



## Original Article

## Contribution of national congress presentations to scientific literature: An analysis of efficiency

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## 1. Introduction

Emergency medicine (EM) is one of the oldest specialties in medicine because individuals are faced with situations requiring an emergency response from the very first moment of their existence. Despite being so old, EM was officially regarded as a branch of science around the world in 1960. In Turkey, it was accepted as a specialty in 1993.<sup>1</sup> Emergency medicine is a young and rapidly developing branch of science in Turkey.

The EM congress was held for the first time in Turkey in 2001. Since 2004, congresses have been organized under the guidance of EM associations in Turkey, which are still continuing their activities. National and international congresses provide an environment for scientific studies that allows these studies to be discussed and improved, and enhance their quality. Similarly, the presentations given at the EM congresses have an important place in showing the contributions of EM, which is still developing, to the science. The publication of presentations given at the scientific congresses in peer-reviewed journals is one of the indicators of the scientific quality of both these scientific studies and congresses. However, all these presentations could not reach the stage of publication as expected. The scientific publication rate (PR) of presentations given at the congresses held in Turkey and foreign countries varies between 13% and 74%.<sup>2</sup>

The present study aimed to research the PRs of presentations given at 9th Turkish Emergency Medicine Congress (9th TEMC) and 9th National Emergency Medicine Congress (9th NEMC) held by two different national EM associations in 2013 in peer-reviewed journals in the subsequent 4 years. The study also aimed to examine the factors that might affect the publication of presentations and the characteristics of peer-reviewed journals in which the presentations were published.

## 2. Methods

## 2.1. Study design

This cross-sectional study searched the databases, such as PubMed/

MEDLINE, Google Scholar, Cochrane, to retrospectively examine the publication of the abstracts of oral presentations and poster presentations given at 9th TEMC and 9th NEMC held by two different national EM associations in 2013 in peer-reviewed journals. The abstracts of presentations were obtained from the conference proceedings published by both associations. This study investigated the number of these presentations published within the 4 years after the congress date. An ethics committee approval was received for this study.

## 2.2. Literature search

For each presentation, the databases were searched by the title of presentation first, and then the name and surname of authors. The search continued by reducing the number of authors at each step. Then the first author's name was left, and the search was repeated including the keywords in the search. Moreover, the Google Scholar profiles of the authors, if available, were also searched. The institution where the first author works was based on as the institutions where the studies published were conducted. Moreover, alterations found in the published presentations were examined in two categories: minor inconsistencies (alteration of the first author, change in the author list, and alteration in the title) and major inconsistencies (alteration in the hypothesis and design of the study, differences in findings, and differences in results). Two EM specialists took part in the data searching process. The publication status of each presentation was evaluated individually by these two researchers.

## 2.3. Variables

1. The PR of presentations by the years and the time elapsed until their publication dates
2. The publication status of presentations in peer-reviewed journals by two different congresses and the type of presentation (oral or poster)
3. The type and design of the study (three categories: case, original study, and review/letter to the editor)
4. The distribution rates of published presentations by their subjects

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(nine categories as classified in the 9th NEMC)

5. The journals in which the presentations were published and their characteristics, their impact factor (IF) if available on the date of publication, journal index [two categories: Science Citation Index (SCI)/Science Citation Index-Expanded (SCI-E) and other], and whether national or foreign journal
6. The characteristics of the institution where the scientific study was conducted (university, training and research hospital, and state hospital), number of institutions (multicenter or single center), first-author compliance, and the number of authors
7. The presence of minor and major inconsistencies that may exist in the published version of the presentation

#### 2.4. Statistical analysis

The frequency of presentations being published was found to be 33.2% in a study conducted by Chan et al., and the sample size (test power: 80%; margin of error: 5%) was calculated to be 341.<sup>3</sup> The Statistical Package for the Social Sciences 20.0 program (SPSS Inc., Chicago IL, USA) was used to statistically analyze the data. Median, interquartile ranges, mean, and standard deviation were used as descriptive statistics for continuous variables, and the percentage and frequency values were used for categorical variables. The suitability of continuous variables for normal distribution was analyzed using the Kolmogorov–Smirnov test. The Mann–Whitney *U* test was used to compare the two-group means of non-normally distributed continuous variables. The independent samples *t*-test was used to compare the group means of normally distributed continuous variables. The chi-square test was used to compare categorical variables. The effect of alterations made in the presentations during their publication process on the delay in the duration of publication was assessed using the Kaplan–Meier analysis. Logistic regression was used to identify the odds ratio (OR) and 95% confidence interval (CI) for factors related to publication success. A *P* value < 0.05 was set as the level of significance. The interobserver agreement was analyzed by kappa analysis.

