Conflict of Interest Reporting in Dentistry Randomized Controlled Trials: A Systematic Review

Mohammed M. Beyari[a], Alisha Hak[b], Chuan Silvia Li[b], and Hanadi A. Lamfon[a]

[a]Umm Alqura University, Faculty of Dentistry, Saudi Arabia
[b]Global Research Solutions Inc., Burlington, Ontario, Canada

Abstract

Objectives: Conflict of interest (COI) reporting in the medical field has been a concern for a number of years. As the impact of industry on medical research increases, the need for transparency in these relationships increases. In this present study we aim to assess current practices and associations for COI reporting in the field of dentistry.

Study design: We conducted a systematic review of conflict of interest reporting for randomized controlled trials (RCTs) in 6 journals of Dentistry published between Jan 2011 and Mar 2012. We extracted study characteristics in duplicate and used descriptive statistics and Chi-square tests to assess associations.

Results: Of 1755 studies across seven journals, we identified 66 eligible RCTs. Many included studies were conducted in Europe (39%), with an average sample size of 355. A total of 76% of studies mentioned the presence or absence of potential COI. No correlation between the direction of results and whether a COI was declared was found ($p = 0.328$), nor was there an association between funding source and whether COI was discussed ($p = 0.120$). The journal in which the article was published did however have a correlation as to whether COI was discussed ($p \leq 0.0001$).

Conclusions: RCTs published in the field of dental research inconsistently report the presence or absence of a conflict of interest. Dental journals should standardize conflict of interest reporting to aid dental researchers in understanding when a conflict of interest exists, and to provide transparency to readers and patients alike.

Keywords: Dentistry, Dentition, Conflict, Randomized controlled trial.

INTRODUCTION

A conflict of interest is a set of conditions in which professional judgment concerning a primary interest (such as interpretation of the results of a study or the validity of the results) tends to be unduly influenced by a secondary interest (such as financial gain).[1] Conflict of interest in the medical field is a long-standing issue, which was not

Corresponding author. Tel.: +966 289 337 0857; fax: +966 289 337 0521; E-mail: mmbeyari@uqu.edu.sa, trauma7@mcmaster.ca.

Conflict of interest: The authors of this study have no conflicts of interest to report.

J Evid Base Dent Pract 2014;14:158-164
1532-3382/$36.00

http://dx.doi.org/10.1016/j.jebdp.2014.06.002

formally addressed until the 1980s.[2] Increasing influence of industry on medical research has led to inquiries regarding bias within scientific findings, and a questionable relationship between industry and medical professionals that requires more transparency.[3] Although declaration of a conflict of interest can have the potential to demoralize confidence in the research, failure to disclose such information may be unethical.[1,3]

Previous studies have suggested that research sponsored by industry tend to draw positive, pro-industry conclusions.[4,5] Thus, disclosing conflicts of interest allows the reader to determine whether the reported conflict may have affected the results of the study.[4] The International Committee of Medical Journal Editors (ICMJE) has developed a form that provides a uniform technique for reporting conflicts of interest; however, within the field of dentistry-related research, the majority of journals do not require this form to be submitted with a manuscript.[4]

Medical professionals have a primary responsibility toward the well-being of their patients, upholding their integrity, honestly and transparency in their practices.[6,7] Although many guidelines advise medical professionals to avoid conflict of interest, there is an unclear understanding regarding the interpretation of what is and what is not a conflict of interest.[6,8] The field of dentistry does not currently have an organized ethics committee to aid in addressing issues including conflict of interest, and a recent survey of dentists reported that half of respondents were not aware of any guidelines regarding conflict of interest in dentistry.[6] The survey reported extremely varied opinions of dentists regarding common practices in their field, such as referring patients to particular treatments or other professionals and accepting gifts from industry, and what would be considered a conflict of interest. However, the majority of dentists agreed that conflict of interest needed to be addressed and discussed more openly.[6]

The primary aim of the current study is to determine the prevalence in which sources of funding and conflicts of interest are disclosed in randomized controlled trials (RCTs) within Evidence-Based Dentistry. Secondary objectives seek to determine relationships between sources of funding, conflicts of interest, direction of study findings, journal of publication and location of research study.

MATERIAL AND METHODS

Journal Identification

We hand-searched the top 3 general Dentistry journals by impact factor and 4 journals by Dentistry Associations in English-speaking countries to identify RCTs. Prior to our search, we identified the journals using the following methods. We utilized the 2010 JCR Science Edition's Impact Factor Listing for Journals on Dentistry, Oral Surgery & Medicine to determine the top 3 general Dentistry journals by impact factor excluding journals whose titles referenced specific clinical specializations of Dentistry (e.g., Periodontology) or specific domains of dental practice (e.g., caries, implants). The 3 top general dentistry journals we selected were: The Journal of Dental Research, Community Dentistry, and Oral Epidemiology & Clinical Oral Investigations. We selected 4 Dentistry Associations in large English-speaking countries. We selected the Journals of the Canadian Dental Association, The American Dental Association, the British Dental Association, and the Australian Dental Association for review.

Article Identification and Eligibility Criteria

One reviewer (SH) manually searched online supplements of each of the included journals to identify articles reporting potential RCT. This was done by searching using the following inclusion criteria: (i) articles reporting RCT, (ii) with following key words in their titles or abstracts: *random, trial, control, placebo, blinded, masked,* and/or *crossover,* (iii) articles published from January 2011 to March 2012, including available "in press" articles as well to further ensure an accurate representation of an up-to-date list of publications. Table 1 outlines the eligibility criteria for article inclusion.

Upon selecting eligible studies, 2 reviewers (KM and SH) reviewed included abstracts in detail to determine inclusion eligibility, and the reviewers provided reasons for exclusion. We analyzed full-text articles in cases of disagreement or ambiguity, with eligibility resolved by consensus. We placed no eligibility restrictions on population, intervention, or outcome type. Following the full-text review for articles to be included we measured the inter-rater agreement by calculating percent agreement.

Data Abstraction

The authors developed a data extraction form to outline the data to be collected from each article prior to beginning data extraction, containing specific instructions, with examples of how to complete the form. The data extraction forms included questions on the mean age of participants, the percentage of female participants, the number of participants enrolled, the location of study, the number of clinical centers, the length of follow-up, the type of intervention (surgical vs. non-surgical), source of funding, conflicts of interest, statistical significance and direction of results. Duplicate extraction (KM and SH) was completed for the majority of data using the data extraction form. A senior reviewer (MB) was available in case of disagreement.

Statistical Analysis

Data were analyzed using Microsoft Excel 2010 (Microsoft Corp., Redmond, WA).[9] Descriptive statistics (percentages, means) were calculated to describe the demographic characteristics of the studies and COI reporting trends. Chi-square tests were performed to assess for significant associations existed between COI reporting, source of