Research on the Submission, Acceptance and Publication Times of Articles Submitted to International Otorhinolaryngology Journals

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ABSTRACT
Objective: The aim of this study was to provide insight into the acceptance and publication times of articles submitted to international otolaryngology journals. Material and Methods: The study was carried out by examining the top 37 journal titles returned in an online search for otolaryngology journals published from 1999 to 2013 that have an international status based on their impact factor. Results: In total, 9,765 publications were examined. When journals were compared based on journal impact factor, statistically significant differences (p<0.01) were found. Comparisons of the acceptance and publication times for both original research and case reports revealed that these times have become shorter over the years. Discussion: Journals with higher impact factors likely have larger workloads in terms of articles, and consequently, their acceptance and publication times might be longer. An implication from this study finding that these periods have decreased over the years is that these processes can be expedited by more intensive use of the Internet and increases in journal capacity and number of issues published. Conclusion: The expedition of these processes over time might result from journals’ ability to use technology more intensively or from increases in journal’s capacity and number of issues published. Key words: Submitted manuscript, Otorhinolaryngology, acceptance time, publication time, submission time.

1. INTRODUCTION
Turning a scientific study into an article and reaching all the interested parties in the scientific realm is the utmost desire of every scientist. Publication allows others to obtain data and to use and test implications, while increasing the recognition and citations of the authors. In the past, when all correspondence and assessment took place through mail, this process could take a long time and might encounter obstacles, such lost mail. Rapid technological developments in recent decades and the spread of the Internet have allowed researchers to send manuscripts to the journals online and journals to conduct assessments and correspondences via online platforms. This expedited manuscript assessment process aided by technology has enabled faster access to more comprehensive knowledge, increasing scientific knowledge and quickening the transformation of manuscripts into scientific products. However, increased scientific productivity has caused higher submissions to scientific journals, increasing the workload of journals. This trend could lead to the outright rejection of manuscripts because of the excessive number of studies and could prolong the acceptance and publication of articles. The waiting time until publication for submitted academic studies and case reports might vary among journals, and there is no knowledge of the reasons for these differences. However, the level of a journal’s impact factor might affect the variance in all of these processes.
When the publication times are long, researchers might change their journal selection. Late publication of studies might delay new treatment protocols for diseases, resulting in adverse impacts on human health (1). In the contemporary world where knowledge and technology evolve rapidly, delays in the publication of a scientific manuscript might also delay the introduction of knowledge or technology, preventing a pioneering idea from entering the field. In addition, the number of citations of an article, a significant indicator of im-
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Importance in the realm of science, might also be adversely affected. While manuscript publication times historically have been long, various strategies have been implemented to avoid delays in submission, acceptance and publication. Computer technology has enabled the submission of articles online and shortened the publication period (2).

This study analyses the time from the submission of a manuscript to a journal until its acceptance and publication. Forty journals classified as international with high impact factors are examined in order to reveal the relationship between impact factor level and these processes. As well, any changes in these durations and differences over the years are demonstrated statistically.

