ORIGINAL ARTICLE

CITATION ANALYSIS AND TRENDS IN REVIEW ARTICLES IN DENTISTRY

FRANCISCO WILKER MUSTAFA GOMES MUNIZ, DDS, MSc[a], ROGER KELLER CELESTE, DDS, MSc, PhD[b], HARRY JUAN RIVERA OBALLE, DDS, MSc, PhD[a], AND CASSIANO KUCHENBECKER RÖSING, DDS, MSc, PhD[a]

[a]Department of Periodontology, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil
[b]Department of Preventive and Social Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil

CORRESPONDING AUTHOR:
Roger Keller Celeste, Department of Preventive and Social Dentistry, Federal University of Rio Grande do Sul, Rua Ramiro Barcelos 2492, 3rd floor, Porto Alegre, Rio Grande do Sul, Brazil 90035-003.
E-mail: roger.keller@ufrgs.br

KEYWORDS
Bibliometrics, Reviews, Dentistry, Citation, Trends

Source of funding: This study is self-funded.
Conflict of interest: Roger Keller Celeste and Cassiano Kuchenbecker Rösing hold a Productivity-quality (PQ) fellowship from the Brazilian Science and Technology Council (CNPq). Other authors have no conflicts of interest to disclose.

Received 1 August 2017; revised 18 August 2017; accepted 19 August 2017

J Evid Base Dent Pract 2018: [110-118]
1532-3382/$36.00

doi: http://dx.doi.org/10.1016/j.jebdp.2017.08.003

ABSTRACT

Objective
This study aimed to describe the trends in dentistry article reviews as well as to compare citation patterns between systematic and narrative reviews.

Methods
A search strategy was developed, in Scopus database, in order to identify all narrative and systematic reviews published between 2000 and 2015. Original research studies, letters to the editor, editorials, book chapters, and case reports were excluded. From the list of studies available, 30 reviews per year were randomly chosen. The review type, year of publication, number of authors, country of the first author, open access, language, main topic of interest, journal's H index, number of references, and number of citations were extracted by 2 researchers. The number of citations was extracted from the Scopus database. Multivariable regression analysis was used in order to detect the association between citation rate and the independent variables.

Results
Overall, 118 and 362 systematic and narrative reviews were included in this study. Throughout the years, the number of systematic reviews has increased from 5.8% to 53.3%. However, the mean number of citations has significantly decreased, and this is affected by the review's year of publication. A trend for lower citation in systematic reviews (Relative risk [RR]: 0.79; 95% confidence interval: 0.75-0.84) has been demonstrated; however, the number of citations of narrative reviews has been increasing over the years (RR: 1.14; 95% confidence interval: 1.08-1.21).

Conclusion
From 2000 to 2015, the number of systematic reviews increased substantially. On the other hand, a trend for lower citations of these studies has been observed that is affected over time.

INTRODUCTION

Publishing is an important step in order to spread research findings in the scientific community. Furthermore, the number of citations of an article may reflect the dissemination and popularity of its results among other researchers. Quantitative measures of citations are related to quality and impact of an article.[1] It is well established that the high journal prestige, publications in English, and review articles are associated with a higher number of citations.[2,3] In addition,

the number of authors and country of publication can also help dissemination among peers, therefore influencing the number of citations.

In dentistry, few studies have assessed citation patterns and have mainly focused in specific subareas. In endodontics, for instance, the most cited articles are all published in English,[4] and low citation is attributed to case report studies in the oral and maxillofacial surgery field.[5] On the other hand, case series and cohort studies are the most cited methodological studies in implant dentistry.[6]

Systematic reviews are considered the highest level of scientific evidence; however, they have not appeared very often among the list of most cited articles.[4,6,7] Indeed, narrative reviews were ranked higher among top cited articles, and this may reveal that authors frequently use articles that bring expert opinions about future research or yet articles describing theories and specific hypotheses, which may be the case of narrative reviews. On the other hand, a more pragmatic explanation is that narrative reviews have been more frequently published, especially among older articles.[8] It could be hypothesized that systematic reviews would have higher mean citations and may become more frequently published over time. Nonetheless, to the best of our knowledge, those hypotheses have not been evaluated in the dental literature or in other fields. Therefore, the objectives of this study were to describe trends in dentistry review articles and compare citation patterns between systematic and narrative reviews. The null hypothesis under study is that there is no significant difference between the citation rates between narrative and systematic reviews.

