

Dental Journals and Evidence-Based Dentistry: Miles to Go...,How Far Are We?

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Abstract

Dental journals provide timely, reliable and useful information on scientific communication and technical professional information for dentists. The objective of this editorial was to provide an insight into the role of dental journals in the process of publication and dissemination in evidence-based dentistry. Numerous dental journals existed and their numbers are ever-growing, their substantial contribution to evidence-based dentistry was demonstrated to be influenced by their editorial and publication policies, ethical guidelines, and authorship criteria, structured versus unstructured abstracts, quality of published abstracts, systematic reviews and randomized controlled trials, statistical methodological reporting, referencing accuracy and explicit reporting of conflicts of interest.

Keywords: Evidence-based dentistry; Dental research; Dental science; Research-based evidence.

Dental journals provide timely, reliable and useful information on scientific communication and technical professional information for dentists.[1] The objective of this editorial was to provide an insight into the role of dental journals in the process of publication and dissemination in evidence-based dentistry.

Publishing in dental journals is a growing challenge and authors submitting their manuscripts need to be aware of the criteria used by editors in assessment of submitted papers: criteria for rejection were poor construction of the paper' and 'poor research design,' and criteria for acceptance were 'scientific novelty and timeliness of the topic', in addition to adherence for 'instructions to authors'. Conflicting and problematic factors were 'poor use of English and careless preparation of the manuscript'.[2]

Although a significant proportion of international indexed dental journals did not provide appropriate instructions to authors on reporting ethical approval, informed consent and / assent, and conducting of research according to the Declaration of Helsinki which poses an ambiguous situation.[3] Authors, reviewers and editors thus need to ensure compliance with the principles of sound

scientific writing and the expeditious review of manuscripts prepared for publication in peer-reviewed dental journals.[4]

There were many reported cases of 'guest' authors (who sign as authors without meeting authorship criteria) and 'ghost' authors (who are credited to get authorship, but for some reason do not sign the article) in 64 impact factor-ranked dental journals which necessitated the need to explicitly declare and describe the authorship criteria in 'instructions to authors'.[5]

The contribution to evidence-based dentistry is determined by the study designs of published articles and Pandis *et al*[6] found that cross-sectional studies were the dominant design (55%), whereas observational investigations accounted for 13%, and interventions/clinical trials for 32%. Overall low reporting rate for study quality characteristics was noted for random allocation (15%), sample size calculation (7%), confounding issues/possible confounders (38%), effect measurements (16%), and multivariate analysis (21%). Out of the 84% of the published articles which reported a statistically significant main finding, only 13% presented confidence intervals.

Mislabeled controlled clinical trials as randomized clinical trials was a major issue where the latter design was found to be influenced by a number of factors such as dental journal type, involvement of statistician, year of publication, multicenter trial, and number of authors.[7] However, the quality characteristics of published randomized controlled trials were suboptimal according to key items of CONSORT checklist.[8,9]

Anecdotally, structured abstracts provide an organized means of presenting concise information on the published study compared to a non-structured abstracts, but the former did not improve the precision of citation retrieval.[10] Abstracts of systematic reviews published in dental journals had journal-dependent quality scores and lesser scores compared to Cochrane reviews. The former though adequately reported interventions (94%), objectives (96%), data sources (81%), eligibility criteria (77%), and conclusions (97%) in their abstracts; participants (18%), results (42%), effect size (14%), level of significance (60%), and trial registration (100%) were reported inadequately.[11]

Randomized controlled trials (RCTs) were also found inadequate in reporting title, participants, outcomes, random number generation, numbers randomized and effect size estimate in their abstracts, albeit they adequately reported interventions, objectives and conclusions; with rarely describing randomization restrictions, allocation concealment, blinding, numbers analyzed, confidence intervals, intention-to-treat analysis, harms, registration and funding.[12] RCTs with positive result were associated with high acceptance rate ranging from 75% to 90%, and they ironically had the highest percentage of non-significant findings which evidently demonstrated a publication bias for decreased odds of publishing an RCT in most dental journals except two.[13]

Statistical methodological reporting also need wide attention since Vähänikkilä *et al*[14] found that use of multivariate or specific methods did not improve; traditional statistical

significance testing was widely used in dental journals with increased use of confidence intervals; and, different dental journals had different profiles in their statistical content. Only 2.8% of papers used time-to-event methods where they extensively described statistical procedures, and other papers did not.[15]

Doms[16] found 42% of cited references had inaccuracies, with a large number of major errors (incorrect journal citation, “unable to verify”, incorrect author, and incorrect article title) and minor errors (minor author errors and minor citation errors). Referencing and its accuracy influence citation retrieval and in turn improve the impact factors for journals, and four years later, 10 dental journals were found to be acceptably accurate in their referencing.[17]

Industry-sponsored dental research tends to yield pro-industry and negative results of trials supported by profit-based organizations may not be published or their publication may be delayed. Hence, scientific journals should have clear conflict of interest policies and readers should be allowed full and complete access to this information.[18]

Although numerous dental journals existed and their numbers are ever-growing, their substantial contribution to evidence-based dentistry was demonstrated to be influenced by their editorial and publication policies, ethical guidelines, authorship criteria, structured versus unstructured abstracts, quality of published abstracts, systematic reviews and randomized controlled trials, statistical methodological reporting, referencing accuracy and explicit reporting of conflicts of interest.

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