| Journal Name                                      | Impact Factor (2013) | Submission-Acceptance (days) | Acceptance-Publication (days) | Submission-Publication (days) |
|---------------------------------------------------|----------------------|-----------------------------|------------------------------|-------------------------------|
| Acta Oto-Laryngologica                            | 1.106                | 1 - 257 (46)                | 98 - 602 (175)               | 138 - 675 (231)              |
| Acta Otorhinolaryngologica                        | 0.786                | 11 - 789 (101)              | 6 - 429 (82)                 | 28 - 980 (209)               |
| American Journal of Otolaryngology                | 1.228                | N/O                         | N/O                          | N/O                          |
| American Journal of Audiology                     | 0.865                | 4 - 828 (177)               | 1 - 362 (115)                | 15 - 931 (310)               |
| American Journal of Rhinology & Allergy           | 1.744                | N/O                         | N/O                          | N/O                          |
| Annals of Otolaryngology, Rhinology & Laryngology | 1.212                | N/O                         | N/O                          | N/O                          |
| Archives of Otolaryngology                        | 1.779                | 1 - 777 (132)               | 16 - 721 (151)               | 44 - 927 (288)               |
| Audiology and Neurotology                         | 2.318                | 5 - 628 (163)               | 37 - 1968 (107)              | 63 - 2078 (283)              |
| Auris Nasus Larynx                                | 0.948                | 9 - 743 (142)               | 12 - 431 (74)                | 74 - 879 (239)               |
| B-ENT                                             | 0.355                | N/O                         | N/O                          | N/O                          |
| Brazilian Journal of Otorhinolaryngology          | 0.545                | N/O                         | N/O                          | N/O                          |
| Clinical Otolaryngology                           | 1.869                | N/O                         | 5 - 3128 (118)               | N/O                          |
| Clinical & Experimental Otorhinolaryngology       | 0.877                | 1 - 342 (62)                | 7 - 470 (102)                | 10 - 591 (175)               |
| Current Opinion in Otolaryngology                 | 1.731                | N/O                         | N/O                          | N/O                          |
| Dysphagia                                         | 1.938                | 42 - 741 (172)              | 11 - 313 (48)                | 69 - 878 (244)               |
| Ear and Hearing                                   | 3.262                | 2 - 1033 (250)              | 38 - 346 (168)               | 135 - 1127 (428)             |
| ENT- Ear Nose and Throat                          | 1.03                 | N/O                         | N/O                          | N/O                          |
| European Annals of Otolaryngology, Head and Neck Diseases | 1.212                | N/O                         | N/O                          | N/O                          |
| European Archives of Oto-Rhino-Laryngology        | 1.458                | 2 - 1195 (122)              | 1 - 568 (24)                 | 20 - 1209 (162)              |
| Head & Neck                                       | 2.833                | N/O                         | 47 - 2592 (137)              | N/O                          |
| Hearig Reseach                                    | 2.537                | 1 - 900 (123)               | 2 - 427 (40)                 | 28 - 1076 (187)              |
| HNO                                               | 0.42                 | N/O                         | N/O                          | N/O                          |
| International Forum of Allergy & Rhinology        | 1                    | 11 - 357 (86)               | 24 - 447 (62)                | 66 - 635 (170)               |
| International Journal of Pediatric Otorhinolaryngology | 1.35               | 3 - 285 (83)                | 32 - 321 (116)               | 110 - 519 (198)              |
| International Journal of Audiology               | 1.632                | 2 - 780 (194)               | 14 - 566 (151)               | 20 - 1101 (357)              |
| Journal of the American Academy of Audiology      | 1.63                 | N/O                         | N/O                          | N/O                          |
| Journal of Vestibular Research                    | 1                    | 3 - 922 (209)               | 41 - 1015 (155)              | 126 - 1305 (404)             |
| Journal of the Association for Research in Otolaryngology | 2.952             | 5 - 2476 (143)              | 1 - 200 (53)                 | 27 - 2532 (215)              |
| Laryngo-Rhino-Otoliege                            | 0.82                 | 4 - 1108 (99)               | 10 - 644 (93,5)              | 34 - 1190 (216)              |
| Laryngoscope                                      | 1.979                | 9 - 407 (73)                | 15 - 3439 (875)              | 50 - 652 (183)               |
| Logopedics Phoniatrics Vocology                   | 0.571                | 18 - 467 (132)              | 97 - 658 (24)                | 112 - 1130 (413)             |
| Otolaryngologic Clinics of North America          | 1.458                | N/O                         | N/O                          | N/O                          |
| Otology Neurotology                               | 2.014                | N/O                         | N/O                          | N/O                          |
| Orl - Journal for Oto-Rhino-Laryngology and Its Related Specialties | 1.099             | 2 - 1039 (108)              | 1 - 1116 (118)               | 53 - 1305 (243)              |
| Otolaryngology Head and Neck Surgery              | 1.625                | 1 - 923 (92,5)              | 17 - 428 (80)                | 27 - 1052 (176)              |
| Rhinology                                         | 1.72                 | 1 - 1172 (134)              | 20 - 364 (181)               | 32 - 1298 (319)              |
| The Journal of Laryngology & Otology              | 0.681                | N/O                         | 34 - 2415 (239)              | N/O                          |