### 3. Results

This study examined 1428 presentations given at two separate congresses held by two national EM associations in 2013. The agreement between two researchers was found to be significant and high ( $k = 0.98$ ;  $P < 0.001$ ). Of the presentations, 226 (15.8%) were published in peer-reviewed journals within the 4 years following the congresses, and of them, 142 (62.8%) were given at the 9th NEMC and 84 (37.2%) at the 9th TEMC.

The number of presentations published by the years was 66 (46.5%) in the first year, 49 (34.5%) in the second year, 17 (12%) in the third year, and 10 (7%) in the fourth year for the 9th NEMC; and 48 (57.1%) in the first year, 19 (22.6%) in the second year, 11 (13.1%) in the third year, and 6 (7.1%) in the fourth year for the 9th TEMC (Fig. 1). Of the all presentations, 114 (50.4%) were published in the first year. The median and inter-quartile range (IQR) for the duration of publication of all presentations were 12 and 14 months, respectively. No significant difference was found between these two congresses in terms of duration from presentation to publication.

Of the presentations, 1229 (86.1%) were poster presentations and 199 (13.9%) were oral presentations. This study found that 105 (15.4%) of 683 poster presentations and 37 (33.6%) of 110 oral presentations given at the 9th NEMC and 58 (10.6%) of 546 poster presentations and 26 (29.2%) of 89 oral presentations given at the 9th TEMC were published. For all these presentations, a significant relationship was found between the type of presentation (oral/poster) and their PR. In total, 63 (31.7%) of 199 oral presentations were published, while 163 (13.3%) of 1229 poster presentations were published (OR = 3.03, 95% CI = 2.15–4.20,  $P < 0.001$ ; Fig. 2).

The assessment of all presentations showed that the publication rate of original studies, case reports, and reviews/letters to the editor was 17.1% ( $n = 244$ ), 81.4% ( $n = 1163$ ), and 0.3% ( $n = 4$ ), respectively. Of the presentations, 1.2% ( $n = 17$ ) was the experimental study. The rate of randomized controlled trials was 1.5% ( $n = 22$ ). Of the original studies, 7.8% ( $n = 112$ ) were designed as a prospective study, while 9.2% ( $n = 132$ ) were designed as a retrospective study. The results of bivariate analysis showed that the success of being published was high in original studies (OR = 5.1, 95% CI = 1.81–14.40,  $P = 0.002$ ), but this success decreased for the case reports (OR = 0.03, 95% CI = 0.01–0.09,  $P < 0.001$ ). Similarly, although the PRs of experimental studies and randomized controlled trials were 70.6% and 72.7%, they were found not to have any significance on the success of publication. No significant relationship was found between the types of studies and their duration of publication.

The distribution of presentations published by their topics is illustrated in Fig. 3. Surgical emergencies and internal emergencies were ranked first and second with 25.2% and 22.1%, respectively.

The presentations were found to be published in 103 different peer-reviewed journals, and the IF median value was 0.66 and IQR was 0.93. Of these, 42 (40.8%) were national journals and 61 (59.2%) were foreign journals. Of all the presentations, 128 (56.6%) and 98 (43.4%) were published in national and foreign journals, respectively. A multivariate analysis was used to examine the effect of type of presentation, congress, institution where the study was conducted, and their numbers on the chance of being published in foreign journals. This study found that the university-sourced studies were published in foreign journals at high levels (OR = 2.38, 95% CI = 1.09–5.00,  $P = 0.002$ ).

The rate of presentations published in the SCI/SCI-E indexed journals was 29.6%. This study found no significant difference between the congresses in terms of the indexes of journals in which the presentations were published ( $P > 0.005$ ). The journals in which the presentations were published, their indexes, the types of institutions where the studies were conducted, and their numbers are given in Table 1. Of the studies published, 123 (54.4%) were conducted at universities, 87 (38.5%) at training and research hospitals, and 16 (7.1%) at state hospitals. The number of single-center studies was 216 (95.6%) and that of multicenter studies was 10 (4.4%). No significant relationship was found between the characteristics of institutions where the studies were conducted and their PR.

