Quality Assessment of Randomized Clinical Trials in Periodontal Research from 2015-2018 - A Cross Sectional Analysis

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Abstract

Objectives: The objective of this study was to assess the quality of randomised clinical trials (RCT) published in the field of periodontology in compliance with CONSORT guidelines and also to identify any associated influencing factors.

Methods: Quality of reporting in accordance with the 2010 CONSORT checklist was assessed and scored for RCTs published between 2015-2018 in three major periodontal journals: Journal of Periodontology (JP), Journal of Periodontal Research (JPR) and Journal of Clinical Periodontology (JCP). Descriptive statistics and linear regression with univariate analysis were carried out to identify the variables associated with mean CONSORT score. Mean scores were compared between various variables.

Results: 177 RCTs were identified from1875 published scientific articles accounting for 9.4% of the total publications screened. Europe (54%) produced more than half of the RCTs followed by Asia (19.2%). A large number of RCTs failed to report satisfactorily many items from the CONSORT checklist with no significant difference between three journals. The mean CONSORT score for JCP was the highest, at 70.5% (95% CI: 68.8 to 72.1), followed by JOP, at 69.9% (95% CI: 68.1 to 71.7) and 68.8% (95% CI: 65.6 to 71.9) for the JPR at p=0.631. Though, the mean CONSORT score increased from 70.4% in 2015 to 71.0% in 2018 but differences were not significant at p=0.653. RCTs reported by more than six authors had better CONSORT score compared to RCTs reported by fewer than six authors at p=0.01.

Conclusions: Inadequate reporting of several items of the CONSORT statement in published periodontal RCTs highlights the shared responsibility of researchers, journal reviewers and editors in maintaining the quality of reporting of RCTs.

Keywords: Randomized clinical trials, Evidence-based dentistry, Periodontics.

Introduction

Randomized Clinical Trials (RCTs) are considered as the gold standard for determining the effectiveness of clinical interventions (Hariton and Locascio, 2018). The provision of healthcare to patients must be based on evidence-based practice of which RCTs' findings form the core (Pihlstrom *et al.*, 2012). Thus, poorly designed or reported RCTs can mislead healthcare providers in providing quality treatment to patients. The negative impact of such poorly reported RCTs would result in misleading conclusions of systematic reviews and meta-analyses.

In 1993 and 1994, the standards of reporting trial group and Asilmoar working group on recommendations for reporting of clinical trials in biomedical literature were formed to address the gap between what a clinical trial should report and what is actually reported. The meeting of representatives of these two groups in 1995 had led to consensus recommendations for 21 items that should be reported in RCTs. The result of this meeting was the publication of the Consolidated Standards of Reporting Trials (CONSORT) statement in 1996 (Begg *et al.*, 1996). The first statement contained a checklist of 21 items and a flow diagram. The statement was revised twice in 2001 and then again in 2010 to

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include a twenty-five checklist items and a flow diagram (Moher *et al*., 2001). The objective of the CONSORT guidelines is to assist investigators to conduct and report clinical trials in a standardized way (Begg *et al*., 1996). Today, the CONSORT statement has been endorsed by over 600 different journals and published around the world in many languages (Schulz *et al*., 2010).

Several studies have assessed the quality of reporting of RCTs in the medical literature and have concluded that the majority of RCTs do not comply with the CONSORT guidelines and the overall quality of reporting was inadequate (Péron *et al*., 2012; Kim *et al*., 2019; Huang *et al*., 2018). Similar findings have been reported from studies that verified the compliance of clinical trials with CONSORT guidelines in various specialties of dentistry (Pandis *et al*., 2010; Alamri and Harbi, 2018; Bearn and Alharbi, 2015; Kloukos *et al*., 2015). In the field of periodontics, Montenegro *et al*., 2002 reported the quality of 177 published RCTs in major periodontal journals: Journal of periodontology (JOP), Journal of periodontal research (JPR) and Journal of clinical periodontology (JCP), focusing on the reporting of the randomization and blinding procedures and found them to be insufficient. Nonetheless, this study was conducted before the popularization of the CONSORT statement. An update study to the Montenegro *et al*., 2002 study, assessed the quality of RCTs in the same three journals from 2013 to 2015 using the CONSORT-2010 statement (Leow *et al*., 2016). They found that the reporting quality of the included 173 RCTs had substantially improved compared with the findings of Montenegro *et al*. However, both the studies failed to assess the reporting of several items on the CONSORT checklist. Also, neither study gave a mean CONSORT score for the included RCTs or individual mean CONSORT score for the journals to enable the reader to compare the quality of reporting of the included journals with different medical and dental journals.