Table 1. Distribution of Journal Characteristics for Original Researches

2. MATERIAL AND METHODS

After the local ethics board approved the study, the first 37 journals returned from an online search (http://www.sci-journal.org/) which published in the otolaryngology specialty field and were ranked by 2013 impact factor were examined. Impact factors of the journals were confirmed by searching each journals web pages. Their submission, acceptance and publication times were recorded for this cross-sectional clinical study. As the journals could be accessed online, all the issues published from 1999 to 2013 were included in the study. Issues published in and before 1998 were not included because of the difficulty or impossibility of online access for those years. As well, 2014 issues were not included in the study as not all issues had been published at the time. Journals which do not indicate articles’ submission and acceptance date were also excluded. Letters to the editor and edited
The data obtained from the journals were statistically analyzed with IBM SPSS Statistics 22.0 software. For the evaluation of quantitative data, descriptive statistical methods (mean, standard deviation, median) and the Kruskal–Wallis test were used, including for the intra-group comparison of parameters that were not normally distributed. A Mann–Whitney U test was performed to identify the groups that caused the differences and to compare parameters that did not show a normal distribution based on their impact factor, as well as any changes over the years.

3. RESULTS

For original researches, 27 journals with published article submission, acceptance and publication dates were included, while for case reports, 15 journals were included. Data were collected from the first 4 original researches and the first 2 case reports published in every issue of the included journals. In total, 9,765 publications were examined, of which 8,472 were original researches and 1,293 case reports.

Table 1 presents the distribution of 2013 impact factors, submission–acceptance, acceptance–publication and submission–publication times for journals publishing original researches. Journals with an impact factor of less than 1, 1–2, 2–3 and more than 3 were grouped together. In bilateral comparisons, the differences in the times from submission to acceptance among various groups were found to be statistically significant (p<0.01). For journals with an impact factor of 1 or less, this period was significantly shorter than for journals with an impact factor of 2–3 or more than 3 and statistically longer than for journals with an impact factor of 1–2 (p<0.01) (Table 2). Journals with an impact factor of 1–2 had a statistically shorter elapsed time than those with an impact factor of 2–3 or more than 3 (p<0.01) (Table 2). Journals with an impact factor of 2–3 saw a statistically shorter time than journals with an impact factor of more than 3 (p<0.01) (Table 2).

Among the impact factor groups, the time elapsed between the submission and publication also showed statistically significant differences (p<0.01) (Table 2). In dual comparisons, journals with an impact factor of more than 3 had a significantly longer time than all the other groups (p<0.01). This parameter was found to be significantly longer in journals with an impact factor 1 or less or 2–3, compared to journals with an impact factor of 2–3 (p<0.01) (Table 2). Statistically significant differences were not detected between other groups (p>0.05).

In the impact factor groups, the time elapsed from submission to publication is statistically significant (p<0.01). In detecting which groups produced the differences in the dual comparisons, journals with an impact factor of more than 3 were found to have a significantly longer time from submission to publication than those with an impact factor of 1 or less (p: 0.001), with an impact factor of 1–2 (p: 0.001) and 2–3 (p: 0.001). Among journals with an impact factor 1 or less (p: 0.001) and 1–2, this period was significantly longer than for those with an impact factor of 2–3 (p: 0.001). Statistically significant differences could not be detected between other impact factor groups (p>0.05). Table 2 presents the relationship between times for Original Researches and Case Report Groups by Impact Factor. Kruskal Wallis test.