The rate of first-author compliance in the published form of the presentations was 89.4%. The mean number of authors in the publications was  $5.6 \pm 1.83$ , varying between 1 and 11. A significant difference existed between the type of presentation and the number of authors in the publication, and the number of authors was higher in the oral presentations (mean difference =  $-1.14$ , 95% CI =  $-1.66$  to  $-0.64$ ,  $P < 0.001$ ). Of the presentations published, 135 (59.7%) and 17 (7.5%) had minor inconsistency and major inconsistency, respectively. This study found a significant relationship between the presence of inconsistency in the presentation and its publication, and the duration from the presentation to publication. The survival curve of this relationship is illustrated in Fig. 4 (hazard ratio = 0.69, 95% CI = 0.53–0.90,  $P < 0.001$ ).

### 4. Discussion

Scientific congresses provide quick information transfer, summarization of existing studies, and advancement of future research studies through the presentations. Some of these reports extend their transfer area and reach larger masses within a certain period of time after the congress, which is only possible when they are published in peer-reviewed journals. The PRs of presentations tend to reach a plateau after 4 years following the congresses.<sup>4</sup> Therefore, a 4-year period was addressed in this study. The PRs found in the present study were quite lower compared with the international EM congresses except for the Asian Conference on Emergency Medicine held in 2004, and they were

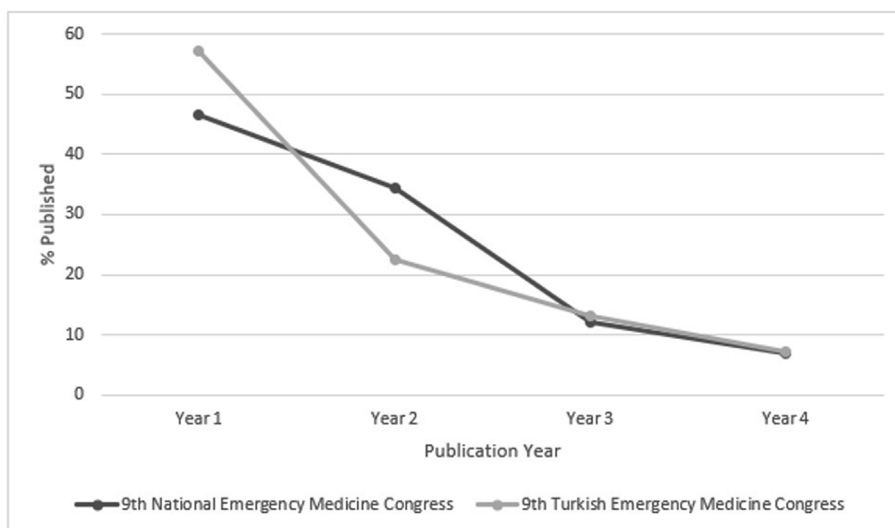


Fig. 1. Illustration of publication rates of presentations given at two congresses held by two national emergency medicine associations in 2013 in peer-reviewed journals within the subsequent 4 years. Most of the presentations were found to be published within the first 1 year after they were presented at the congresses.

similar to the PRs of presentations given at national congresses held by associations for other specialties.<sup>5-9</sup> The main problem at this point was thought to result from preparing the presentations (which were prepared in the native language for national congresses) in English during the publication process,<sup>3</sup> which may discourage authors and make the revision process difficult. Ehara et al. found that in the process of publication, studies conducted in countries having English as native language were more accepted by the journals compared with those conducted in countries not having English as a native language.<sup>10</sup>

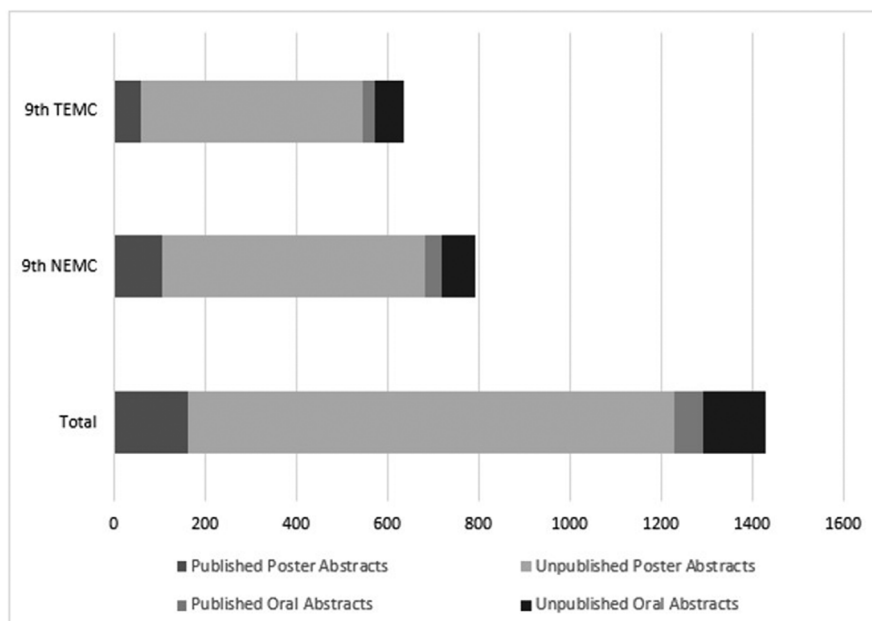
The present study found that the publication duration of presentations was in compliance with mean and median reported in the previous studies.<sup>11,12</sup> It was also found that more than half of the presentations were published in the first or second year following the congresses, which was also consistent with the literature.

