Top Most Cited Articles Related to Dental Caries- A Bibliometric Analysis

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Abstract

BACKGROUND: The bibliometric analysis of articles provides more useful information and scientific knowledge about the field of research. This also helps to encourage the scientists to be updated in the research work.

AIM: The aim of this study is to evaluate the bibliometric analysis of top 30 cited dental caries articles from the year 2000- 2019.

MATERIALS AND METHODS: The top 30 cited articles from the year 2000-2019 were hand searched for bibliometric analysis. The Google Scholar and Scopus databases were used to assess the top 30 cited articles. The parameters such as number of citations, geographical distribution, type of articles and patterns of authorship were assessed.

RESULTS: The top 30 cited articles were ranged from 2165- 418. Most of the articles are review articles and are conducted in the United States of America with maximum number of joint authorship patterns.

CONCLUSION: The bibliometric assessment of dental caries articles helps to enlighten the knowledge as well as provides additional information to design a proper treatment protocol.

***Keywords**: Citations, bibliometric analysis, dental caries, research.*

Introduction

Dental caries is most prevalent multi-factorial disease that exists globally which affects the overall health of the individual. The socio- behavioural, environmental and biological factors are the major risk for the occurrence of dental caries [1]. Based on the etiological factors, the dental caries causes rapid destruction of dental structures which produces complications locally and generally and is most common in developing countries especially among children [2].

Dental caries is the most prevalent non-communicable disease and it affects the permanent dentition in the 1st place whereas it ranks 12th place for the deciduous dentition as per the Global Burden of Disease Study in the year 2015 [3].

Bibliometrics deals with the analysis of academic literature quantitatively which includes various parameters such as number of publications, citations, name of the journal, impact factor of the journal, geographical distribution and institutional affliations. The citation is the reference which was used by a researcher during publication of the article. The bibliometric analysis provides most useful information about the articles and journal which provide easy assess to the population [4].

The scientific journal plays a major role in providing knowledge about the research. This also provides more interaction and participation of the authors to develop their skills in research especially in developing countries. The topic of journals related to health provides more

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knowledge and awareness in order to maintain health and prevent diseases

This present study aims to evaluate the bibliometric analysis of the top most cited articles related to dental caries.

Materials and Method

The dental caries related articles published from the year 2000-2018 were hand searched using Google scholar and Scopus database. The top most 30 cited articles were ranked based on the citation number provided in the Google Scholar and assessed for bibliometric analysis which includes the no. of citations, journal name, no. of authors, geographical distribution and type of articles.

The inclusion criteria are only the articles published from the year 2000-2018 were selected and those articles published in English language are included. Only the articles with full text are included. The exclusion criteria are the articles published before the year 2000 and the articles published other than the English language are excluded from the study.

Results

Table 1: Ranking of top 30 cited dental caries articles from the year 2000-2018

RANK	ARTICLES	NO. OF CITATIONS
	Selwitz et al, 2007 5	2165
1	Featherstone, 2000 6	1195
2	Ismail et al, 2007 7	997
3	Marinho et al, 2003 8	961
4	Marthaler, 2004 9	899
5	Fejerskov, 2004 10	882
6	Marinho et al, 2013 11	873
7	Harris et al, 2004 12	831
8	Bagramian et al, 2009 13	768
9	Beltran- anguliar et al, 2005 14	751
10	Takahashi et al, 2011 15	712
11	Aas et al, 2008 16	686
12	Nase et al, 2001 17	631
13	Kidd et al, 200 18	620
14	Featherstone, 2004 19	619
15	Walsh et al, 2010 20	613
16	Kassebaum et al, 2015 21	600
17	Tanzer et al, 2001 22	577
18	Touger decker et al, 2003 3	574
19	Sheiham, 2006 23	538
20	Peterson et al, 2004 24	536
21	Peterson, 2005 25	505
22	Featherstone, 2008 26	486
23	Takahashi et al, 2008 27	481
24	Lukacs et al, 2006 28	460
25	Marshall, 2003 29	447
26	Kleinberg, 2002 30	436
27	Berkowitz et al, 2003 31	433
28	Burt et al, 2001 32	429
29	Aahola et al, 2002 33	418
30		

In the table 1, top 30 cited articles related to the dental caries were ranked from the year 2000- 2018. The number of citations ranged from 2165- 418.