Considering the drawbacks of earlier studies in the periodontal literature that assessed the quality of RCTs reporting, the primary objective of this study was to evaluate the quality of RCTs published in the specialty of periodontology between the years 2015 and 2018 according to the CONSORT guidelines and also to identify the associated influencing factors.

Materials and methods

In this cross-sectional study, the three leading journals in the field of periodontology were selected based on their 2019 impact factors: 1. Journal of periodontology (JOP), 2. Journal of periodontal research (JPR) and 3. Journal of clinical periodontology (JCP). RCTs were identified based on hand search of all articles on human trials published in these three journals. In vitro studies, laboratory-based trials and conference abstracts were excluded from this analysis. Eligible RCTs contained the keywords such as "randomized controlled trial", "randomized clinical trial", "assigned", "prospective" or "comparative" in the titles and abstracts or it was apparent from the methodology that the study was a randomized clinical trial. The full texts of all articles fulfilling the study criteria were then retrieved. The literature search was undertaken independently and in duplicate by the two investigators; any disagreement was resolved by an open discussion between the authors until a mutual agreement was reached.

The first investigator screened the potential RCTs using a pre-piloted extraction sheet. The score value was calculated in accordance with the CONSORT checklist guidelines (Schulz *et al*., 2010). Each item was scored either as 'Yes' if applies and counted as "1", and 'No' if absent and counted as "0 "or not applicable 'NA' and not counted in the final score (Bearn and Alharbi, 2015; Seehra *et al*., 2013). An item was scored as 'NA' if the research question of the study did not state conditions such as blinding of patients or treating clinician in the RCTs. The total score for each trial was calculated and converted to a percentage using the equation: total score = (total number of 'Yes' items/ [37-total number of 'NA' items]) × 100 (Bearn and Alharbi, 2015).

Additional information, including the number of authors, continent and country of the first author and clinical setting of the trial, was also recorded for each article. Country of first author was determined based on information provided in the methodology section of RCTs where trials were conducted. Information on affiliation and position of authors and location of study conducted were used to determine whether the study was conducted in academia or clinical setting. Involvement of statistician was determined by information in acknowledge section and/or statistical analysis section. The authors were calibrated by scoring 10% of the included articles together by referring directly to the 2010 CONSORT checklist and associated explanations. A random sample of 10% of the papers was scored by a second investigator to assess the inter-examiner reliability of the CONSORT scores. Another random sample of 10% of the papers was scored in a second round by the first investigator after a washing period of three months after the initial data collection was completed to assess intra-examiner reliability.

Statistical analysis

Descriptive statistics and percentage compliance based on the CONSORT checklist items were reported for the included RCTs. Linear regression with univariate analysis were carried out using SPSS 22.00 (Stata Corp, College Station, TX, USA) to identify the variables associated with mean CONSORT score. Inter-correlation coefficient tests were used to assess the inter and intra-examiner reliability.

Results

From January 2015 to December 2018, one hundred and seventy-seven RCTs were identified out of 1875 scientific articles published in the three journals, representing 9.4% of the total articles screened (Table 1). The percentage of published RCTs in the three leading periodontal journals over the 4-year period ranged from 27% - 29%, except for the year 2018, where the percentage of RCTs dropped to 15.2% of the total number of publications. Europe produced more than half of the published RCTs (54%) while RCTs in which the first author was based in Africa and Australia represented only 3.9% of the total published RCTs. The JCP published majority of the included RCTs (51%). In most of the included RCTs (98.3%), the first author worked in an academic institution and the RCTs were undertaken in university settings. More than half of the included trials (53.6%) had four to six authors, but only a small number of RCTs included the formal involvement of a statistician in the trials (9.6%) (Table 2).

The mean CONSORT score for all trials was 70.1% (95% CI: 69.0 to 71.2). The score ranged from 68.8% (95% CI:65.6 to 71.9) for JPR to 70.5% (95% CI: 68.8 to 72.1) for JCP at p=0.631. However, the difference in the mean score between the journals was not statistically significant, as per the univariate analysis (Table 3). From 2015 to 2018, the mean CONSORT score for the reports by year of publication increased from 70.4% (95% CI:68.0 to 72.8) in 2015 to 71.0% (95% CI: 67.6 to 74.4) in 2018 (Figure 1). Nonetheless, the univariate analysis showed that these differences were not statistically different at p=0.653. Regarding the number of authors, RCTs that included more than six authors had better CONSORT score for their reports (mean score 72.6, 95% CI: 70.4 to 74.8) compared to RCTs reported by fewer than six authors at p=0.01. Europe-based RCTs had better reporting quality (70.1%, 95% CI: 68.5 to 71.6), in comparison with other continent-based RCTs, except for South-America based RCTs (74.9%, 95% CI:71.8 to 77.9) which was statistically significant as per the findings of univariate analysis (Table 3). However, the number of Europe-based RCTs was almost four times that of the South America-based RCTs.

