Bibliometric analysis of medical journals included in the Mexican Science and Technology Journals Classification System

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Abstract

Introduction: CONACYT's Classification System of Mexican Science and Technology Journals (SCRMICYT) includes the area of medicine and health sciences (M&HS). **Objective:** A bibliometric analysis of M&HS journals listed in SCRMICYT in 2018 was performed. **Method:** Twelve characteristics related to indexation in the Web of Science Core Collection (WoSCC), Scopus, and PubMed databases were analyzed. Indexed journals were analyzed on whether they had recent indexed publications (2017 and 2018). Indexed journals' 50 most-cited articles in WoSCC and Scopus were analyzed. **Results:** Of the 35 M&HS journals included in the 2018 SCRMICYT list, 31 (89 %) were indexed in Scopus (22 with indexed publications in 2017; 18 in 2018), 17 (49 %) in PubMed (10 with indexed publications in 2017 and 2018), and 12 (34 %) in WoSCC (12 with indexed publications in 2017; 8 in 2018). The 50 most-cited articles had been published only in 4 journals indexed in WoSCC and 5 in Scopus; 60 % were review articles. **Conclusions:** Approximately half the 2018 SCRMICYT M&HS journals lack publications indexed in 2018; this suggests that national and international relevance of these journals can be improved.

KEY WORDS: Mexico. Bibliometrics. Bibliographic databases. Serial publications.

Introduction

In scientific research, the publication of articles in scientific journals that have a peer review system represents a contribution to scientific knowledge that is on top of other forms of scientific production. The scientific journals of a country are an important tool for the diffusion and divulgation of science generated in the nation. In Mexico, the National Council of Science and Technology (CONACYT – *Consejo Nacional de Ciencia y Tecnología*) evaluates scientific journals through the Mexican Science and Technology Journals Classification System (SCRMICYT – *Sistema de Clasificación de Revistas Mexicanas de Ciencia y Tecnología*). The SCRMICYT is “a public policy instrument that, through selective registration and periodic evaluation of scientific journals published in electronic format in Mexico, seeks to raise their quality, visibility and

impact and, thus, encourage diffusion and divulgation of science and technology generated in the country”.¹ To join the SCRMICYT, the electronic versions of Mexican scientific journals (those with Mexican affiliation international standard serial number [ISSN]) are assessed by international specialists in scientific publishing. There are two ways for inclusion into the System: if the journal is indexed in the multidisciplinary international Web of Science (WoS) (Sciences Citation Index®, Social Sciences Citation Index® and Arts & Humanities Citation Index® collections) or Scopus databases and has citation indicators, it is immediately included; if the journal is not indexed in these databases, it must be subjected to a competition process to be admitted, and it is therefore assessed according to SCRMICYT specific criteria.¹

Bibliometric analysis is the use of statistical methods to analyze a body of literature.^{2,3} Bibliometric

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analysis includes identifying the databases where the scientific journals are indexed, as well as quantifying the number of publications or citations of journals and identifying their most cited articles; in addition, its results can be used to identify the recognition a journal has in the scientific community. Bibliometric analyses have been made in multiple medical topics and specialties,⁴⁻⁷ but an independent bibliometric analysis of SCRMICYT medicine and health sciences journals characteristics has not been performed. The purpose of this study was to perform a bibliometric analysis of journals in the area of medicine and health sciences of the SCRMICYT 2018 list.

Method

A bibliometric analysis of the journals included in the SCRMICYT 2018 area of medicine and health sciences (category III) was carried out, in accordance with the official list published by CONACYT National Consortium of Scientific and Technological Information Resources (CONRICYT – *Consortio Nacional de Recursos de Información Científica y Tecnológica*).^{8,9} From the official list, the SCRMICYT category (descending order of relevance: Q1, Q2, Q3, Q4, “international competence”, “national competence”, “in consolidation process” and “in development”)⁸ was obtained, as well as the impact factor (IF) and total number of citations at WoS Journal Citation Report and Scopus SCImago Journal & Country Rank (SJR).^{8,9}