The number of poster presentations was found to be considerably higher compared with that of oral presentations in both congresses.

However, the PRs of poster presentations were found to be dramatically low, although the number of oral presentations was high. Despite the fact that studies in the literature reported that the scientific publication value of poster presentations was lower, very few of these studies could prove that statistically.<sup>5,6,8,13,14</sup> In this respect, the present study is thought to be valuable.

Most of the presentations in the present study consisted of case reports. Studies in the literature stated that the PR of case reports was low, and this numerical superiority was not an advantageous situation.<sup>15,16</sup> The present study found that the success of being published was high in original studies, and this success decreased statistically significantly in case reports. As in the orthopedics, general surgery, and radiology, EM is an important specialty in terms of case diversity. The high number of case reports in the present study was thought to be one of the reasons for a decrease in their PRs.

The assessment of IF and indexes of the journals in the present study



9th TEMC, 9th Turkish Emergency Medicine Congress; 9th NEMC, 9th National Emergency Medicine Congress.

Fig. 2. Illustration of publication rates of presentations in both congresses within the subsequent 4 years by their types. As evident from the graph, oral presentations were converted into scientific publication at a higher level.

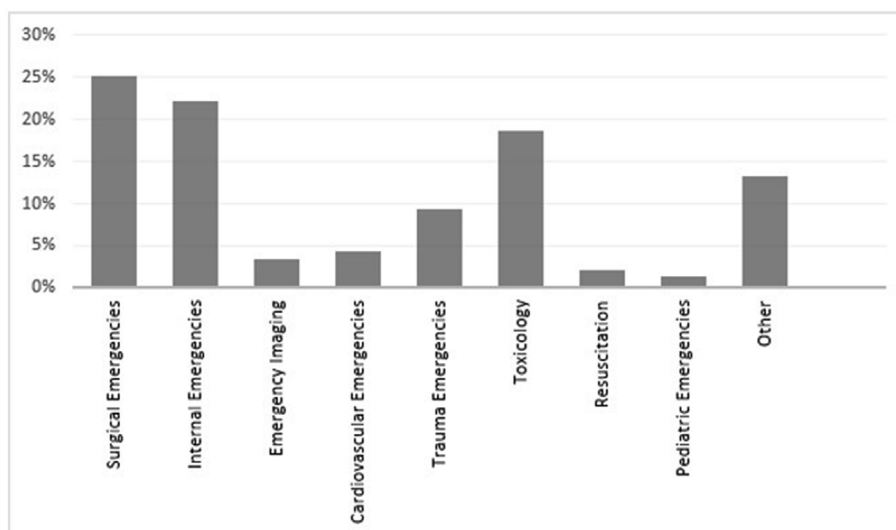


Fig. 3. Distribution rates of congress presentations published by their topics. Surgical emergencies and internal emergencies were ranked first and second with 25.2% and 22.1%, respectively.

showed that the mean/median IF value and the rate of publication in SCI/SCI-E indexed journals were quite low compared with the literature.<sup>5,15,17</sup> Because there is no national study on EM examining the IF, the large difference between the present study and the studies on other specialties may be related to the high number of case reports, foreign language problem, and the IF values of national EM journals. The PR of presentations given at European Society for Emergency Medicine Congresses 2012, which was held 1 year ago and included 618 presentations from Turkey, in SCI/SCI-E indexed journals was about twice the rate in the present study; this might be because the former one is an international congress.<sup>5</sup>

The present study found that the majority of published presentations belonged to studies conducted in university hospitals, consistent with the literature,<sup>18</sup> and might be due to the lack of time required for academic studies because of patient density in other institutions. The present study found that university hospital-sourced studies were published in foreign journals at high levels. On the basis of this result, it can be stated that a significant relationship existed between the type of institution and the quality of study conducted.

