

## Publication rates of editorial board members in oral health journals

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**Abstract:** The aim of this study was to measure the publication rate of editorial board members in their board journals and to evaluate associated variables. We evaluated the ten highest-ranked journals according to the 5-year impact factor under 'Dentistry, Oral Surgery & Medicine' subject category for 2010, 2011, and 2012. All original research papers with at least one member of the editorial board as author were counted. Final analyses assessed associated variables such as size of the editorial board, number of papers published each year, and each journal's impact factor. Overall, there was an increase in the average number of articles published from 2010 ( $115.2 \pm 52.2$ ) to 2012 ( $134.7 \pm 47.4$ ). The number and percentage of articles published with editorial board members as authors over the three years did not follow the same pattern, with a slight decrease from 2010 to 2011 and an increase in 2012. The number of articles with editorial board members as authors was significantly higher for journals with impact factors  $\geq 4.0$ . Journals with a higher impact factor and larger editorial board were associated with higher chances of editorial board members publishing in their respective journals. Participation of editorial board members as authors in publishing varies significantly among journals.

**Keywords:** Ethics; Ethics, Research; Publication Bias.

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### Introduction

Science has long faced problems with publication bias, with concerns being raised in the past few years about its increasing occurrence.<sup>1</sup> Even as early as 1959, 97% of the published papers presented positive results,<sup>2</sup> one characteristic of publication bias. In 1995, the same author observed that practices leading to publication bias had not changed over 36 years.<sup>3</sup>

Publication bias might occur during different phases of research. Initially, scientists are not encouraged to report non-significant or negative results, as studies with positive results have higher chances of being published,<sup>4,5,6</sup> despite the fact that many of these unpublished studies might have required investments of time or effort that may be repeated by another researcher with no access to these outcomes. In addition to research resources, animals or human beings might have contributed to this knowledge without recognition. This issue should be of concern to the scientific community, yet little attention is focused towards it. After submission, editors and reviewers are also more prone to accept studies that present positive results. Interestingly, a recent investigation pre-

sented two papers with identical methods but different outcomes – positive or negative – to two groups of reviewers.<sup>7</sup> Participants in the positive outcome group not only gave higher priority to the publication of the findings, but also rated the methods section significantly better. In addition, industry-related outcomes are associated with the publication of pro-industry results.<sup>8,9</sup> Based on these outcome-related issues, a few authors have suggested a different submission process divided in two steps: the first presenting only introduction and methods and the second one with outcomes and discussion.<sup>10,11</sup> The first step would be much more important than the second, and studies would be assessed for their approach and design rather than their results.

The fact that editorial board members of a journal have a better chance of publishing in their board journals occurs in at least five medical specialties, with journals almost three times more likely to publish reports from their own editorial board than from one of the competing journals within their subspecialty.<sup>12</sup> One may argue, however, that this publication rate naturally results from populating an editorial board with a team of specialty experts. Editorial board members may also preferentially submit their research reports to their own journal. No studies, to our knowledge, have assessed this issue in major oral health journals. Therefore, the aim of this study was to determine the participation rate of editorial board members in publications from their board journals, as well as other associated variables.

## Methodology

### Journal selection

Journals were selected based on the 5-year impact factor as provided by the Journal of Citation Reports (JCR) 2012. The ten highest-ranked journals under the 'Dentistry, Oral Surgery & Medicine' subject category were evaluated: Clinical Oral Implants Research (COIR), Journal of Clinical Periodontology (JCP), Clinical Implant Dentistry and Related Research (CIDRR), Periodontology 2000 (Perio 2000), Journal of Dental Research (JDR), Dental Materials, Oral Oncology, International Oral and Maxillofacial Implants (IOMI), Journal of Dentistry (JDent), and Community Dentistry and Oral Epidemiology (CDOE). Publication data was analyzed for 2010, 2011, and 2012.

### Data collection

All articles published in 2010, 2011, and 2012 were considered, but only original research reports were included in the statistical analyses. Each published issue and article was evaluated manually by one of the authors. Research reports that included a member of the editorial board as an author were scored and considered for later analysis. If the paper had two or more editorial members as co-authors the unit was still counted only once.

### Statistical analysis

The primary outcome of the present study was the number of articles published with editorial board members as authors. Independent variables included the total number of editorial board members, the total number of articles published in each year, and the impact factor. Descriptive statistics were calculated separately for each year. The impact factor was dichotomized into <4.0 and ≥4.0. The number of editorial board members and the total number of published articles in a year were analyzed as count variables using 10 units of change to allow for easier interpretation of coefficients.