The inclusion of journals in the area of medicine and health sciences from the SCRMICYT 2018 list in the WoS Core Collection (WoSCC, only indexes from 1980 to the present period), Scopus (all years) and PubMed databases (all years) was analyzed. From WoSCC and Scopus, the number of publications per journal, the indexing years, the number of citations of the 50 most cited articles per journal and total number of citations per journal were obtained (the latter was only available in WoSCC). The name of the journal was searched (two searches, with and without diacritical marks) in the “source title” (Scopus) and “publication name” (WoSCC) fields. WoSCC was used because it includes the databases used by SCRMICYT (Science Citation Index, Social Sciences Citation Index and Arts & Humanities Citations Index), but only considers those journals that are indexed cover-to-cover. In PubMed, the number of publications indexed per journal and their years of indexing were obtained.

Whether the journals indexed in the databases had recently-indexed publications (years 2017 and 2018) was analyzed. For each database, category Q1 to Q4 indexed journals (IP, indexed publication), journals with at least one indexed publication that would have been published after 2016 ($IP \geq 2017$) and journals with at least one 2018 publication (IP-2018) were quantified. For each database, the difference in proportions between having at least one indexed publication against having at least one indexed publication in 2017 (i.e., IP versus $IP \geq 2017$), and in 2018 (i.e., IP versus IP-2018) was calculated.

The correlation of the SCRMICYT category with the IF and with SJR was calculated (Pearson's r); the cases with missing data were not included in the analysis.

A sub-analysis of the characteristics of the 50 most cited SCRMICYT journals' articles included in Scopus and WoSCC was carried out, for which purpose the number of citations, journal of origin, first author, type of article (original article, review, others) and publication year were obtained.

The search in the databases was carried out on September 24, 2018. The ethics committee of the Unidad de Investigación en Enfermedades Crónico-De generativas reviewed and approved the research protocol, without there being any ethical consideration due to the nature of the studied information.

Results

Only 35 medicine and health sciences journals were included in the SCRMICYT 2018 list. Only Archives of Medical Research and Annals of Hepatology were classified in the categories of the highest academic recognition (Q1 and Q2, respectively). Most journals were category Q4 (60 %), and five journals (14 %) were included in the “international competence”, “national competence” and “on development” categories (Table 1).

The number and proportion of SCRMICYT indexed journals was 31 (89 %) in Scopus, 17 (49 %) in PubMed, and 12 (34 %) in WoSCC (Table 1). When only category Q1 to Q4 journals were considered, 30 (100 %) had indexed publications in Scopus, 17 (57 %) in PubMed and 12 (40 %) in WoSCC. Only eight journals (one category Q1, one Q2, five Q3, and one Q4) were indexed in all three databases; the areas of knowledge of these journals were basic and clinical research, public health, general medicine, general surgery and the cardiology, gastroenterology and

Table 1. 2018 SCRMICYT medicine and health sciences journals indexing characteristics in the Scopus, Web of Science Core Collection and PubMed databases