**p<0.01

| Impact Factor (2013) | Submission-Acceptance Time (day) | Acceptance-Publication Time (day) | Submission-Publication Time (day) |
|---------------------|---------------------------------|-----------------------------------|-----------------------------------|
| ≤1                  | 154.2±121.8                    | 283.5±462.8                      | 281.5±171.4                      |
| 1–2                 | 138.9±107.8                    | 334.6±646.1                      | 274.8±147.8                      |
| 2–3                 | 161.9±125.7                    | 103.4±104.3                      | 239.2±152.2                      |
| >3                  | 275.2±149.2                    | 174.5±160.7                      | 449.4±154.0                      |
| p                   | 0.001**                         | 0.001**                          | 0.001**                          |

Table 3 presents the distribution of 2013 impact factors, submission–acceptance, acceptance–publication and submission–publication times for the journals publishing case reports. Journals with an impact factor less than 1, 1–2 and 2–3 were grouped together (Table 2). No journals publishing case reports had an impact factor of more than 3. The time elapsed from submission to acceptance date showed statistically significant differences among the groups (p<0.01). In dual comparisons, journals with an impact factor 1 or less or 2–3 saw a statistically significantly longer time than journals with an impact factor of 1–2 (p<0.01). No other significant differences between were found (p>0.05). Table 2.

For the case reports, statistically significant differences (p<0.01) among groups were found in the time elapsed between acceptance and publication (Table 2). In dual comparisons, journals with an impact factor of 2–3 had a significantly longer time than journals with an impact factor of 1 or less or 1–2 (p<0.05, p<0.01). No other statistically significant differences between groups was observed (p>0.05) (Table 2).

As well, the time elapsed between the submission and publication of case reports among the groups were found to be statistically significant (p<0.01) (Table 2). In the dual comparisons, this period was significantly longer for journals with impact factor 1 or less than for journals with an impact factor of 1–2 (p<0.01). None of the other differences between groups were statistically significant (p>0.05) (Table 2).

Comparisons of the article submission, acceptance and publication times for original researches and case reports.
were showed that only the time from submission to acceptance was significantly longer for original research than case reports (p<0.01). Acceptance–to–publication and submission–to–publication times showed no statistically significant differences between groups (p>0.05).

The article submission, acceptance and publication ratios for original research and case reports were also evaluated by 5-year periods: 1998–2003, 2004–2008 and 2009–2013 (Table 4). The differences in time from submission to acceptance for original studies over these periods were found to be statistically significant (p<0.01). In dual comparisons, this time was significantly longer in 1999–2003 compared to 2004–2008 and 2009–2013 (p<0.01). This time was also significantly longer in 2004–2008 than 2009–2013 (p<0.01).

Statistically significant differences in the time from acceptance until publication for original research were also found (p<0.01) (Table 4). In dual comparisons, 1999–2003 saw a significantly longer time than 2004–2008 and 2009–2013 (p<0.01). This period was also significantly longer in 2004–2008 than 2009–2013 (p<0.01).

The times elapsed from article submission to publication time for original research were compared by 5-year periods to determine which were statistically significant different (p<0.01) (Table 4). To identify which group caused the difference in the dual comparisons, 1999–2003 was observed to have a statistically significantly longer time than 2004–2008 and 2009–2013 (p<0.01). As well, 2004–2008 also saw a statistically significantly longer time than 2009–2013 (p<0.01) (Table 4).

Similar classifications were made to detect changes in the results obtained from case reports over 5-year periods (Table 4). The time elapsed from submission until acceptance was determined to be statistically significant (p<0.01). In dual comparisons conducted between groups, 1999–2003 had a significantly longer time than 2004–2008 and 2009–2013 (p<0.01). As well, 2004–2008 also saw a significantly longer time than 2009–2013 (p<0.01) (Table 4).

Statistically significant (p<0.01) differences were also found
in the time from acceptance and publication for case reports (Table 4). To determine which group caused the difference in the dual comparisons, 1999–2003 was observed to have a statistically significantly longer time than 2004–2008 and 2009–2013, and 2004–2008 longer than 2009–2013 (p<0.05, p<0.01, p<0.01, respectively) (Table 4).

