



Scientific Research Report

A Bibliometric Analysis of the *International Dental Journal* (2011-2020)Frank Mayta-Tovalino^{a*}, Carlos Quispe-Vicuña^{b,c}, Miguel Cabanillas-Lazo^{b,c}, Arnaldo Munive-Degregori^d, Maria Eugenia Guerrero^e, Roman Mendoza^f^a Vicerrectorado de Investigación, Universidad San Ignacio de Loyola, Lima, Perú^b Sociedad Científica de San Fernando, Universidad Nacional Mayor de San Marcos, Lima, Perú^c Grupo Peruano de Investigación Epidemiológica, Unidad para la Generación y Síntesis de Evidencias en Salud, Universidad San Ignacio de Loyola, Lima, Perú^d Postgraduate Department, Master's Degree in Library and Information Science, Universidad Nacional Mayor de San Marcos, Lima, Perú^e Academic Department of Stomatology and Medical Surgery, Faculty of Dentistry, Universidad Nacional Mayor de San Marcos, Lima, Perú^f Postgraduate Department, Faculty of Dentistry, Universidad Nacional Federico Villarreal, Lima, Perú

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ABSTRACT

Introduction: Bibliometrics is an area that allows for the evaluation of scientific publications by means of different indicators. The aim of this research was to perform a bibliometric study of the scientific production of the *International Dental Journal* (IDJ) between 2011 and 2020.

Methods: All publications of the journal between 2011 and 2020 extracted from the Scopus database were included. The number of publications, most productive institutions, type of collaboration, most productive countries, most cited articles, and authors with the highest academic production were used as bibliographic indicators. It was exported to the SciVal tool for analysis.

Results: A total of 630 documents published in IDJ by 1947 authors were collected, with a total of 7212 citations (11.4 citations per document). The United States was the country with the highest number of documents (100). The University of Adelaide (Australia) was the institution with the highest scientific production (16 publications), whilst the institution with the highest impact was the Universidade de São Paulo (Brazil), with 12.2 citations per paper. Marc Luiz Tennant was the author with the highest number of published manuscripts (13). Finally, most of the publications had international collaboration (146 documents).

Conclusions: IDJ is a high-quality journal and, in the dental field, it has a high impact worldwide, which allows for a greater number of citations of its articles and placing it in the forefront of future research.

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Introduction

The FDI World Dental Federation is a French organisation that for more than 100 years has served as the leading representative body for dentists worldwide, developing health

policies and continuing education programmes. In order to share its unified voice for dentistry worldwide, it has as its official journal—the *International Dental Journal* (IDJ)—which is a peer-reviewed journal that publishes bimonthly on topics in oral health, international public health, education, and interprofessional practice.¹

This places IDJ, internationally, as one of the leading journals in the field of dentistry. The impact of IDJ on the world dental literature can be evidenced in recent publications, as it

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has recently published seminal reviews of critical importance to dentistry such as oral hygiene,² antibiotic use in patients with diabetes,³ and antibiotic use in patients with cardiovascular disease.^{3,4} When we focus on a more current context, IDJ has published high-quality reviews on dentistry and its relationship with COVID-19.⁵⁻⁷

In the context of cataloguing scientific production, bibliometric studies allow us to perform an analysis of the publications of a given institution or journal in order to have a broader context of its productivity and to be able to establish future strategies.^{8,9} However, despite the importance of IDJ in the dental literature, no bibliometric study has been reported so far that analyses the productivity of this journal or includes it in any analysis. For this reason, this study aims to perform a bibliometric study on the status and current trends in publications between 2011 and 2020 that appeared in IDJ.

Materials and methods

Study design and search strategy

A secondary bibliometric study was conducted that evaluated all publications in IDJ between 2011 and 2020. The study sample ($n = 630$) represented all papers collected during that period. The Scopus database (Elsevier, United States) was used to obtain all relevant data for the present research. In addition, the Boolean operators “OR” and “AND” were used and Source Title (SRCTITLE) was used as a search field. The following formula was used in Scopus:

SRCTITLE (“International Dental Journal”) AND (LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012) OR LIMIT-TO (PUBYEAR, 2011))

Data analysis

After applying the search strategy, the data were downloaded in the .csv format from Scopus and then exported to a spreadsheet in Microsoft Excel. The date of data retrieval and analysis was April 13, 2022. For the analysis of the bibliographic indicators, the SciVal system (<https://www.scival.com/>) was used, which is a scientific production evaluation tool. The

following bibliometric indicators were analysed with this tool: number of publications, most productive institutions, most productive countries, type of collaboration (national, international, institutional, single authorship), most cited articles, and authors with the highest scholarly output. For each bibliometric indicator, they were described in summary tables through frequencies and percentages.

Ethics

No ethics committee approval was needed because the meta-data used in this study were obtained through the Scopus. In addition, the data are freely accessible in the evaluated database.