Journal	SCRMICYT				Scopus				PubMed				Web of Science Core Collection			
	SCRMICYT category	Impact factor	Citations	SJR	Ind.	Period (years)	Articles (n)	More cited article, citations (pub. year)	Ind.	Period (years)	Articles (n)	Ind.	Period (years)	Articles (n)	Total citations	Most cited article, citations (pub. year)
<i>Archives of Medical Research</i>	Q1	2.024	3175	1.009	Yes	1992-2018 [†] (27)	2 949	580 (2005)	Yes	1992-2018 [†] (27)	2 862	Yes	1999-2017 (19)	2512	34615	512 (2005)
<i>Annals of Hepatology</i>	Q2	1.576	1492	0.64	Yes	2002-2018 [†] (17)	1 527	185 (2009)	Yes	2002-2018 [†] (17)	1 447	Yes	2007-2017 (11)	1076	8632	163 (2009)
<i>Salud Pública de México</i>	Q3	1.039	1787	0.465	Yes	1961-2018 [†] (58)	4 977	233 (1998)	Yes	1961-2018 [†] (58)	4 662	Yes	2000-2018 [†] (19)	3145	16391	215 (1998)
<i>Archivos de Cardiología de México*</i>	Q3	ND	ND	0.193	Yes	1945-2018 [†] (74)	4 604	486 (1946)	Yes	1945-2018 [†] (74)	4 562	Yes	2015-2018 [†] (4)	245	78	5 (2015)
<i>Gaceta Médica de México</i>	Q3	0.342	426	0.175	Yes	1945-2018 [†] (72)	6 237	87 (1992)	Yes	1945-2018 [†] (72)	6 170	Yes	2007-2018 [†] (12)	1197	1457	31 (2008)
<i>Ginecología y Obstetricia de México</i>	Q3	ND	ND	0.154	Yes	1946-2018 [†] (73)	5 999	39 (2000)	Yes	1946-2016 (71)	5 611	No	---	---	---	---
<i>Medicina Interna de México</i>	Q3	ND	ND	0.113	Yes	1997-2018 [†] (21)	1 699	10 (2010)	No	---	---	No	---	---	---	---
<i>Revista de Gastroenterología de México</i>	Q3	ND	ND	0.336	Yes	1947-2018 [†] (49)	2 691	37 (1983, 2004)	Yes	1948-2018 [†] (47)	2629	Yes	2015-2018 [†] (4)	161	99	21 (2015)
<i>Revista de Investigación Clínica</i>	Q3	1.36	519	0.328	Yes	1949-2018 [†] (70)	3 806	84 (1995)	Yes	1949-2018 [†] (70)	3779	Yes	2000-2018 [†] (19)	3250	7202	82 (1995)
<i>Revista Médica del Instituto Mexicano del Seguro Social</i>	Q4	ND	ND	0.136	Yes	1951-2016 (35)	2 090	21 (2013)	Yes	2005-2018 [†] (14)	1678	No	---	---	---	---
<i>Acta Ortopédica Mexicana</i>	Q4	ND	ND	0.154	Yes	2007-2015 (9)	586	11 (2009x2, 2011)	Yes	2007-2018 [†] (12)	754	No	---	---	---	---

(Continues)

Table 1. 2018 SCRMICYT medicine and health sciences journals indexing characteristics in the Scopus, Web of Science Core Collection and PubMed databases (Continued)

Journal	SCRMICYT				Scopus				PubMed				Web of Science Core Collection			
	SCRMICYT category	Impact factor	Citations	SJR	Ind.	Period (years)	Articles (n)	More cited article, citations (pub. year)	Ind.	Period (years)	Articles (n)	Ind.	Period (years)	Articles (n)	Total citations	Most cited article, citations (pub. year)
<i>Acta Pediátrica de México</i>	Q4	ND	ND	0.103	Yes	2014-2018 [†] (5)	272	4 (2015)	No	—	—	Yes	2015-2018 [†] (4)	217	25	5 (2015)
<i>Archivos de Neurociencias</i>	Q4	ND	ND	0.111	Yes	1999-2018 [†] (20)	740	8 (2009, 2011×2)	No	—	—	No	—	—	—	—
<i>Boletín Médico del Hospital Infantil de México</i>	Q4	ND	ND	0.151	Yes	1946-2017 (51)	4 017	45 (1946)	No	—	—	Yes	2015-2017 (3)	186	128	7 (2015)
<i>Cirugía y Cirujanos</i>	Q4	0.427		0.17	Yes	1945-2018 [†] (54)	2 464	35 (2011)	Yes	1945-2018 [†] (43)	2280	Yes	2007-2017 (11)	1038	1095	21 (2012)
<i>Dermatología Cosmética, Médica y Quirúrgica</i>	Q4	ND	ND	0.115	Yes	2005-2017 (13)	600	7 (2007, 2008)	No	—	—	No	—	—	—	—
<i>Dermatología Revista Mexicana</i>	Q4	ND	ND	0.119	Yes	1972-2018 [†] (42)	1 792	24 (1975)	Yes	1961 (1)	1	Yes	—	—	—	—
<i>Revista Alergia México</i>	Q4	ND	ND	0.183	Yes	1965-2015 (51)	1 397	26 (2005)	Yes	1987-1991 (5)	97	Yes	—	—	—	—
<i>Revista Mexicana de Anestesiología</i>	Q4	ND	ND	0.139	Yes	1984-2018 [†] (35)	1 860	12 (1999)	No	—	—	No	—	—	—	—
<i>Revista Mexicana de Angiología</i>	Q4	ND	ND	0.104	Yes	1977-2018 [†] (13)	235	5 (2012)	No	—	—	No	—	—	—	—
<i>Revista Mexicana de Cardiología</i>	Q4	ND	ND	0.108	Yes	2008-2018 [†] (11)	262	6 (2008)	No	—	—	No	—	—	—	—
<i>Revista Mexicana de Neurociencia</i>	Q4	ND	ND	0.135	Yes	2008-2014 (7)	373	9 (2010)	No	—	—	Yes	2015-2018 [†] (4)	223	3	1 (2015, 2016 x 2)
<i>Revista Mexicana de Oftalmología</i>	Q4	ND	ND	0.109	Yes	1987-2017 (22)	1 160	10 (2005)	—	—	—	No	—	—	—	—
<i>Revista Mexicana de Pediatría</i>	Q4	ND	ND	0.1	Yes	1986-2018 [†] (16)	398	9 (2010)	No	—	—	No	—	—	—	—