A large number of the RCTs included in this study failed to report satisfactorily many items of the CONSORT checklist (Table 4). For example, the sample size calculation was reported in just over half of the reports (57%), similarly with blinding (55%), description of the similarity of the intervention (13%), a table showing the baseline demographic data (55%), harmful outcomes (13%), trial limitations (32%) and protocols (3%). 94.6% of RCTs published in JOP had clinical trial registration followed by 61.5% in JPR and 53.3% in JCP at p=0.001 whereas source of funding was mentioned by 96.67% of RCTs in JCP, 55.4% in JOP and 38.5% in JPR at p=0.01.

Table 1. Distribution of mean scores based on characteristics of 177 randomized controlled trials

Characteristic	Number of Publications	Percentage	Mean Score	SD	95% CI
Journal					
JOP	74	42%	69.9	7.8	68.1 - 71.7
JPR	13	7%	68.8	5.2	65.6 - 71.9
JCP	90	51%	70.5	7.7	68.8 - 72.1
Year					
2015	50	28.2%	70.4	8.3	68.0 - 72.8
2016	48	27.1%	68.8	7.2	66.7 - 70.9
2017	52	29.3%	70.5	6.7	68.7 - 72.4
2018	27	15.2%	71.0	8.6	67.6 - 74.4
Authors					
> 4	23	12.9%	66.5	6.3	63.7 - 69.2
4 - 6	95	53.6%	69.5	6.9	68.0 - 70.9
< 6	59	33.3%	72.6	8.4	70.4 - 74.8
Continent					
Africa	5	2.8%	63.7	6.7	55.3 - 72.2
Australia	2	1.1%	74.3	1.9	57.1 - 91.4
Asia	34	19.2%	69.4	7.4	66.8 - 72.0
Europe	97	54%	70.1	7.6	68.5 - 71.6
North America	17	9.6%	66.9	6.4	63.6 - 70.2
South America	22	12.4%	74.9	6.8	71.8 - 77.9
Overall	177		70.1	7.6	69.0 - 71.2

Table 2. Number of reports and distribution by settings, work environment and statistician involvement

	Number of Publications	Percentage
Setting		
Private	3	1.7%
University	174	98.3%
Work in Academia		
Yes	174	98.3%
No	3	1.7%
Statistician's Involvement		
Yes	17	9.6%
No	160	90.4%

Table 3. Univariate linear regression derived coefficients (B) and 95% confidence interval with mean score of compliance with CONSORT as dependent variable for 177 RCTs

Predictor variables		Univariate analysis		
Variable	**Category or unit**	**B**	**95 % CI**	**P value**
Journals	JCP	Baseline (reference)		
	JPR	-1.7	-6.2 to 2.8	0.626
	JOP	0.6	-2.9 to 1.8	0.637
Continents	Europe	Baseline (reference)		
	Africa	-6.3	-13.0 to 0.4	0.064
	Asia	-0.60	-3.5 to 2.3	0.670
	North America	-3.2	-7.0 to 0.7	0.104
	South America	4.8	1.4 to 8.3	0.006
Year	2015	Baseline (reference)		
	2016	-1.6	-4.6 to 1.5	0.312
	2017	0.10	-2.8 to 3.1	0.921
	2018	0.6	-3.0 to 4.2	0.727
Number of authors	More than 6	Baseline (reference)		
	Fewer than 4	-6.1	- 9.7 to -2.5	0.01
	4 to 6 authors	-3.1	-5.5 to -0.7	0.01
Statistical significance of main finding	No	Baseline (reference)		
	Yes	- 4.9	-11.7 to 1.9	0.159