MATERIAL AND METHODS

Data Sources and Design

In this study, only systematic and narrative reviews in dentistry were retrieved and included in data analyses. Original research studies, letters to the editor, editorials, and book chapters were excluded. Additionally, case reports were excluded, even if they were accompanied by a literature review. The following search strategy was performed on Scopus database in order to identify only the studies published between 2000 and 2015:

((TITLE-ABS-KEY(review*) AND SUBJAREA (DENT)) AND NOT SUBJAREA(MULT OR AGRI OR BIOC OR VETE OR CENG OR CHEM OR COMP OR EART OR ENER OR ENGI OR ENVI OR MATE OR MATH OR PHYS OR IMMU OR NEUR OR PHAR OR MEDI OR NURS OR HEAL)) AND (LIMIT-TO (PUBYEAR,2015) OR LIMIT-TO (PUBYEAR,2014) OR LIMIT-TO (PUBYEAR,2013) OR LIMIT-TO (PUBYEAR,2012) OR LIMIT-TO (PUBYEAR,2011) OR LIMIT-TO (PUBYEAR,2010) OR LIMIT-TO (PUBYEAR,2009) OR LIMIT-TO (PUBYEAR,2008) OR LIMIT-TO (PUBYEAR,2007) OR LIMIT-TO (PUBYEAR,2006) OR LIMIT-TO (PUBYEAR,2005) OR LIMIT-TO (PUBYEAR,2004) OR LIMIT-TO (PUBYEAR,2003) OR LIMIT-TO (PUBYEAR,2002) OR LIMIT-TO (PUBYEAR,2001) OR LIMIT-TO (PUBYEAR,2000))

The diagnostic accuracy (sensitivity and specificity) of this search strategy was determined in a sample of a specific journal and year (*Journal of Clinical Periodontology*, 2005). High sensitivity (0.97) and specificity (1.0) were demonstrated.

Randomization Process and Studies Selection

From this search strategy, 12,341 studies were available for eligibility in the elected years in dentistry. Using the command "sort on relevance" on Scopus database, these studies were numerically identified from 1 to 12,341. Then, a stratified randomization by the year of publication was performed by one of the researchers (F.W.M.G.M.), using random numbers obtained from the software R version 3.3, to identify a total of 30 systematic or narrative reviews per year.

Two researchers (F.W.M.G.M. and H.J.R.O.) have independently classified the study type as "systematic review," "narrative review," or "other studies." Those authors extensively discussed the study type classification until an agreement was achieved. When a study was classified as "other studies," a new randomization process, also stratified by year, was performed until 30 systematic or narrative reviews per year were included in the present study.

Independent Variable and Predictors

The dependent variable—the number of citations per article—was automatically extracted from Scopus dataset on April 6, 2017. Our main exploratory variable was the type of review article (systematic review or narrative review). In addition, 8 other covariates were collected for each study as follows: the year of publication, authors' names (from which the number of authors was derived), country of the first author, type of access (open access: yes or no), language of publication (that was categorized as only English or other languages), main topic of interest was classified after reading titles and abstracts (basic/lab sciences, cariology, dental materials, endodontics, gerodontology, implantology, operative dentistry, oral microbiology, oral and maxillofacial surgery, oral pain, oral pathology, orthodontics, pediatric dentistry, periodontology, prosthodontics, public health, or other), journal's H index, and number of references. The journal's H index was extracted from the Scimago Journal & Country Rank Web site (www.scimagojr.com). These variables were independently extracted by 2 researchers (F.W.M.W.G. and H.J.R.O.). Each variable was discussed extensively until an agreement was possible.

Statistical Analysis

Mean citations were presented in tables with standard deviation for descriptive purposes as well as percentage of systematic reviews among each category of covariates. Bivariate analyses were conducted in order to test for differences among categories of covariates. The chi-square test was used for categorical variables, and Mann–Whitney or Kruskal–Wallis test was used to compare differences in ranking of citations.

