



## LETTER TO THE EDITOR

## Pulmonary rehabilitation: Publication rate of presentations to international congresses: Are the abstracts being published as journal articles?



### Publication Rate on Pulmonary Rehabilitation

Dear Editor,

Research project findings have been disclosed more as conference abstracts than as articles in scientific journals.<sup>1,2</sup> However, conference abstracts aim beyond scientific dissemination to receive peer feedback so that the preparation of the complete manuscript can be refined and published in qualified scientific journals.<sup>3</sup> Publication as an article in a conference abstract appears to be based on the direction of the study results, leading to publication bias.<sup>4</sup> To prevent bias, researchers should be encouraged to publish their results in peer-reviewed scientific journals.<sup>5</sup>

The two largest scientific congresses in the field of pulmonology are held annually: the European Respiratory Society International Congress (ERSc), with approximately 4,000 abstracts accepted annually, and the American Thoracic Society International Conference (ATSc), with almost 7,000 abstracts accepted annually (Fig. 1). In pulmonology, pulmonary rehabilitation is a multidisciplinary field of knowledge that includes physicians and their respiratory allies.

This study aimed to evaluate the publication rate of scientific abstracts presented within the scope of pulmonary rehabilitation and related topics in ERSc and ATSc. Searches for abstracts were conducted during the electronic proceedings of the two conferences held from 2016 to 2018. The search was initially based on titles of abstracts that contained terms within the scope of pulmonary rehabilitation, such as “physical activity”; “physical training”; “exercise”; “exercise training”; “walking”; “physiotherapy”; “physical therapy”; “pulmonary rehabilitation”; “cardiopulmonary rehabilitation”, but not limited to these words. The focus was exclusively on physical exercise, rather than mental or other forms of exercise. Abstracts pertaining to stress testing or physical exercise training were considered relevant. Education and behavioral modifications were considered only if they were related to physical activity or pulmonary

rehabilitation. Conversely, educational topics that specifically targeted medication adherence or medical education were deemed ineligible. After screening based on the aforementioned keywords, the full text of the abstracts was read, and studies involving animals, *in vitro* or not related to pulmonary rehabilitation were excluded (Fig. 1). The remaining abstracts were categorized by presentation type: thematic posters, poster discussions, or oral presentations. The number of authors and country of origin of the corresponding author was recorded. We analyzed the number of abstracts published as full articles until five years after the abstract presentation.

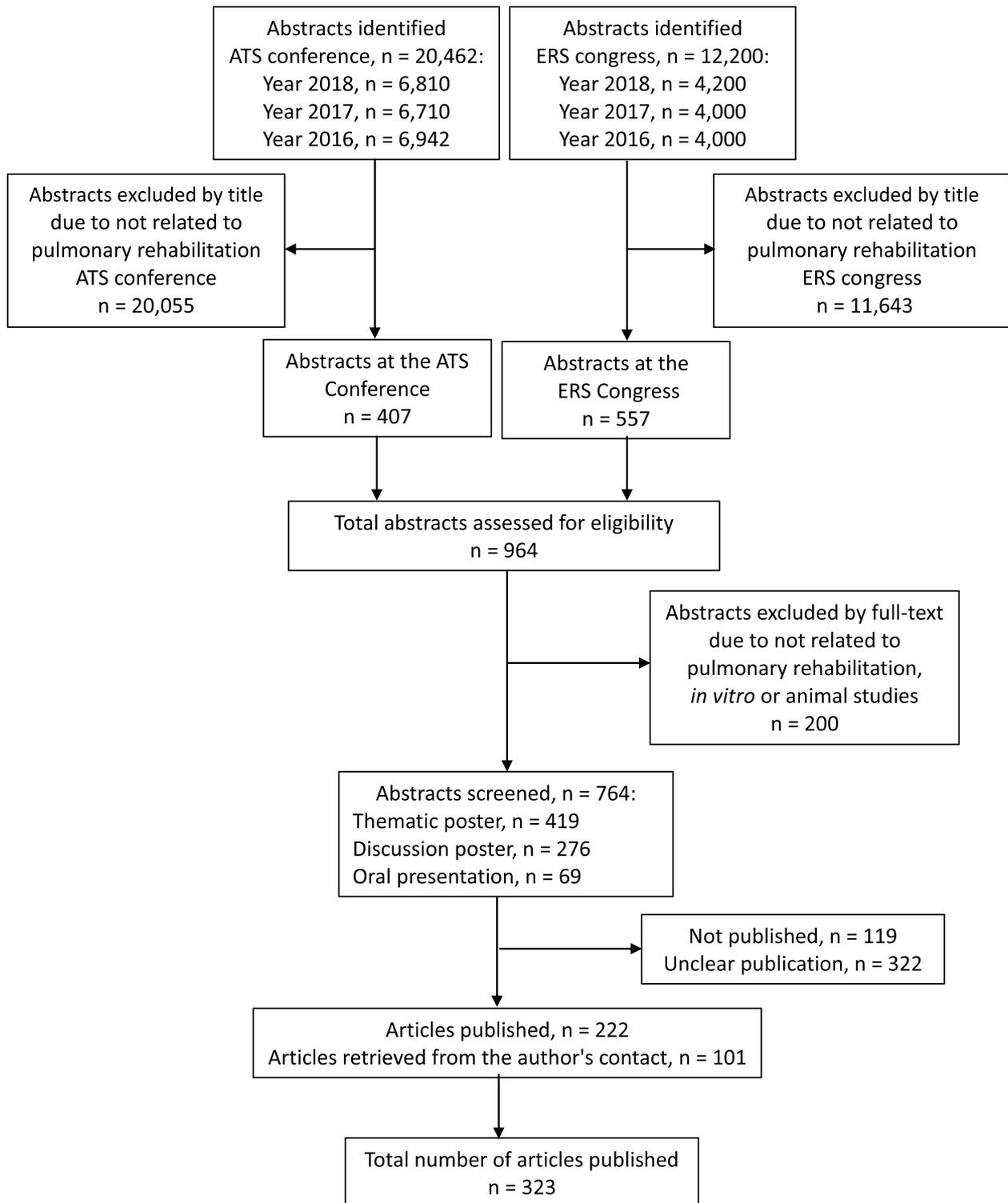
After the abstract screening, full-text articles were searched in the Google Scholar and Medline databases. When a journal article was not found, up to three e-mails were sent to the authors to determine the publication status and obtain a copy of the article if it was published. When the journal article related to the presented abstract was not found, and no response from the author was obtained, it was classified as an “uncertain publication.” If the abstract findings were published in two or more articles, only the article with the highest impact factor (IF) was considered. The following data was extracted from abstracts published as journal articles: name of the journal, IF, data on study design, affiliation, and whether the study result was statistically significant or with a positive direction from their primary outcome analysis.