(Continues)

Table 1. 2018 SCRMICYT medicine and health sciences journals indexing characteristics in the Scopus, Web of Science Core Collection and PubMed databases (Continued)

Journal	SCRMICYT				Scopus				PubMed				Web of Science Core Collection			
	SCRMICYT category	Impact factor	Citations	SJR	Ind.	Period (years)	Articles (n)	More cited article, citations (pub. year)	Ind.	Period (years)	Articles (n)	Ind.	Period (years)	Articles (n)	Total citations	Most cited article, citations (pub. year)
<i>Revista Mexicana de Urología</i>	Q4	ND	ND	0.101	Yes	1963-2016 (6)	335	2 (1964, 2015, 2016)	Yes	1963-1965 (3)	100	No	—	—	—	—
<i>Salud Mental</i>	Q4	0.5	485	0.173	Yes	1995-2018 [†] (24)	1 632	178 (2003)	No	—	—	Yes	—	—	—	—
<i>Neumología y Cirugía de Tórax</i>	Q4	ND	ND	0.123	Yes	1962-1965 (4)	128	3 (1963)	Yes	1962-1965 (4)	128	No	1999-2018 [†] (20)	1718	4328	184 (2003x2)
<i>Perinatología y Reproducción Humana</i>	Q4	ND	ND		Yes	1988-2015 (4)	19	2 (1989)	Yes	1988-1990 (3)	18	No	—	—	—	—
<i>Revista Mexicana de Enfermería Cardiológica</i>	Q4	ND	ND		Yes	2008-2017 (10)	156	4 (2011)	No	—	—	No	—	—	—	—
<i>Revista Mexicana de Ciencias Farmacéuticas</i>	Q4	ND	ND		Yes	1997-2015 (19)	592	15 (2009)	Yes	2011 (1)	1	No	—	—	—	—
<i>Investigación en Educación Médica</i>	IC	ND	ND	ND	No	—	—	—	No	—	—	No	—	—	—	—
<i>Revista Mexicana de Trastornos Alimentarios</i>	IC	ND	ND	ND	Yes	2011-2017 (5)	76	7 (2014)	No	—	—	No	—	—	—	—
<i>Enfermería Universitaria</i>	NC	ND	ND	ND	No	—	—	—	No	—	—	No	—	—	—	—
<i>Revista Biomédica</i>	OD	ND	ND	ND	No	—	—	—	No	—	—	No	—	—	—	—
<i>Revista Odontológica Mexicana</i>	OD	ND	ND	ND	No	—	—	—	No	—	—	No	—	—	—	—

*Includes the Archivos del Instituto de Cardiología de México publications. [†]Indexing includes articles published in 2018.
Ind.: indexing status in the database; ND: no data available; SJR: Scimago Journal & Country Rank; IC: International competence; NC: national competence; OD: on development.