The number of citations was highly skewed with the presence of overdispersion 53 times higher than expected for a Poisson distribution (likelihood ratio test of alpha $P < .0001$). Therefore, negative binomial regression was used to model predictors of mean citation rates. Interaction between the types of review was tested with all covariates. Linear regression was used in order to estimate absolute difference in number of citations between systematic and narrative reviews. However, due to the asymptotic nature of the distributions, confidence intervals (CIs) were calculated based on bootstrap with 500 repetitions. All analyses were carried out in Stata 13.1.

RESULTS

This study included 118 and 362 systematic and narrative reviews, respectively. Totally, 714 studies were retrieved, and the main reasons for exclusion are expressed in Figure 1. Table 1 shows the main characteristics and percentage of systematic reviews, for each variable, in the selected studies. Overall, a significantly higher number of systematic reviews was found in European countries (other than the United Kingdom and Ireland), periodontology/implantology themes, with the journal's H-index >100, with the number of references between 26 and 50, and more than 5 authors ($P < .01$). Throughout the year, the

Figure 1. Flowchart of the included studies.

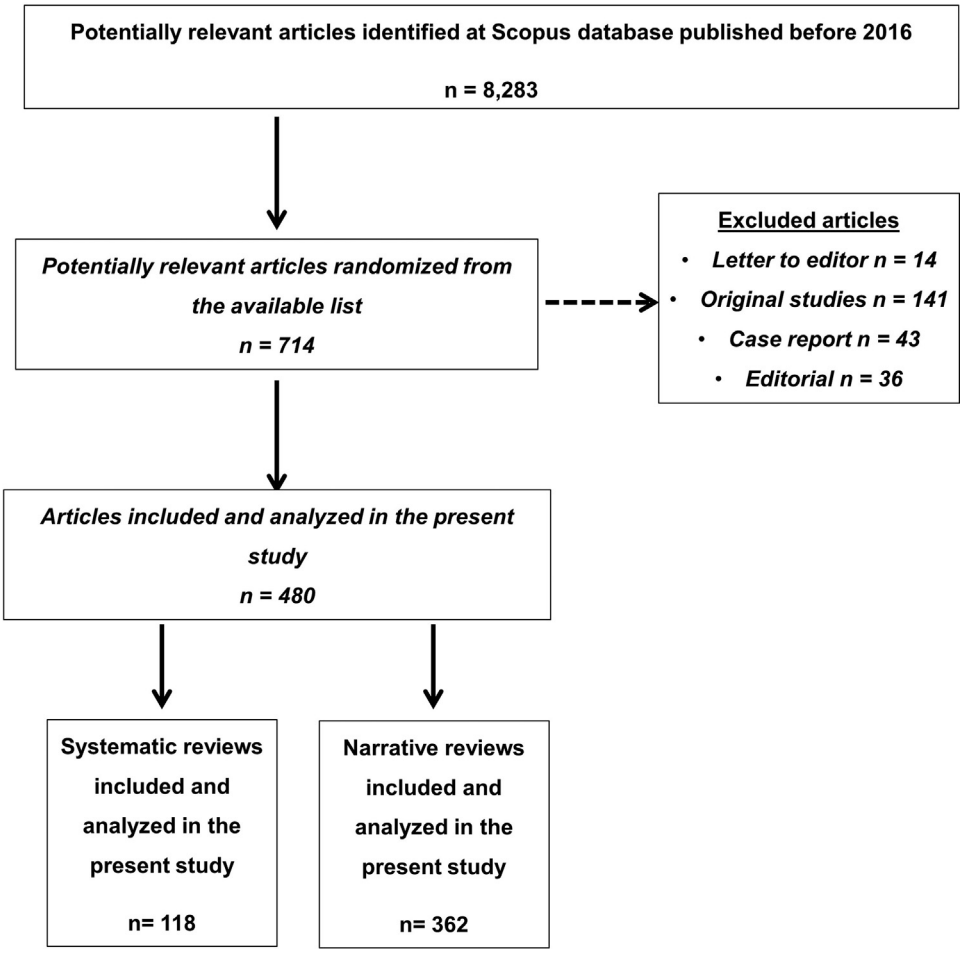

Table 1. Frequency of published articles and percentage of systematic reviews (SRs) by article categories.