significant at $p<0.05$

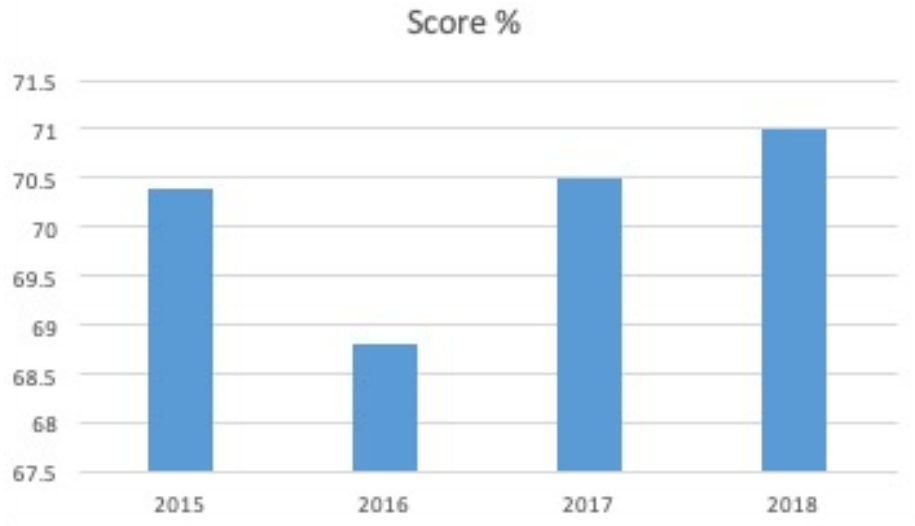

Figure 1. Mean CONSORT score for RCT reports by year of publication

Table 4. Comparison of compliance of reported RCTs to CONSORT items among three major journals in periodontics

	JOP		JPR		JCP		total		X2 (p value)
	No	%	No	%	No	%	No	%	
Identification as a randomized trial in the title	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts)	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Scientific background and explanation of rationale	74	100.0%	13	100.0%	89	98.9%	176	99.4%	0.615
Specific objectives or hypotheses	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Description of trial design (such as parallel, factorial) including allocation ratio	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Important changes to methods after trial commencement (such as eligibility criteria), with reasons	7	9.5%	0	0.0%	7	7.8%	14	7.9%	0.506
Eligibility criteria for participants	74	100.0%	13	100.0%	89	98.9%	176	99.4%	0.615
Settings and locations where the data were collected	72	97.3%	8	61.5%	87	96.7%	167	94.4%	0.01
The interventions for each group with sufficient details to allow replication, including how and when they were actually administered	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Any changes to trial outcomes after the trial commenced, with reasons	4	5.4%	0	0.0%	3	3.3%	7	4.0%	0.595
How sample size was determined	31	41.9%	7	53.8%	61	67.8%	99	55.9%	0.004
When applicable, explanation of any interim analyzes and stopping guidelines	4	5.4%	0	0.0%	0	0.0%	4	2.3%	0.058
Method used to generate the random allocation sequence	70	94.6%	12	92.3%	76	84.4%	158	89.3%	0.105
Type of randomization; details of any restriction (such as blocking and block size)	70	94.6%	12	92.3%	68	75.6%	150	84.7%	0.002
Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned	70	94.6%	12	92.3%	68	75.6%	150	84.7%	0.002
Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions	68	91.9%	12	92.3%	68	75.6%	148	83.6%	0.013
If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how	47	63.5%	11	84.6%	40	44.4%	98	55.4%	0.004
If relevant, description of the similarity of interventions	13	17.6%	1	7.7%	9	10.0%	23	13.0%	0.3

Table 4 continued overleaf...

Table 4 continued...

Statistical methods used to compare groups for primary and secondary outcomes	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
Methods for additional analyses, such as subgroup analyses and adjusted analyses	55	74.3%	12	92.3%	83	92.2%	150	84.7%	0.005
For each group, the numbers of participants who were randomly assigned, received the intended treatment, and were analyzed for the primary outcome	72	97.3%	13	100.0%	83	92.2%	168	94.9%	0.232
For each group, losses and exclusions after randomization, together with reasons	70	94.6%	10	76.9%	77	85.6%	157	88.7%	0.072
Dates defining the periods of recruitment and follow-up	66	89.2%	11	84.6%	86	95.6%	163	92.1%	0.189
Why the trial ended or was stopped	4	5.4%	0	0.0%	1	1.1%	5	2.8%	0.208
A table showing baseline demographic and clinical characteristics for each group	45	60.8%	8	61.5%	44	48.9%	97	54.8%	0.274
For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups	73	98.6%	13	100.0%	90	100.0%	176	99.4%	0.497
For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval)	74	100.0%	13	100.0%	90	100.0%	177	100.0%	
For binary outcomes, presentation of both absolute and relative effect sizes is recommended	11	14.9%	1	7.7%	37	41.1%	49	27.7%	0.001
Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory	70	94.6%	12	92.3%	89	98.9%	171	96.6%	0.214
All-important harms or unintended effects in each group (for specific guidance see CONSORT for harms)	6	8.1%	5	38.5%	13	14.4%	24	13.6%	0.001
Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses	20	27.0%	4	30.8%	32	35.6%	56	31.6%	0.504
Generalizability (external validity, applicability) of the trial findings	43	58.1%	11	84.6%	77	85.6%	131	74.0%	0.001
Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence	70	94.6%	13	100.0%	89	98.9%	172	97.2%	0.208
Registration number and name of trial registry	70	94.6%	8	61.5%	48	53.3%	126	71.2%	0.001
Where the full trial protocol can be accessed, if available	4	5.4%	0	0.0%	1	1.1%	5	2.8%	0.208
Sources of funding and other support (such as supply of drugs), the role of funders	41	55.4%	5	38.5%	87	96.7%	133	75.1%	0.001

