspaper etc. JPMA included specialties of clinical and basic medical Science which were 53 in total. The articles related to surgery were 72(7.9%) and Medicine was 140(15.3%).

#### DISCUSSION:

All over the world, bibliometric research studies have been organized. The purpose of these studies was to point out important of research work regarding Medical Sciences. The important part of any research study is review of history, which can't be denied. The detailed assessment of scientific output is given by bibliometric studies. The comprehension regarding previous research size, research models and research interest in provided by literature review in the present study. International journal of Medical Health sciences IJMHS was assessed. This study concluded that by supporting new research collaborations and by stabling international relationships, journal plans to rely in observed strength [5]. From the year 2002 to 2012, on Position Emission Tomography (PET), research publications have been assessed. This study concludes that in year 2002, 2007 and 2012, there observed a valuable increase as 547, 986 and 1838 respectively [6]. A study was organized in Middle Eastern Arab countries based on toxicology research. The time duration of this study was 10 years (2003-2012). It inquires the current information. It concluded that in toxicology journal in the Arab countries, it ensures advancement and good start for toxicology research activity [7,8,9]. In the field of Medical Sciences, the bibliometric studies have been conducted.

To assess the importance of medical journal, few studies have been organized regarding bibliometric

analysis. From 1997 to 2006, journal of Ayyub Medical College is assessed by one such study. The study showed an enhancement in number papers in JAMC. The Number of Pakistani authors is high and its main types are actual articles [10,11,12].

Another study was organized which rate Pakistani medical journals, principles of citation analysis was used for rating, the journals. The study concluded that in the three rankings, the journal which got first position was JMPA and second position was attained by journal of college of physicians and surgeons Pakistan [13]. In another study, it is showed that in 32 research articles, these were 437 citations. Impact factor was high shown by authors and journal self – citations. Most of the authors were from Pakistan. For enhancing the quality of journal, there is a need of better literature search and more research activities. [14]

In various national and international journals, many bibliometric studies have been organized other than topic of Medical Science. In one such study, there observed an involvement only one author. Most of the authors were from Pakistan. As observed in the study 11 volumes, there was involvement of authors from 12 countries [15-18].

Journal of American Society for Information Science and Technology (JASIST) was assessed for citation. It was shown that in the time period of 1985 to 2009, there was increase in number of references 2 to 3 times and rate of publication increased 2 times [19], likewise between the time period 2000 and 2006, Ghana Library journal was printed. It revealed that most of the items cited were books and articles with percentage of 32.5% and 45% respectively [20].

Between the time period 2001 to 2006 a study was conducted on Malaysian Journal of library and Information Science. Most of the authors were from Malaysia. Articles mostly involved two-authors. The study revealed on increase in number of references along with length, increase in numbers of publications and variation in types of articles printed (17.56%) was on the peak. This was shown by the Annals of Library and Information studies from 1999 to 2005. 6-10 pages were the length of majority of the pages. The authors were mostly from India. 35.88% was the percentage of single-author involvement [21].

### CONCLUSION:

All around the globe, JPMA is accepted because of its optimistic approach in field of biomedical science. It captivates articles of scholars from whole world. JPMA has passed 60 years of publication very profitably. From the year 2009 to 2013 there is an increase in articles of JPMA. It published articles on monthly basis. The department of Medical Sciences is free for publication. Output of author, possible hardships and citation behavior trend can be indicated by such bibliometric studies. The output of this journal ensures that other researches will be affected by it and it will enhance its impact factor.

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