Variables	N	%	% of SR	*P* value[a]
Total	480	100		
Country of publication of the first author				
Oceania	32	6.7	12.5	<.01
Other European	113	23.5	51.3	
Other countries	22	4.6	36.4	
BRICS	62	12.9	35.5	
USA/Canada	203	42.3	8.9	
UK/Ireland	48	10.0	16.7	
Main thematic of the article				
Basic/lab sciences	87	18.1	5.8	<.01
Other clinical sciences	240	50.0	23.3	
Periodontology/implantology	134	27.9	41.0	
Dental Public Health	19	4.0	10.5	
Year of publication				
2000-2003	120	25.0	5.8	<.01
2004-2007	120	25.0	10.0	
2008-2011	120	25.0	29.2	
2012-2015	120	25.0	53.3	
Language of the article				
Non-English/dual	24	5.0	16.7	.36
Only English	456	95.0	25.0	
Journal H-index				
0-25	67	14.0	22.4	<.01
26-50	173	36.0	7.5	
51-75	80	16.7	22.5	
76-100	84	17.5	25.0	
>100	75	15.8	66.1	
Open access?				
No	373	77.7	25.2	.56
Yes	107	22.3	22.4	
Number of references				
0-25	99	20.8	9.1	<.01
26-50	140	29.2	32.9	
51-75	107	22.3	30.8	
76-100	59	12.4	30.5	
>100	75	15.6	16.0	
Number of authors				
1 author	109	22.7	0.9	<.01
2-5 authors	328	68.3	29.3	
>5 authors	43	9.0	48.8	

[a] Chi-squared test.

number of systematic reviews increased from 5.8% (between 2000 and 2003) to 53.3% (between 2012 and 2015), and this difference is statistically significant ($P < .01$). On the other hand, in comparison to narrative reviews, no statistically significant difference was demonstrated for the number of systematic reviews in the following variables: open access and the language of the articles ($P > .05$).

Table 2 shows the overall mean citation of all the narrative and systematic reviews included in the present study. A significantly higher mean citation was demonstrated in studies with periodontology/implantology themes and in studies published in the earlier 2000s in all review types ($P < .05$). On the other hand, the type of access did not result in a significant difference in the mean citation number in all review types ($P > .05$).

Table 2. Mean citation and standard deviation (± SD) among systematic reviews (SRs) and narrative reviews (NRs) according to article categories.

Variables	Overall	±SD	*P* value[a]	SR	±SD	*P*-value[a]	NR	± SD	*P* value[a]
Total	30.0	43.7		36.9	51.9		27.7	40.6	
Country of publication of the first author									
Oceania	34.0	39.1	<.01	43.5	66.9	0.33	32.7	35.2	<.01
Other European	39.6	43.7		39.4	47.7		39.9	39.5	
Other countries	23.2	26.3		16.6	21.6		27.0	28.7	
BRICS	18.9	32.1		27.0	42.2		14.4	24.4	
USA/Canada	28.2	48.4		44.9	73.4		26.6	45.2	
UK/Ireland	29.3	42.5		45.1	67.8		26.2	35.9	
Main thematic of the article									
Basic/lab sciences	33.4	51.0	<.01	14.8	11.3	0.02	34.5	52.3	<.01
Other clinical sciences	22.6	32.1		30.8	43.9		20.0	27.2	
Perio/implants	44.4	54.2		46.3	60.4		43.1	49.9	
Dental Public Health	5.4	6.8		4.0	1.4		5.5	7.2	
Year of publication									
2000-2003	39.9	48.2	<.01	92.0	110.7	<0.01	36.7	40.3	<.01
2004-2007	38.6	57.5		77.4	77.1		34.3	53.7	
2008-2011	28.8	35.3		52.1	44.7		19.2	25.2	
2012-2015	12.6	18.6		15.0	21.3		9.8	14.7	
Language of the article									
Non-English/dual	5.8	15.1	<.01	16.3	32.5	0.07	3.7	9.0	<.01
Only English	31.2	44.4		37.6	52.4		29.1	41.2	
Journal H-index									
0-25	3.1	4.6	<.01	2.8	3.7	<0.01	3.2	4.9	<.01
26-50	16.5	22.3		22.2	40.1		16.0	20.4	
51-75	36.1	48.0		36.4	68.8		36.1	40.8	

(*continued*)

Table 2. (Continued)