The association between the number of articles with editorial board members as authors and the three independent variables was assessed using generalized estimating equations (GEE) with Poisson distribution, log link, and exchangeable correlation. Bivariate models were fitted in a first-step analysis, with year as a covariate. The final main-effects multiple model was fitted with all variables and the year. Incidence rate ratios (IRR) and 95% confidence intervals (95% CI) are reported. Statistical analyses were performed using Stata 12 software (StataCorp., College Station, USA). The significance level was set at 5%.

## Results

Table 1 presents the detailed information of the surveyed journals over the three years evaluated. The journal impact factor varied between 2.948 and 4.560, and the mean number of editorial board members was 54.7 (standard deviation 30.2; range 4 to 102). Overall, there was an increase in the average number of articles published from 2010 ( $115.2 \pm 52.2$ ) to 2012 ( $134.7 \pm 47.4$ ). The number and percentage of articles published with editorial board members as authors over the three years did not follow the same

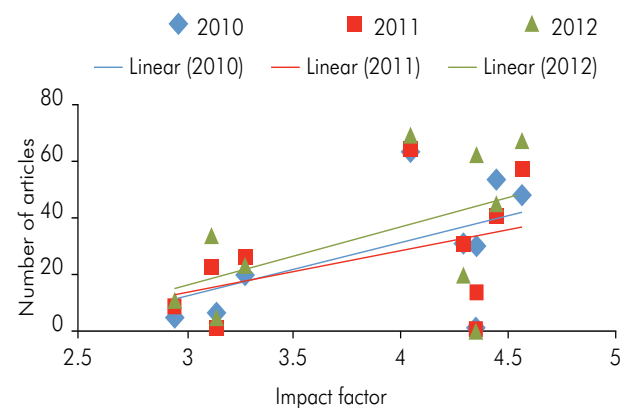
**Table 1.** Detailed information for each surveyed journal by year.

Journal	EBM	IF	2010		2011		2012		Raw mean total number of articles (mean ± SD)	Raw mean % of articles with editorial members (mean ± SD)
			Total number of articles	Articles with editorial members n (%)	Total number of articles	Articles with editorial members n (%)	Total number of articles	Articles with editorial members n (%)		
COIR	81	4.560	152	50 (32.9)	169	59 (34.9)	186	70 (37.6)	169.0±17.0	35.1±2.4
JCP	81	4.438	135	55 (40.7)	140	42 (30.0)	141	46 (32.6)	138.7±3.2	34.5±5.6
CIDRR	68	4.348	53	32 (60.4)	39	15 (38.5)	125	65 (52.0)	72.3±46.1	50.3±11.1
Perio 2000	4	4.344	39	3 (7.7)	42	2 (4.8)	37	2 (5.4)	39.3±2.5	6.0±1.5
JDR	68	4.286	204	33 (16.2)	172	32 (18.6)	137	21 (15.3)	171.0±33.5	16.7±1.7
Dental Materials	49	4.046	156	65 (41.7)	156	66 (42.3)	173	72 (41.6)	161.7±9.8	41.9±0.4
Oral Oncology	102	3.278	104	21 (20.2)	171	28 (16.4)	161	25 (15.5)	145.3±36.1	17.4±2.5
IJOMI	17	3.139	130	8 (6.2)	153	3 (2.0)	180	6 (3.3)	154.3±25.0	3.8±2.1
JDent	54	3.116	120	24 (20.0)	106	24 (22.6)	133	35 (26.3)	119.7±13.5	23.0±3.2
CDOE	22	2.948	59	6 (10.2)	62	10 (16.1)	74	12 (16.2)	65.0±7.9	14.2±3.5
Column mean±SD			115.2±52.2	29.7±20.4 (25.6±17.8)	121.0±54.5	28.1±22.2 (22.6±13.7)	134.7±47.4	35.4±26.6 (24.6±16.1)		

EBM: editorial board members, IF: impact factor; SD: standard deviation

pattern, with a slight decrease from 2010 to 2011 and an increase in 2012. Over all three years, Clinical Implant Dentistry and Related Research had the highest percentage of articles published with editorial board members (50.3%) followed by Dental Materials (41.9%). The International Journal of Oral and Maxillofacial Implants had the lowest percentage (3.8%).