Table 2: Rank wise arrangement of journal name with geographical distribution

RANK	COUNTRY	JOURNAL NAME
1	USA	The Lancet
2	USA	The Journal of the American Dental Association
3	USA	Community Dentistry and Oral Epidemiology
4	Brazil	Cochrane database of systematic reviews
5	Switzerland	Caries research
6	Denmark	Caries research
7	UK	Cochrane database of systematic reviews
8	UK	Community dental health
9	USA	American journal of dentistry
10	USA	MMWR surveillance summaries
11	Japan	Journal of dental research
12	Norway	Journal of clinical microbiology
13	Finland	Caries research
14	Denmark	Journal of dental research
15	USA	Journal of dental research
16	UK	Cochrane database of systematic reviews
17	USA	Journal of dental research
18	USA	Journal of dental education
19	USA	Journal of clinical nutrition
20	London	British dental journal
21	Switzerland	Community dentistry and oral epidemiology
22	Switzerland	Community dentistry and oral epidemiology
23	USA	Australian dental journal
24	Japan	Caries research
25	Oregon	The official journal of the human biology association
26	IOWA	Paediatrics
27	USA	Critical reviews in oral biology and medicine
28	USA	Journal- Canadian dental association
29	USA	Journal of dental education
30	Finland	Archives of oral biology

In table 2, the geographical distribution and the name of the journal in which the dental caries articles were published were listed. The journal of dental research and caries research were the most published journal. The USA was the most common place where the study was done.

Table 3: Type of articles

Type of article	No. of articles
Original articles	4
Review articles	25

In table 3, the type of the dental caries articles were discussed. The total of original articles was 4 whereas the review articles were 25

Table 4: Geographical distribution of authors

Geographical distribution	No. of articles
Asia	2
Africa	0
Europe	12
America	16
Australia	0
Antartica	0

The table 4 shows about the geographical distribution of the authors of the dental caries articles

Table 5: Patterns of authorship

Authorship pattern	No. of articles
Single authors	9
Joint authors	21

The table 5 shows about the authorship pattern of the dental caries related articles. Out of 25 articles, 21 articles were joint authors whereas 9 articles were joint authors.

Discussion

In this study the top 30 cited dental caries related articles were ranked and their bibliometrics were assessed. This provides more useful information about the articles by providing more details of the number of citation of articles, study design, geographical distribution of authors and the patterns of authorship for easy assessment to the scientists as well to the public.

Selwitz et al, 2007 was the leading article with highest number of citations 2165. It is a review article and the study was conducted in USA. This gives more information about the dental caries which was published in the year 2007 [5].

The second most cited article by Featherstone which was published in the year 2000 in USA and obtained 1195 citations. This article discussed about the prevention and control of dental caries and it was published in the Journal of American Dental Association [6]. The third most cited article was given by Ismail et al which was published in the year 2007 in USA and obtained 997 citations. This article discussed about the International Caries Detection and Assessment System (ICDAS) method of examining dental caries and it was published in the Community Dentistry and Oral Epidemiology [7].

Table 2 shows about the rank wise arrangement of geographical distribution and journal name of the published articles. The maximum number of studies conducted in USA. This shows that authors from the American continent shows more interest in the field of research.

Table 3 shows that among the top 30 cited dental caries articles most of them are review articles and only 4 of them are original articles. These articles provide more information about dental caries such as prevention, diagnostic approach and various treatment modalities.

Featherstone had published more number of articles when compared to others and all of them were review articles. Among these top 30 cited articles most of the articles were published in the Journal of dental research, Caries Research and Community dentistry and oral epidemiology. The table 4 shows that geographical distribution of the authors of top 30 cited dental caries articles of that all the authors were foreigners of that two authors were from Asian continent, 16 authors are from American continent whereas 13 authors were from Europe continent. The table 5, shows about the authorship patterns of top 30 cited dental caries articles among these 9 of them were single authors whereas 21 of them are joint authors. Most of the articles were done in the country of USA.

Limitations:

The limitations of this study are only articles were hand-searched from Google scholar and Scopus database. The inclusion of other databases such as web of science, science direct and Pubmed will provide more additional information.

Conclusion

This study concludes that the bibliometric analysis of highly cited articles provide most interesting and useful information about the dental caries. The citation of the articles ranged from 2165-418. Most of these articles are review articles and these researches were conducted in the American continent followed by Europe continent.

Ethical Clearance: Since it is a review article, the ethical permission taken from the department of public

health dentistry, SRM dental college, Ramapuram.

Conflict of Interest: Nil

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