Variables	Overall	±SD	*P* value[a]	SR	±SD	*P*-value[a]	NR	± SD	*P* value[a]
76-100	51.4	54.0		45.9	53.1		53.3	54.5	
>100	54.0	56.5		47.2	51.2		67.9	65.0	
Open access?									
No	31.3	46.7	.99	39.3	55.2	0.19	28.7	43.3	.32
Yes	25.2	30.9		27.8	35.7		24.4	29.5	
Number of references									
0-25	9.7	21.8	<.01	7.4	7.1	<0.01	9.9	22.8	<.01
26-50	20.3	32.4		30.3	50.0		15.4	16.8	
51-75	31.9	48.5		37.3	57.0		29.6	44.5	
76-100	43.4	39.8		60.0	47.4		36.1	34.1	
>100	61.4	57.4		48.8	59.4		63.7	57.2	
Number of authors									
1 author	19.2	26.9	<.01	33.0	0.0	0.50	19.1	26.9	<.01
2-5 authors	32.9	46.5		39.5	55.2		30.1	42.2	
>5 authors	35.0	52.2		25.2	33.0		44.3	64.9	

[a] Kruskal–Wallis or Mann–Whitney test for variables with multiple or two categories, respectively.

Table 3 shows the adjusted mean citation rate according to the study characteristics. In the year 2000, the mean adjusted difference between systematic and narrative reviews was 50.1 citations (95% CI = +0.77 to +99.5) more for systematic reviews, whereas in the year 2015, the difference was −12.5 (95% CI = −25.7 to +0.7), meaning that systematic reviews presented a predicted value of 12.5 fewer citations. It was also demonstrated that studies with basic/lab sciences and periodontology/implantology themes presented a significantly higher mean citation rate than Dental Public Health (DPH) studies ($P < .05$). Table 4 summarizes the main finding of present study, stating both pros and cons.

DISCUSSION

This study aimed to analyze the trend in review articles in dentistry as well as to compare the citation patterns between narrative and systematic reviews. The number of systematic reviews has substantially increased throughout the years; meanwhile, the adjusted number of citations granted to systematic reviews has declined notably in comparison to narrative reviews. It was confirmed that many other factors may predict the probability of receiving more citations. Importantly, the effect of the main theme of the article, of which studies in the periodontology/implantology themes received higher number of citations, was the highlight.

Systematic reviews and meta-analyses are useful study designs, as they may guide clinical practice and health policies. These types of studies are very attractive to perform, mainly due to their low cost, power to suggest the pathways for new investigations,[9] and the higher chances to be cited in comparison to other study designs.[10,11] It is also reported that before starting a new study, the researchers must assess the literature systematically.[12] Additionally, when the literature is assessed in a nonsystematic approach, the

Table 3. Adjusted mean citation rate (Relative risk [RR] and 95% CI) of review articles from negative binomial regression according to article characteristics.

Variables	Relative risk [RR] (95% CI)
Type of review by year	
Difference at year 2000	
Narrative review	1
Systematic review	4.24 (2.23-8.06)
Annual decrease in difference (systematic review by each year)	0.87 (0.82-0.92)
Difference at year 2015	
Narrative review	1
Systematic review	0.56 (0.37-0.86)
Country of publication of the first author	
Other European	1
Oceania	0.91 (0.62-1.34)
Other countries	0.65 (0.42-1.00)
BRICS	0.74 (0.54-1.02)
USA/Canada	0.63 (0.49-0.82)
UK/Ireland	0.74 (0.53-1.05)
Main thematic of the article	
Dental Public Health	1
Basic/lab sciences	2.24 (1.32-3.79)
Other clinical sciences	1.60 (0.98-2.63)
Perio/implants	2.13 (1.27-3.57)
Language of the article	
Non-English/dual	1
Only English	5.94 (3.46-10.23)
Journal H-index	
0-25	1
26-50	2.60 (1.86-3.65)
51-75	4.66 (3.20-6.78)
76-100	5.34 (3.63-7.87)
>100	6.47 (4.37-9.57)
Open access?	
No	1
Yes	1.36 (1.08-1.71)
Number of references	
0-25	1
26-50	2.14 (1.63-2.80)
51-75	2.91 (2.20-3.85)
76-100	3.44 (2.50-4.75)
>100	4.22 (3.10-5.74)
Number of authors	
1 author	1
2-5 authors	1.26 (1.01-1.58)
>5 authors	1.77 (1.24-2.53)

CI, confidence interval.

synthesis of information may be inaccurate or suboptimal[13] and may present researcher bias in the qualitative analyses.[9] Other disadvantages are also associated with nonsystematic reviews, such as financial competing interest and favorable conclusions.[14] However, the literature reports that these study designs answer different questions and should be complementary in biomedical science.[9,15]

Table 4. Summary of the present study main findings, stating the pros and cons of both systematic reviews (SRs) and narrative reviews (NRs).