hepatology subspecialties. Most journals with SCRM-CYT categories Q1 to Q4 covering medical subspecialties were in Scopus and in one of the other two databases. However, the *Medicina Interna de México*, *Archivos de Neurociencias*, *Dermatología Cosmética*, *Medica y Quirúrgica*, *Revista Mexicana de Anestesiología*, *Revista Mexicana de Angiología*, *Revista Mexicana de Cardiología*, *Revista Mexicana de Oftalmología* and *Revista Mexicana de Pediatría* journals were only found in Scopus. An error was found in the SCRM-CYT category assigned to *Revista Mexicana de Trastornos Alimentarios*, since it was categorized as “international competence” despite being indexed in Scopus and having citation indicators for the 2011-2017 period.

Table 2 shows the statistics for journal indexing in the different databases. The difference in the proportion of IP versus IP $\geq$ 2017 was 27 % in Scopus, 24 % in PubMed and 0 in WoSCC. The differences for IP versus IP-2018 were 40 % in Scopus, 24 % in PubMed and 13 % in WoSCC. The most extreme case of non-current indexing was that of the *Neumología y Cirugía de Tórax* journal, which was only indexed in Scopus and PubMed in the 1962-1965 period.

The IF was only reported in seven (20 %) of the SCRM-CYT journals, while SJR was in 30 (86 %) journals. The correlation between IF and the SCRM-CYT category (r [5] = 0.88, $p < 0.01$) and SJR and the SCRM-CYT category (r [28] = 0.89, $p < 0.001$) showed that the largest the IF and SJR, the highest the SCRM-CYT category.

Regarding SCRM-CYT journals 50 most cited articles in the databases, Scopus showed more citations than WoSCC (Table 3). The databases showed high consistency, with 42 (84 %) articles included in both listings. Ten of these 42 articles had the same position in both lists and most of the rest had similar positions: 30 (Scopus) and 29 (WoSCC) of these articles were review articles and had more citations than the original articles. The two most cited articles were the same in both lists. The review article “Resistance to antibiotics: are we in the post-antibiotic era?”, written by Alanis in 2005 and published in *Archives of Medical Research*,¹⁰ was the most cited article, with 580 and 512 citations in Scopus and WoSCC, respectively. The second most cited article, with 551 and 507 citations in Scopus and WoSCC, respectively, was “The global emergence/resurgence of arboviral diseases as public health problems”, by Gubler et al., published in *Archives of Medical Research* in 2002.¹¹ Both these articles were the only ones with more than 500 citations.

Table 2. Indexing in the databases of the 30 SCRM-CYT 2018 category Q1 to Q4 medicine and health sciences journals

Database	IP: Indexed journals		IP $\geq$ 2017: Journals with at least one publication after 2016		IP-2018: Journals with at least one 2018 indexed publication	
	n	%*	n	%*	n	%*
Scopus	30	100	22	73	18	60
PubMed	17	57	10	33	10	33
WoSCC	12	40	12	40	8	27

*Percentages rounded to the nearest integer.

WoSCC: Web of Science Core Collection.

Table 3. Characteristics of the 50 most cited articles of SCRM-CYT 2018 medical and health sciences journals

	Scopus (n)	WoSCC (n)
Number of citations	8 618	7 388
Most cited article	580	512
Article in position 13	185	173
Article in position 25	128	116
Article in position 38	111	93
Article in position 50	100	84
Journal		
Archives of Medical Research	36	36
Annals of Hepatology	7	5
Salud Pública de México	5	6
Salud Mental	1	3
Archivos de Instituto de Cardiología de México	1	0
Type of Article		
Review	30	29
Original article	19	20
Conference article	1	1
Publication Period		
Prior to 1990	1	0
1991-2000	6	7
2001-2010	39	38
2011-2018	4	5

WoSCC: Web of Science Core Collection.