significant at $p<0.05$

Nonetheless, the rest of the items on the CONSORT checklist were reported in most of the trials adequately (71-100%). The inter- and intra-reliability levels associated with scoring the included articles reporting were high, at 0.88 and 0.96 respectively.

Discussion

Clinical research is judged by many methods and at the core, randomized controlled trials provide the most reliable methodical proof, with minimum bias, during any medical or dental research. In RCTs, all participants have an equal chance to be included in any group: Test, Control or Placebo (Pihlstrom *et al.*, 2012). Considering the importance of RCTs to evidence-based dentistry, their reporting quality is highly relevant to the consumers of clinical research. This observational retrospective study aimed to assess the reporting quality of RCTs' full text in the field of periodontics.

In our study, the included 177 RCTs were published between January 2015 and December 2018 in three major periodontal journals (JOP, JCP and JPR). The number of included RCTs in the current study was slightly higher than the number reported by Leow *et al.*, 2016, which was 173 RCTs for the period from 2013 to 2015. However, Siddiq *et al.*, 2019 reported a higher figure of 369 RCTs for the period 2011-2016, which could be attributed to a real increase in the volume of RCTs performed in the field of periodontics between 2011 and 2016 or to a variation in the inclusion criteria between the current and the previous study.

Of all the 1875 published scientific articles in three periodontal journals between 2015-2018, the 177 were RCTs representing 9.4% of the total. Comparing this finding to other dental specialties, the number of published RCTs in periodontal journals is higher than in other dental journals, where the percentage of RCTs was 4% between 2012 to 2017 for endodontic RCTs (Alamri and Alharbi, 2018), less than 6% for orthodontic RCTs between 2008 to 2012 (Bearn and Alharbi, 2015), 4.1% for prosthodontic RCTs for the period 2005-2012 (Kloukos *et al.*, 2015), and 7.6% for pedodontics RCTs between 2011 and 2012 (Rajasekharan *et al.*, 2015). Nevertheless, this indicates that the majority of dental practice is still not based on RCTs as expected.

The findings of this study showed that the number of published RCTs in JCP, which is a clinically-oriented journal, accounted for more than half of the study sample. Furthermore, the majority of included RCTs in this study were based in Europe, followed by Asia. This finding is consistent with the finding of Kumar *et al.*, 2018. Another finding in this study was that, in the majority of the included RCTs, the first authors were affiliated to academic institutions and were performed in university settings, despite the fact that most of periodontal treatment is provided in non-academic settings, which urges caution regarding generalizing the findings of these RCTs in non-academic settings, where the case selection and clinician experience may differ. It was also noted that more than half of the included trials had four to six authors, but only a few of the RCTs had included statisticians. This suggests an increase in the collaboration efforts between periodontists to conduct RCTs but, nonetheless, the collaboration scope outside the specialty (i.e with statisticians) was limited. These findings were consistent with other dental specialties findings (Pandis *et al.*, 2010; Alamri and Harbi, 2018; Bearn and Alharbi, 2015; Fleming *et al.*, 2012).