The times from submission until publication of case reports were found to have statistically significant differences (p<0.01) (Table 4). In the dual comparisons, the time was significantly longer in 1999–2003 than 2004–2008 and 2009–2013 and in 2004–2009 than 2009–2013 (p<0.05, p<0.01, p<0.01, respectively) (Table 4).

4. DISCUSSION

The need for bibliometric analysis of scientific publications has become more pressing in recent years. Authors consider the time from submission journal until publication and prefer that assessment and finalization be completed as soon as possible. A related study on journals in the field of ophthalmology analyzed whether these times were correlated with the impact factor of the journal and the online accessibility of the article and the journal (1). It was argued that the speed of publishing an article also indicated its quality (1, 3).

Researchers want to publish in popular journals and expect it to contribute to their careers. Authors generally prioritize journal quality and short publication times when selecting journals. Impact factor has come to dominate evaluation of journal quality in recent decades. Consequently, publication time and impact factor affect authors’ choice of journal for submission (4).

Recent technological advancements and the widespread use of the Internet have expedited the submission, assessment and publication of manuscripts submitted to journals and eliminated the delays and losses in the mail that occurred in the past. As well, as accessing knowledge has become easier, researchers have found it easier to conduct scientific studies and publish them in journals. However, this has had the effects of increasing the article load of journals and possibly of plagiarism. Revising rejected articles to meet the required conditions also takes time, prolonging the publication for articles (5).

To the best of our knowledge, a comprehensive study on the distribution of journals’ article acceptance and publication times over the years has not been conducted for science in general or the otolaryngology specialty area. Our study is first in this regard. Our research separately evaluated original research and case reports, and differences in article acceptance and publication times were examined according to journals’ impact factors. As well, possible changes over the years were investigated, and differences between case reports and original research were evaluated. Chen H et al. examined 51 ophthalmology journals and reported that impact factor did not affect article submission and acceptance dates and publication times (1). However, the data obtained in this study show that there is a statistically significant relationship between these times and impact factor. It was found that, for original researches, the times from submission to acceptance and from submission to publication were longest in journals with an impact factor higher than 3 (Table 2). This result can be explained by the higher number of articles submitted to these journals, which could increase the waiting period.

The time from submission to publication is closely related to the excess number of articles submitted to journals. Time to publication after acceptance by more popular journals might be longer than for other journals. Electronic publication by even print journals can serve as a solution to shorten this time (6).

For online journals, the title and contents of article are also important to publication speed. The title should convey much information about the content of the work, not only to serve the convenience of the reader but also to allow the reader to understand the content by just reading the title. Researchers then can focus on reading articles relevant to their work, saving them time (3).

Time to publication sometimes is prolonged by rejection of the article for such reasons as insufficient methodology, problems in the control group, grammatical and organizational mistakes in English translations, the needed for more explanation of the work, simultaneous submission to journals and plagiarism. Revising rejected articles to meet the required conditions also takes time, prolonging the publication for articles (7).

The literature review did not find research on changes in journals’ acceptance and publication times over the years. Our study investigating this question concluded that the acceptance and publication times for both original research and case reports have shortened over the years so that articles can be accepted and published in shorter periods. For original researches, submission–to–acceptance and submission–to–
publication times were 192 and 351 days during 1999–2003, 161 and 290 days during 2004–2008 and 123 and 221 days during 2009–2013. This change can be explained by journals’ widespread use of faster technology and the Internet.

5. CONCLUSION

All researchers want journals to assess and publish their manuscripts as soon as possible. The length of this process can depend on the journal’s impact factor and reputation and on whether manuscripts report original research. Journals with higher impact factors likely have larger workloads in terms of articles, and consequently, their acceptance and publication times might be longer. Journals should develop methods to reduce this workload. Being more selective or publishing more issues could be a solution. An implication from this study finding that these periods have decreased over the years is that these processes can be expedited by more intensive use of the Internet and increases in journal capacity and number of issues published.

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CONFLICT OF INTEREST: NONE DECLARED.

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