The rates of first-author compliance and the minor and major inconsistencies between the presentation abstract and the publication

form were similar to those in the literature.<sup>6,15</sup> Moreover, a study conducted by Balasubramanian et al. reported that any and every inconsistency affects the publication duration of presentations.<sup>14</sup> The present study also found a significant relationship between the presence of inconsistency and the publication duration, which might be because the revisions made in the presentation in the process of publication had extended the period of total publication.

## 5. Limitations

This study examined the PRs of presentations within 4 years following the congress, and it did not examine those which were published after the relevant period. Therefore, it is likely that some presentations, which became publications, were not identified. However, a five-stage data search was conducted by two separate EM specialists for each presentation to ensure that this probability was kept at a minimum level. This study was not designed in a way that questions why the authors could not get their presentations published. A similar study to be conducted by contacting authors may help develop new approaches to increase the PRs.

Table 1

Journals in which the presentations were published, their indexes, the types of institutions where the studies have been conducted, and their numbers.

Journal name	Journal index	Institution type				Total
		University	Training and research hospital	State hospital	Multicenter	
Journal Of Academic Emergency Medicine	Other	10	24	–	6	34
Turkish Journal of Emergency Medicine	Other	11	7	1	–	19
Acta Medica Mediterranea	SCI/SCI-E	5	4	–	–	9
Journal of Experimental and Clinical Medicine	Other	6	2	1	1	9
American Journal of Emergency Medicine	SCI/SCI-E	5	4	–	–	9
Cukurova Medical Journal	Other	1	5	2	–	8
Journal Of Pakistan Medical Association	SCI/SCI-E	6	1	–	1	7
Journal of Clinical and Analytical Medicine	Other	3	3	1	–	7
Causapedia	Other	1	1	2	–	4
Hong Kong Journal of Emergency Medicine	SCI/SCI-E	1	2	–	–	3
Turkish Journal of Trauma and Emergency Surgery	SCI/SCI-E	2	1	–	–	3
Academic Emergency Medicine	SCI/SCI-E	2	1	–	–	3
Journal of Surgical Arts	Other	1	2	–	–	3
Other		69	30	9	2	108
Total		123	87	16	10	226

SCI: Science Citation Index; SCI-E: Science Citation Index-Expanded.

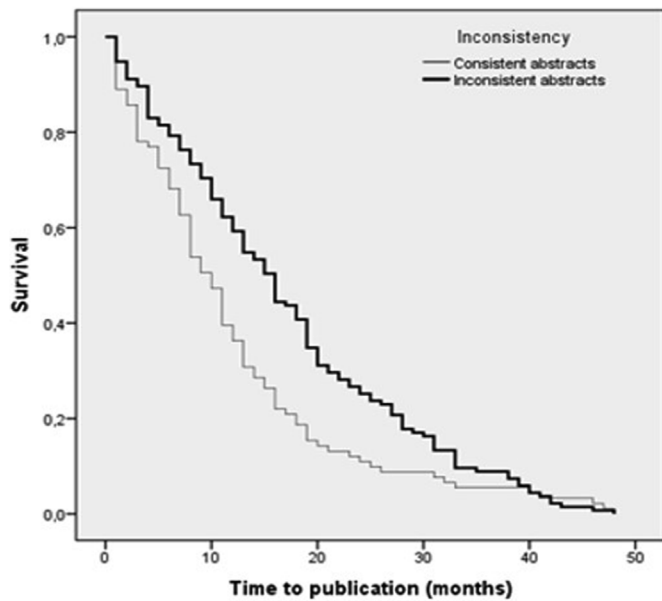


Fig. 4. Publication “survival” curves. This study found a significant relationship between the presence of inconsistency in the presentation and its publication, and the duration from the presentation to publication.

## 6. Conclusions

The PRs found in this study were quite low compared with the international EM congresses, and they were similar to the PRs of presentations given at national congresses held by other specialty branches. Most of the presentations in the present study consisted of case reports. The high number of case reports in the present study was thought to be one of the reasons for a decrease in PRs.

The authors should be encouraged to conduct scientific studies instead of collecting cases. Initiatives such as seeking for the characteristics that increase the chance of being a publication in future during the process of approval of presentations for the congresses and holding sessions to encourage participants of congresses to conduct high-quality scientific studies and for foreign language might affect the number and quality of studies on EM positively.

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## Conflicts of interest

None declared.

## Prior presentations

This work has been presented as an oral presentation 14th Turkish Emergency Medicine Congress, November 8–11, 2018, Antalya/Turkey.

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