

Characteristics and fate of orthodontic articles submitted for publication: An exploratory study of the *American Journal of Orthodontics and Dentofacial Orthopedics*

Nadia Farjo,^a David L. Turpin,^b R. Yates Coley,^c and Jianying Feng^d
Seattle, Wash, and Hangzhou, Zhejiang, China

Introduction: In this study, we aimed to give insight into the article review process by investigating the characteristics and the fate of manuscripts submitted to the *American Journal of Orthodontics and Dentofacial Orthopedics* (AJO-DO). **Methods:** The following information was obtained for original articles submitted to the AJO-DO in 2008: (1) for rejected articles: the reasons for rejection and the journal of subsequent publication when applicable; (2) for accepted articles: the number of revisions and the time elapsed to publication; and (3) for all articles: study topic, study design, area of origin, and statistically significant findings. Findings were reported using descriptive statistics, the chi-square test for equality of proportions, and multiple regression where appropriate. Post-hoc pair-wise tests were checked against the Bonferroni correction to account for multiple testing. **Results:** Of the 440 original articles submitted to AJO-DO in 2008, 116 (26%) were accepted and published an average of 21 months (SD, 5 months) after acceptance. Rejected articles totaled 324 (74%), with 137 (42%) finding subsequent publication an average of 22 months (SD, 11 months) after rejection by the AJO-DO. The top 3 reasons for rejection by the AJO-DO were (1) poor study design (59% of rejected articles), (2) outdated or unoriginal topic (42%), and (3) inappropriate for the AJO-DO's audience (27%). Manuscripts rejected for poor study design had the least success for subsequent publication, whereas those rejected as inappropriate for the AJO-DO had the highest rate of publication elsewhere. Area of origin was significantly associated with acceptance by the AJO-DO, with articles from United States and Canada most likely to be accepted ($P < 0.01$). Articles from countries with the lowest publication rate in the AJO-DO had the highest publication rate elsewhere. The presence of statistically significant findings was shown to be significantly associated with acceptance by the AJO-DO ($P = 0.013$) but not with publication elsewhere ($P = 0.77$). **Conclusions:** Rejection by the AJO-DO does not preclude publication elsewhere, although articles rejected for poor study design were least likely to be eventually published. Many publishable articles are rejected by the AJO-DO as inappropriate for its readership, and these were the most likely to find publication elsewhere. Articles with the highest chance of acceptance by the AJO-DO were those from the United States and Canada and those reporting statistically significant results. (Am J Orthod Dentofacial Orthop 2015;147:680-90)

^aFormerly, graduate student, Department of Orthodontics, University of Washington, Seattle, Wash.

^bProfessor, Department of Orthodontics, University of Washington, Seattle, Wash.

^cFormerly, graduate student, Department of Biostatistics, University of Washington, Seattle, Wash.

^dAssociate professor, Dental School, Zhejiang Chinese Medical University, Hangzhou, Zhejiang, China.

All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest, and none were reported.

Address correspondence to: David L. Turpin, University of Washington Dept of Orthodontics, HSC 357446, Seattle, WA 98195; e-mail, DLT@aol.com.

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While there exists among researchers a consensus regarding proper study design and scientific reporting, even the most seasoned authors see their work rejected periodically. Understanding the reasons for a manuscript's rejection may help authors identify areas needing improvement, while editors can use this information to more clearly communicate their expectations to authors and reviewers. The medical literature includes many studies examining the main reasons for manuscript rejection, mostly in editorial form. In the dental literature, there are considerably fewer studies on this topic, although both medical and dental articles emphasize many of the same reasons for rejection.

These reasons include absence of novel findings, irrelevance to a journal's scope, flawed study design, and poor English and grammar.¹⁻⁷

Few investigations in either the medical or dental literature have compared specific characteristics between accepted and rejected articles, such as country of origin, statistically significant results, and study topic, which could potentially reveal sources of bias in the peer-review process. Regarding the effects of statistically significant findings, many have explored publication bias, which is a review committee's tendency to publish articles with positive findings or an author's preference to write and submit articles with positive findings. Koletsi et al⁸ examined the contents of 5 top orthodontic journals and found that 75% to 90% of published studies contained statistically significant results. Lee et al,⁹ in a study published in *Clinical Experimental Ophthalmology*, asserted that statistically significant results do not affect publication. An article in the *Journal of the American Medical Association* raised the question of whether a submission without significant results is more likely to be rejected or whether the majority of submitted articles have statistically significant results.¹⁰ The relationship between study topic and manuscript rejection has not been explored to great depth in the medical or the dental literature.

Another area of interest regarding rejected articles is their ultimate fate after initial rejection. Studies in the medical literature have reported that rejected articles are usually subsequently published in journals with lower impact factors than the journal to which they were initially submitted.^{11,12} The impact factor of a journal for a particular year is defined as the number of citations from that journal from the previous 2 years divided by the total number of articles published in those 2 years. Journals are assigned an impact factor in *Journal Citation Reports*, published by Thompson Reuters.¹³ A journal with a high impact factor is usually judged as higher in quality, although using the impact factor as a measure of journal quality has its limitations.^{14,15} A journal's article rejection rate may also be used to measure journal quality, assuming that a higher-quality journal will have a higher article rejection rate. However, neither impact factor nor rejection rate is a definitive measure of journal quality, and one does not necessarily influence the other.¹⁶ The time to subsequent publication varies greatly among articles, but most medical studies showed that articles were published within 3 years of initial rejection.^{11,12,17} The dental literature lacks information on the fate of rejected articles.

In this study, we looked at original manuscripts submitted to the *American Journal of Orthodontics and*

Dentofacial Orthopedics (AJO-DO) in 2008 and aimed to give descriptive statistics about accepted and rejected articles, as well as to examine the interactions among manuscript characteristics and acceptance, rejection, and subsequent publication. The *AJO-DO* was deemed an appropriate journal to investigate, as American orthodontists regard it as the premier purveyor of clinical advances in orthodontics. It receives a wide variety of submissions from around the world and is appreciated by an international audience. Its impact factor is the highest among the orthodontic journals, with a 5-year impact factor of 1.924.

MATERIAL AND METHODS

This study was carried out with the approval of the University of Washington's Human Subjects Division (application number 42908). To obtain the data sample, access was granted by the editor of the *AJO-DO* in 2012 to search its electronic archives for original articles submitted between January 1, 2008, and December 31, 2008; this yielded 461 articles for use in this study. The database included the abstracts of the submitted articles but not full manuscripts.

Data collection

For each manuscript included in the study, the following information was recorded when applicable: *AJO-DO* manuscript number, corresponding author's name, date submitted, date of final *AJO-DO* decision, days elapsed to *AJO-DO* decision, study topic classification (according to the *AJO-DO* submission form), number of revisions, type of revisions, *AJO-DO* publication month and year, days elapsed to publication in the *AJO-DO*, reason for rejection, country of origin, presence of statistically significant findings, study design, final fate (published in the *AJO-DO*, published elsewhere, or not published), title of journal of subsequent publication, and month and year of subsequent publication.

Two investigators carried out the data collection, with investigator 1 (N.F.) collecting data for half of the articles and investigator 2 (J.F.) collecting data for the other half. For study design and reason for rejection, both investigators determined these data independently for all articles, and then intrarater and interrater reliabilities were determined by comparing their findings for 100 consecutive articles and reporting the reliability as the percentage of agreement among those articles. When the 2 investigators differed, a consensus was reached through review and discussion. In the particular case of determining the study design for articles appearing to be controlled trials, the final determination was

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