The third most cited article in Scopus, indexed as an original article with 486 citations and entitled “The mathematical formulation of the problem of conduction of impulses in a network of connected excitable elements, specifically in cardiac muscle”, was published in 1946 in *Archivos del Instituto de Cardiología de México*¹² (today *Archivos de Cardiología de México*), by Wiener et al.; this article did not appear on WoSCC due to the database inclusion period (1980-2018). The number and proportion of articles with $\geq$ 300 citations, 200-299 citations, 100-199 citations and $<$ 100 citations was three (6 %), seven (14 %), 40 (80 %) and 0 in Scopus, and two (4 %), six (12 %), 27 (54 %) and

15 (30 %) in WoSCC, respectively (data not shown, available upon request). The journal with more articles included in the 50 most cited articles was Archives of Medical Research (36 [72 %] articles per database); review articles accounted for 64 % (Scopus) and 66 % (WoSCC) of its articles. The next two journals with more articles in the 50 most cited were Annals of Hepatology and *Salud Pública de México*.

When analyzing the most cited article of each one of the SCRMICYT journals, only seven journals (23 %) in Scopus and five (17 %) in WoSCC were found to have more than 50 citations in their most cited article.

Discussion

This article presents a bibliometric analysis of the characteristics of journals in the area of medicine and health sciences included in the 2018 SCRMICYT list. The results inform on indexing, citations and relevance of Mexican scientific journals from that area, as well as the characteristics of the most cited articles of these journals.

This analysis shows three main findings:

- First, Scopus was found to index more SCRMICYT articles and journals of the area of medicine and health sciences than PubMed and WoSCC (and PubMed more than WoSCC); in addition, Scopus reported more citations for all analyzed articles than WoSCC. These findings agree with previous studies, which have shown that Scopus and WoS have a high correlation in the number of articles, and in the number of citations by country, that bibliometric analyses can be performed in all three databases and that Scopus has broader coverage than WoS and PubMed.¹³⁻¹⁷

The SCRMICYT aims to raise visibility and impact of scientific journals published in the country.¹ Indexing a journal in an international multidisciplinary database such as WoS or Scopus influences its dissemination and impact.¹⁸ This indexing is the characteristic that positions a Mexican scientific journal in SCRMICYT highest impact categories (Q1 to Q4);¹ however, when analyzing whether the Q1 to Q4 category journals had recently indexed publications (years 2017 and 2018), the indexing proportion decreased between 13 and 40 %. That is, SCRMICYT's practice of categorizing the journals within its most important categories just for having an article indexed in Scopus or WoS, regardless of whether they are recently indexed publications does not reflect journals' real impact and visibility (for example, the last publication indexed from a Q4 journal was in 1965).

- The second finding was that the SCRMICYT category has a high correlation with IF and SJR, although the SCRMICYT did not report the IF for all journals. This shows consistency between the two values that are commonly used to reflect the relevance of journals and the SCRMICYT categorization. It should be noted that SCRMICYT categorization errors were detected.
- The third finding corresponds to journal citations. Three journals dominated in the 50 most cited articles (Archives of Medical Research, *which is a scientific journal of the Instituto Mexicano del Seguro Social*; Annals of Hepatology, *which is the scientific journal of the Asociación Mexicana de Hepatología, Asociación Latinoamericana para el Estudio del Hígado and of the Asociación Canadiense para el Estudio del Hígado*, and *Salud Pública de México*, of the National Institute Public Health); most these articles were review articles published in 2001-2010. Review articles are expected to have more citations than original articles.² In addition, in less than one quarter of the analyzed journals, the most cited article had more than 50 citations. This reflects the opportunities for improvement of most of these SCRMICYT medicine and health sciences journals.

The strengths of this study include that current information from the international databases Scopus, WoSCC and PubMed was used, which are three of the more reliable databases for bibliometric analyses.^{15-17,19} Multiple aspects about the relevance of the country's medical scientific journals were analyzed, including their indexation in international databases, years of indexation, number of indexed articles, number of citations, the analysis of the most cited articles during the periods with available records, and the analysis of the each journal's most cited articles. However, there are limitations that should be considered. The WoSCC database was used, which only includes the 1980-to-present period, although this database was selected for being the most selective, since it only registers journals of the highest quality.^{15,20} In addition, it was not possible to obtain the number of citations per journal in Scopus, and the impact factor was not available for all the journals reported by the SCRMICYT.