Results

A total of 630 articles published in IDJ by 1947 authors were obtained during the study period, which had a total of 7212 citations (11.4 citations per manuscript).

Marc Luiz Tennant was the author with the highest number of manuscripts (13 papers), whilst author Soraya Coelho Leal had the highest impact, with 55.4 citations per paper in 7 publications. Ira B. Lamster and Estie Kruger tied with 12 publications each (Table 1).

The University of Adelaide (Australia) was the institution with the highest scientific production (16 articles); however, it only had an impact of 7.6 citations per document. The Universidade de São Paulo (Brazil) also had 16 published articles and an average of 12.1 citations per paper. Four of the 10 institutions were Australian (Table 2).











Table 3 shows the type of collaboration with its bibliometric indicators. Most of the retrieved papers had international collaboration (187 papers; 32.8%), followed by national collaboration (146 papers; 25.6%) and institutional collaboration (187 papers; 32.8%). International collaboration had the highest impact, with 14.3 citations per paper. Papers belonging to the “single authorship” or “no collaboration” category had the lowest average number of publications and citations per paper (51 manuscripts with 9.9 citations per paper).

Table 4 shows the countries with the highest production in IDJ. The United States tops the list with the highest number of documents (100 documents and 1406 citation counts).

Table 1 – Top 10 authors with most publications in *International Dental Journal*.

Name	Scholarly output	Most recent publication	Citations	Citations per publication	Field-weighted citation impact	h-index
Tennant, Marc Luiz	13	2020	159	12.2	1.42	26
Lamster, Ira B.	12	2020	90	7.5	0.68	40
Kruger, Estie	12	2020	156	13	1.51	25
Bosma, Mary Lynn P.	11	2013	80	7.3	0.59	11
Lo, Edward Chi Man	10	2020	230	23	2.82	56
Frencken, Jo Elisabert F.M.	9	2018	411	45.7	2.25	41
Yamalik, Nermin	8	2015	111	13.9	0.99	20
Brennan, David Simon	8	2020	60	7.5	1.09	28
Chu, Chun Hung	8	2020	227	28.4	3.47	40
Leal, Soraya Coelho	7	2018	388	55.4	2.41	27

Table 2 – Top 10 productive colleges in *International Dental Journal*.

Institution	Country/region	Scholarly output	Authors	Citations per publication	Field-weighted citation impact
University of Adelaide		16	22	7.6	0.92
Universidade de São Paulo		16	60	12.1	1.23
University of Sydney		14	14	5.8	0.71
University of Western Australia		14	11	11.9	1.35
The University of Hong Kong		14	20	21.3	2.66
King's College London		14	13	10.1	1.11
Radboud University Nijmegen		13	17	37.6	1.96
National and Kapodistrian University of Athens		9	23	11.9	1.38
University of Melbourne		8	16	44.9	2.04
Sichuan University		8	33	12.9	1.1

However, the country with the highest impact was Germany, with a field-weighted citation impact of 1.48 for its 34 publications.

It was found that during the years 2011 to 2020, IDJ maintained a constant amount of high-impact publications because it was always in the Q1 and/or Q2 level. The lowest number of articles was published in 2015 (47 Q2 papers); however, in 2020, 71 Q1 manuscripts were published (Table 5).

Discussion

Recently, the COVID-19 pandemic has generated multiple research opportunities and an increase in scientific publications in different research areas around the world, and the dental area has been no exception.¹⁰ In this context, the aim

of the present study was to evaluate the scientific production, between 2011 and 2020, of a journal with a high impact on dentistry such as IDJ. Our study found 436 published papers and a total of 2579 citations.

The author with the highest impact in IDJ was Soraya Coelho Leal, with an average of 55.4 citations per publication. On the other hand, Marc Luiz Tennant was the author with the greatest number of manuscripts in this journal.

With respect to the most productive institutions, The University of Adelaide ranked first in both the number of publications and impact. This is consistent with another bibliometric analysis of coronavirus publications before the COVID-19 pandemic where this institution was amongst the top in productivity.^{11,12} In the field of dentistry, this institution leads in scientific publications related to the use of silver diamine fluoride.¹³

Table 3 – Production and impact according to type of collaboration in *International Dental Journal*.

Metric	Percentage (%)	Scholarly output	Citations	Citations per publication	Field-weighted citation impact
International collaboration	32.8%	187	2673	14.3	1.35
Only national collaboration	25.6%	146	1741	11.9	0.88
Only institutional collaboration	32.8%	187	2136	11.4	1.09
Single authorship (no collaboration)	8.9%	51	504	9.9	0.68

Table 4 – Top 10 productive countries in *International Dental Journal*.