The number of articles with editorial board members as authors was statistically higher for journals with impact factors  $\geq 4.0$  across all three years (Figure 1). The analysis of predictors of the number of articles with editorial board members as authors is presented in Table 2. In the first step, three separate models were fitted adjusting for the year of publication, with impact factor, number of editorial board members, and total number of articles published significantly associated with the number of articles with editorial members. In the final



**Figure 1.** Number of articles with editorial board members as authors by impact factor and year. Lines represent the fitted regression line for each year

**Table 2.** GEE Poisson regression models for predictors of the number of articles with editorial board members as authors.

Predictor	First step*			Final main effects multiple model**		
	IRR	95%CI	p	IRR	95%CI	p
Impact factor						
<4.0	1			1		
$\geq 4.0$	2.41	1.88-3.09	<0.001	2.34	1.83-3.00	<0.001
Number of editorial members (by each 10)	1.09	1.07-1.10	<0.001	1.10	1.06-1.16	<0.001
Total number of articles (by each 10)	1.15	1.11-1.20	<0.001	1.07	1.06-1.09	<0.001

IRR: incidence rate ratio; 95%CI: 95% confidence interval.

\*Bivariate models adjusted for year. \*\*Final multiple model including all variables and year.

multiple model that included all variables and year of publication, the three predictors remained significantly associated with the outcome. The rate of the number of articles published with editorial members as authors was approximately two times higher (IRR=2.34) for journals with impact factors  $\geq 4.0$  compared to those with factors  $< 4.0$ . This rate significantly increased at a similar magnitude for each 10 editorial board members and 10 published articles (10% and 7% increase, respectively).

## Discussion

The present study assessed publication by editorial board members in oral health journals. Around one-third of the articles published in the ten major oral health journals had at least one author that is a member of the editorial board, a consistent level over the past three years. Moreover, journals with higher impact factors were more likely to have articles with editorial board members as authors. The rate of article authorship by editorial members also increased with larger total numbers of published articles and the number of members on the editorial board.

One explanation for this outcome is preferential publication, as the odds of an editorial board member having his/her article published could be as much as 3 times higher.<sup>12</sup> Alternatively, editorial board members might be more prone to submit papers to their journal as they are certain of the journal's scope and quality. Editorial board members of high-impact journals are chosen because of their expertise in the field, and therefore need to publish their own research, so they may be more prolific than other authors. Editorial board members might also expect a friendlier peer-review process when submitting their manuscripts to their own journals. Data for rejected papers in each journal would be important for understanding this outcome, but this information is not accessible to the public.

We used the 5-year impact factor published in 2013 in the Journal of Citation Reports to select publications. The editorial board members may vary from year to year, but we only used the board member list from 2013 for all years. To avoid increasing the odds of participation of editorial board members, we only included papers classified as original research and excluded guest editorials, invited reviews, and other similar articles.

Editorial board size varied significantly between journals, and board size was a predictor for higher number of articles with an editorial board member as author or co-author. There are no established standards for board size, although the data does suggest that larger boards would have more self-published articles in the journal. This kind of decision is made by the publishers considering the peculiarities of the journal and the need for contributions from editorial board members. Editorial boards should have specific functions for each member, and board size should reflect variables such as how many issues and volumes are published each year.

We also found that the contributions – papers published – were not homogenous across board members, with each journal having some members that had more publications in their board journals than others. This fact, however, might be influenced by the editorial policy of each journal, and was not analyzed here. Importantly, the majority of the higher impact journals do not use a blinded review process, where the authors frequently do not know who reviewed the manuscript but the referees know the authorship of the paper. This could be an explanation for our findings. Nevertheless, given that the choice of an editorial board member is based on his/her scientific contributions, they would logically be expected to have higher participation and publication rates for their own research.

Publication bias is a reality in science and the preferential publication of editorial board members could contribute to it. Therefore, editors must consistently examine the review process to make sure it is as fair as possible. Moreover, contemporary ethical practices would indicate that a high rate of publication by editorial board members in the oral health literature requires close observation, particularly for higher-impact journals with larger editorial boards. Editors should be aware of this fact to monitor the impact of this authorship pattern in possible publication bias.

## Conclusion

Journals with a higher impact factor and larger editorial boards had a higher chance of editorial board members publishing in their board journals. Participation of editorial board members as authors in publishing varies significantly among journals.

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