A total of 964 potentially eligible abstracts were identified, of which 200 (20.7%) were excluded as they were not related to pulmonary rehabilitation, *in vitro*, or animal studies. Seven hundred sixty-four abstracts were analyzed for journal publication rates, with most being thematic posters 419 (54.8%) followed by posters, 276 (36.1%), and oral presentations 69 (9.0%). The median number of authors was six, and most were from the US 143 (18.7%). At the ERSc, the UK had the highest number of presentations 75 (16.4%), while the US had the highest number of presentations at the ATSc.

The authors responded to e-mails regarding full-text publications after presenting the abstracts in 41.9% of the contacts. Among the authors who responded, the reasons for not publishing the studies in an article format were: not having funding; author lack of time; abandonment by the first author; interruption of research carried out by their students; lack of budget; authors assumed that their findings were not relevant; authors started another more interesting project; retirement; lack of control group; small sample;

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**Figure. 1** Flow diagram of search strategy.

received a negative peer review and were rewriting to submit to another journal, and published as a book chapter or thesis. In 22 (4.0%) abstracts, the author's e-mail contacts could not be found. In 322 (42%) abstracts, no journal article was found related to the study and no response was obtained from the author, which was classified as "uncertain publication".

A total of 323 published articles related to pulmonary rehabilitation abstracts were identified, resulting in a publication rate of 42.3%. A flowchart of the study is presented in Fig. 1. Categorization by mode of presentation proportionally showed that 46 (66.7%) oral presentations, 128 (46.4%) poster discussions, and 149 (35.5%) thematic posters were published as articles. The median IF of the journals is 3.4

(2.6–6.4). Significant and positive results were reported in 253 (78.3%) of the identified articles.

The publication rate of 42.3% corroborates the publication rate variation for biomedical research described in the literature, ranging from 19 to 60%. Articles related to abstracts previously presented as oral presentations were the most published (66.7%). These results corroborate those of previous investigations in which oral presentations were published more often than posters.<sup>2</sup> In this study, researchers found that abstracts with statistically significant findings were more likely to be published than those with non-significant results. This observation supports the notion of potential publication bias in the literature. This is probably due to the strict selection criteria for oral presentations and dialogue between the authors and panelists.<sup>6</sup>

Although the searches were restricted to only two databases, this limitation was overcome by contacting authors who had the opportunity to inform the publication status of their abstracts.

This study found that only two of the five abstracts presented at scientific meetings were published in journals. Efforts must be made to increase the journal publication rate of studies presented at conferences. One suggestion is continuing education, which can be offered through various workshops during scientific events, aiming to improve editorial skills, especially for young researchers. Another strategy would be to encourage multicenter studies involving the collaboration of young researchers.

In conclusion, over half of the abstracts on pulmonary rehabilitation presented at the ERSc and ATSc from 2016 to 2018 remain unpublished. Strategies for improving the conversion of abstracts into journal articles are required.

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## Authors' contribution

C.M., C.C.O., A.J., and T.M.D.O. participated in the conception and design of the study, data analysis, and interpretation, critical review of relevant intellectual content, and final approval of the manuscript to be submitted. G.S.G., E.F.T., D.F.S., and M.J.X.R. were involved in data

acquisition, article writing, and final approval of the submitted version.

## Conflicts of interest

All authors declare no conflicts of interest.

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