Summary of the findings	
Pros	**Cons**
• There is an increase in SR from 5.8% (in 2000-2003) to 53.3% (in 2012-2015). • The overall mean citation number is significantly higher for SR. • At the year 2015, the adjusted mean citation for NR was double of the citations received by SR.	• The current high number of SR makes it difficult for clinicians to find appropriate SR for their needs. • It may be unlikely the current level of SR covers all health care demands from policy makers. • We did not assess quality of the reviews. Although it is possible, we cannot be sure that the highly cited reviews are the most useful guide for clinicians. Looking for highly cited is an easier step.

The present study showed an increase in systematic reviews from 5.8% (in 2000-2003) to 53.3% (in 2012-2015). The substantial increase in the number of systematic reviews was already demonstrated in a previous study, which showed that, in the PubMed database, the number of studies tagged as systematic reviews increased 2728% between 1991 and 2014, whereas for all PubMed-indexed items, the increase was 153%.[16] This study also demonstrated that the higher amount of systematic review studies may be a result of redundant and nonuseful studies,[16] which partially support our findings that systematic reviews are receiving fewer citations.

On average, the mean number of citations for systematic reviews is significantly higher than that for narrative reviews. However, over time, the adjusted number of citations granted to systematic reviews has decreased, and the citation gap between systematic and narrative reviews has reversed. For instance, in 2015, the mean citation rate for systematic reviews was half of that received by narrative reviews (RR: 0.56, 95% CI: 0.37-0.86). It may be supposed that the increase in the number of published systematic reviews was followed by a decrease in the quality and utility in those studies.

On the other hand, the 2 review types may present different patterns in the citation peak. The literature reports that the peak citation rate has differed across many fields.[17] Unfortunately, the peak rate for citations has not been assessed in reviews in dentistry. Therefore, it may be hypothesized that systematic reviews have a longer citation life, having a citation peak years after narrative reviews, as obsolescence of systematic reviews may not occur quickly. A narrative review is useful to generate hypotheses, and presents its results in a rich and critical way.[9] This may be one of the reasons for the higher citation trend in the years after publication. It is important to emphasize that this study does not recommend a nonsystematic approach to all reviews conducted in the future.

Another important finding of this study is that more than 50% of the systematic reviews published are from dental clinical sciences, especially in the periodontology and implantology fields. On the other hand, only 10.5% of the systematic reviews published in the dental literature were identified as DPH, although not necessarily in DPH core journals.[18] Initially, the majority of the systematic reviews, as advocated by the Cochrane Collaboration, were based on intervention reviews, which are not common in DPH.[18] The need for evidence-based public policy may require community interventions.

This study showed that a significantly higher citation rate was observed for reviews published in English and more than 90% of them were written in English. These results are consistent in the literature, as other studies have similar results.[3,19,20] As more visibility and a higher number of citations is expected for articles in English, most of the researchers tend to publish their studies in English, even when they are non-native English speakers. Additionally, English is recognized as the lingua franca for the scientific world. However, non-English native speakers still publish studies in their native language, perhaps due to local or regional interest, explaining lower citation rates.

The presented study used a stratified random method in order to identify all narrative and systematic reviews published between 2000 and 2015, without limits in the search strategy of selection. Therefore, the sample allows for representativeness of the dentistry field, and it must be

pointed out as a strength in this study. One study has shown that, in radiology journals, there is a positive correlation between the quality of reporting in systematic reviews and meta-analysis and citation rate.[21] Despite that, the literature reports that the assessment of a study by quality checklist may be inaccurate or not meaningful.[22,23] Quality assessment, the number of self-citations, and the H-index of the reviews' authors were not performed in the present study. Additionally, direct comparison to other fields, even in the biomedical sciences, may be inappropriate. These are the limitations of the present study.