Conclusions

The SCRMICYT represents an effort to promote quality, visibility and national and international impact

of the medicine and health science journals of the country. However, a significant percentage of journals included in the SCRM CYT 2018 list have no current indexing even in the analyzed international databases, and most journals on the list have little international impact and few citations. It is important to maintain and strengthen initiatives like this and create others that allow addressing different areas of opportunity to promote research in medicine and health sciences in Mexico.

References

1. Sistema de Clasificación de Revistas Mexicanas de Ciencia y Tecnología [sitio web]. México: Conacyt; 2018.
2. Bibliometrics and Citation Analysis [sitio web]. EE. UU.: University of Wisconsin-Madison Libraries; 2018.
3. Ellegaard O, Wallin JA. The bibliometric analysis of scholarly production: how great is the impact? *Scientometrics*. 2015;105:1809-1831.
4. Chang MT, Schwam ZG, Schutt CA, Kamen EM, Paskhover B. The 50 most cited articles in facial plastic surgery. *Aesthetic Plast Surg*. 2017; 41:1202-1207.
5. Tang X, Gong W, Yuan F, Li R, Han X, Huang S, et al. Top-cited articles in digestive system disease from 1950 to 2013. *J Gastroenterol Hepatol*. 2016;31:107-111.
6. Tao T, Zhao X, Lou J, Bo L, Wang F, Li J, et al. The top cited clinical research articles on sepsis: a bibliometric analysis. *Crit Care*. 2012;16:R110.
7. Gu W, Yuan Y, Yang H, Qi G, Jin X, Yan J. A bibliometric analysis of the 100 most influential papers on COPD. *Int J Chron Obstruct Pulmon Dis*. 2015;10:667-676.
8. Consejo Nacional de Ciencia y Tecnología [sitio web]. Sistema de Clasificación de Revistas Mexicanas de Ciencia y Tecnología Revistas de Medicina y Ciencias de la Salud. México: Conacyt; 2018.
9. Consorcio Nacional de Recursos de Información Científica y Tecnológica [sitio web]. Listado de revistas del Sistema de Clasificación de Revistas Mexicanas de Ciencia y Tecnología. México: Conacyt; 2018.
10. Alanis AJ. Resistance to antibiotics: are we in the post-antibiotic era? *Arch Med Res*. 2005;36:697-705.
11. Gluber DJ. The global emergence/resurgence of arboviral diseases as public health problems. *Arch Med Res*. 2002;33:330-342.
12. Wiener N, Rosenblueth A. The mathematical formulation of the problem of conduction of impulses in a network of connected excitable elements, specifically in cardiac muscle. *Arch Inst Cardiol Mex*. 1946;16:205-265.
13. Archambault É, Campbell D, Gingras Y, Larivière V. Comparing bibliometric statistics obtained from the Web of Science and Scopus. *J Assoc Inf Sci Technol*. 2009;60:1320-1326.
14. Mongeon P, Paul-Hus A. The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics*. 2016;106:213-228.
15. Ellegaard O, Wallin JA. The bibliometric analysis of scholarly production: how great is the impact? *Scientometrics*. 2015;105:1809-1831.
16. Kokol P, Vošner HB. Discrepancies among Scopus, Web of Science, and PubMed coverage of funding information in medical journal articles. *J Med Libr Assoc*. 2018;106:81-86.
17. Falagas ME, Pitsouni EI, Malietzis GA, Pappas G. Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *FASEB J*. 2008;22:338-42.
18. Akhigbe RE. Scientific journals: indexation and impact factor. *Lung India*. 2012;29:300-301.
19. Michigan State University? [sitio web]. So which is better: PubMed, Web of Science, or Google Scholar. EE. UU.: Michigan State University; 2019.
20. Clarivate Analytics [sitio web]. Web of Science Core Collection. EE. UU.: Clarivate Analytics; 2019.