The mean CONSORT score for the JCP was the highest, followed by the JOP and JPR. However, the difference in the mean score between the journals was not statistically significant. This finding is consistent with those reported by Siddiq *et al.*, 2019 who found that the JCP had the highest CONSORT score for RCTs in comparison with the JOP and the JPR. However, the authors did not report the overall mean CONSORT score. The comparison of the findings of this study with previous studies in periodontics which have analyzed the same journals was limited due to the fact that the authors did not calculate an overall mean CONSOROT score for all of the CONSORT items to reflect the reporting quality of all items collectively (Leow *et al.*, 2016; Siddiq *et al.*, 2019). Comparison of findings of this study with those of Leow *et al.*, 2016, revealed an improvement in reporting of randomization methods from 84% to 89%, and the allocation concealment methods from 64% to 85%. However, the blinding procedures were reported adequately in 58% of the published reports between 2013 and 2015 and in 55% of the published reports between 2015 and 2018. These figures were higher than those reported in the orthodontic and endodontic literature (Alamri and Harbi, 2018; Bearn and Alharbi, 2015; Fleming *et al.*, 2012). This could be attributed to a variation in the scoring of the items or to the better reporting of published RCTs in periodontal journals. It is worth mentioning that periodontal journals possess the highest impact factor in the dental field. Recently, Papageorgiou *et al.*, 2019 published a study comparing the methods, reporting and transparency of clinical trials in the fields of orthodontics and periodontics. They included 300 clinical trials published in the period 2017-2018, which were evenly distributed between periodontics and orthodontics (Papageorgiou *et al.*, 2019). Instead of evaluating specific journals, they searched only MEDLINE through PubMed for clinical trials. They found that less than 14% of the included trials following the CONSORT statement, which was significantly less in orthodontics compared to periodontics (Papageorgiou *et al.*, 2019).

The results from our study demonstrate significant differences in clinical trial registrations of the RCTs

among the three journals with JCP with least registrations. Prospective clinical trial registration can potentially improve the quality of trials and prevent unethical research conduct from occurring by putting key protocol information about each trial in the public domain (Viergever and Ghersi, 2011). A study by Viergever *et al.*, 2014 reported small improvements in the quality of registrations since 2009 and suggested that more effort to be made to scale up enforcement of trial registrations. Hence, clinical trial registrations are important for trial transparency and ethical compliance and to prevent publication bias, favorable results and selective reporting (Zarin, and Keselman, 2007; Dickersin and Rennie, 2003; Viergever and Ghersi, 2011, 2011). Our study also evaluated the disclosure of source of funding and found that trials published in JCP had higher reporting of funding than JOP and JPR. A study by Assem *et al.*, 2018, reported that despite the majority of journals publishing on health policy and systems research requiring the reporting of funding, approximately one third did not report on the source of funding. Source of funding is one of the many possible causes of bias in scientific research (Myers *et al.*, 2011) and exerts influence on researches leading to organizational bias and conflict of interest. In order to avoid these consequences and for credit tracking, it is essential to mention source of funding in the researches especially RCTs as they influence the clinical practice.

Randomized controlled trials are an important source for judging the effectiveness of interventions, therefore it is critical for clinicians to identify RCTs from their titles. In our study reporting of the term "RCT" in the title was found in all trials and this confirms the findings of Leow *et al.*, 2016. However, Siddiq *et al.*, 2019 found the titles to be reported in 62.9% of the 369 included trials in their study. This could be due to a variation in the inclusion criteria between the current and the previous study, considering that Siddiq *et al.*, 2019 have included almost twice as many trials as did Leow *et al.*, 2016 and our study. However, it seems that periodontal journals report RCT titles better than other dental specialty journals (Pandis *et al.*, 2010; Alamri and Harbi, 2018; Bearn and Alharbi, 2015; Fleming *et al.*, 2012). In fact , Pandis *et al.*, looked at the quality of reporting of published RCTs in 2009 in the dental journals with the highest impact factor and found that the mean score in the dental journal as 62.4 and the JCP scored the highest. It has been observed in our study that there is a slight improvement in the CONSORT mean score of the JCP, which could be explained by the endorsement of the CONSORT statement by the journal since then.

Limitations of this study are mainly related to the degree of subjectivity involved when scoring the reports, and this was limited by using the CONSORT checklist and intra- and inter-examiner reliability tests. Another limitation of this study is that it assessed the reporting quality of RCTs' full-text in three periodontal journals only. Although this might make it difficult to generalize the findings of other published periodontal trials, the selected journals have the highest impact factor among periodontal journals, and so a better reporting quality of their published RTCs would be presumed.

Conclusion

Although, there is a noticeable improvement in reporting quality of published periodontal RCTs, the reporting of several items remains inadequate. To obtain better quality in reporting of RCTs, it is a shared responsibility of investigators, journal reviewers and editors alike to follow the CONSORT statement guidelines.

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