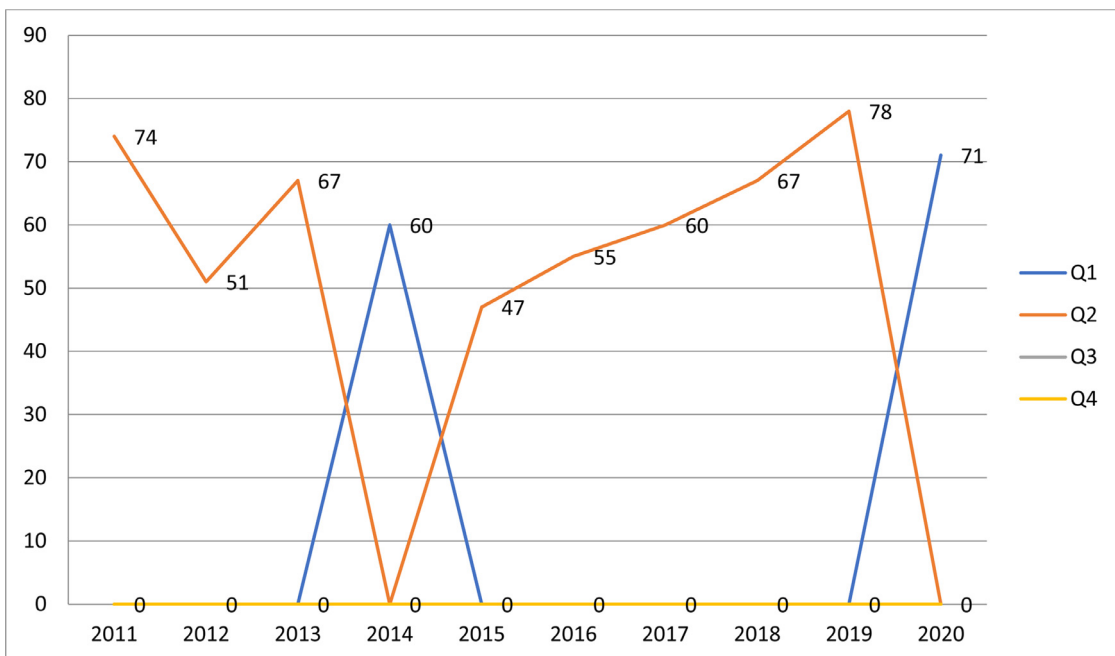
Country	Scholarly output	Views count	Field-weighted citation impact	Citation count
	100	2550	1.33	1406
	72	1862	1.11	1055
	62	1645	1.2	1072
	53	1579	1.34	913
	38	1069	1.2	613
	36	902	1.12	467
	34	754	1.48	513
	33	799	1.23	470
	26	707	1.6	635
	22	511	1.36	241

Table 5 – *International Dental Journal* publications by CiteScore quartile.



Regarding the type of collaboration of the studies, most articles and citations had international collaboration; this would indicate that IDJ has a global reach throughout the dental field. This finding is contrary to a study that indicated that at least for the COVID-19 and dental field, there has been a greater number of publications with national collaboration than international.¹⁴ This would indicate that IDJ can serve to encourage greater international exchange in research, allowing new research opportunities to be generated.

The United States (US) was the region with the highest number of publications and citations in this journal, followed by Australia and Brazil. This is in accordance with other previous publications that report that the US and Brazil are amongst the most productive countries in the domain of dentistry, either in general or in relation to a more current topic such as COVID-19.^{10,12–15} It should be noted that, in our results, China had lower productivity than the US, which concurs with a previous bibliometric study that reports that China has lower productivity than countries such as the US or Brazil.¹⁵ This situation is peculiar since in recent years most scientific publications worldwide have focused on COVID-19, and China leads the research on the latter topic.¹⁶ This indicates that although IDJ, in recent years, has maintained its publication norms despite the COVID-19 pandemic, it has yet to extend its influence over eastern regions.

Regarding the most highly cited articles published in this journal, the first of them identifies the history of minimal-intervention dentistry for the management of dental caries and presents evidence of carious lesion detection devices and their restoration.¹⁷ The most current paper amongst the 5 most highly cited is a review that provides the current evidence on the mechanisms of silver diamine fluoride for caries. This article reported such treatment with a bactericidal agent, inhibits demineralisation, and promotes remineralisation of enamel and dentin.¹⁸ This demonstrates the IDJ covers diverse aspects of dentistry, addressing impactful, contemporary topics including reviews and clinical research.

This study has some limitations. First, only the period 2011–2020 was analysed; however, performing an analysis of recent years allowed us to have a more current overview of the productivity of IDJ. Second, only the information provided by Scopus was used, which may not reflect the totality of IDJ publications. However, it should be kept in mind that, as IDJ is a journal indexed in Scopus, it is unlikely to present any publication that is not found in this database, and it should also be remembered that Scopus has very high-quality standards in its indexed articles.¹⁹ These factors ensure that the publications analysed in our study present a high methodological rigour.

Conclusions

IDJ is a high-impact journal with high-quality publications and international collaboration in the dental field. This allows it to have a high relevance in the citations of its articles and thus to be at the forefront of the most recent research.

Conflict of interest

None disclosed.

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