CONCLUSION

In conclusion, it was observed that the number of systematic reviews published in dentistry increased from 2000 to 2015. This type of study still shows an overall higher mean number of citations in comparison to narrative reviews. However, there is a trend for systematic reviews to receive fewer citations in recent years.

REFERENCES

1. Seglen PO. Citations and journal impact factors: questionable indicators of research quality. Allergy 1997;52:1050-6.
2. Callaham M, Wears RL, Weber E. Journal prestige, publication bias, and other characteristics associated with citation of published studies in peer-reviewed journals. JAMA 2002;287:2847-50.
3. Di Bitetti MS, Ferreras JA. Publish (in English) or perish: the effect on citation rate of using languages other than English in scientific publications. Ambio 2017;46:121-7.
4. Fardi A, Kodonas K, Gogos C, Economides N. Top-cited articles in endodontic journals. J Endod 2011;37:1183-90.
5. Nabil S, Samman N. The impact of case reports in oral and maxillofacial surgery. Int J Oral Maxillofac Surg 2012;41:789-96.
6. Alarcon MA, Esparza D, Montoya C, Monje A, Faggion CM Jr. The 300 most-cited articles in Implant dentistry. Int J Oral Maxillofac Implants 2017;32:e1-8.
7. Feijoo JF, Limeres J, Fernandez-Varela M, Ramos I, Diz P. The 100 most cited articles in dentistry. Clin Oral Investig 2014;18:699-706.
8. Pitak-Arnnop P. The 100 most cited articles in dentistry—some discussions. Clin Oral Investig 2014;18:683-4.
9. Cook DA. Narrowing the focus and broadening horizons: complementary roles for systematic and nonsystematic reviews. Adv Health Sci Educ Theor Pract 2008;13:391-5.
10. Bhandari M, Busse J, Devereaux PJ, et al. Factors associated with citation rates in the orthopedic literature. Can J Surg 2007;50:119-23.
11. Patsopoulos NA, Analatos AA, Ioannidis JP. Relative citation impact of various study designs in the health sciences. JAMA 2005;293:2362-6.
12. Clarke M, Alderson P, Chalmers I. Discussion sections in reports of controlled trials published in general medical journals. JAMA 2002;287:2799-801.
13. Mulrow CD. The medical review article: state of the science. Ann Intern Med 1987;106:485-8.
14. Dunn AG, Zhou X, Hudgins J, et al. Financial competing interests were associated with favorable conclusions and greater author productivity in nonsystematic reviews of neuraminidase inhibitors. J Clin Epidemiol 2016;80:43-9.
15. Ercikan K, Roth W. What good is polarizing research into qualitative and quantitative? Educ Res 2006;35:14-23.
16. Ioannidis JP. The Mass Production of redundant, Misleading, and conflicted systematic reviews and meta-analyses. Milbank Q 2016;94:485-514.
17. Colledge L, de Moya-Anegón F, Guerrero-Bote V, López-Illescas C, El Aisati M, Moed H. SJR and SNIP: two new journal metrics in Elsevier's Scopus. Serials 2010;23:215-21.
18. Celeste RK, Broadbent JM, Moyses SJ. Half-century of Dental Public Health research: bibliometric analysis of world scientific trends. Community Dent Oral Epidemiol 2016;44:557-63.
19. Eshraghi A, Osman NA, Gholizadeh H, Ali S, Shadgan B. 100 top-cited scientific papers in limb prosthetics. Biomed Eng Online 2013;12:119.
20. Hamel R. The dominance of English in the international scientific periodical literature and the future of language use in science. AILA Rev 2007;20:53-71.
21. van der Pol CB, McInnes MD, Petrcich W, Tunis AS, Hanna R. Is quality and completeness of reporting of systematic reviews and meta-analyses published in high impact radiology journals associated with citation rates? PLoS One 2015;10:e0119892.
22. Berlin JA, Rennie D. Measuring the quality of trials: the quality of quality scales. JAMA 1999;282:1083-5.
23. Jüni P, Witschi A, Bloch R, Egger M. The hazards of scoring the quality of clinical trials for meta-analysis. JAMA 1999;282:1054-60.