



A critical analysis of publication rates of national oncology meeting abstracts in Turkey

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ABSTRACT

Purpose: In this study our aim is to analyze the publication rates of abstracts, which were presented between 2006 and 2011 years in biennial National Cancer Meeting of Turkey (NCM) and Turkish Medical Oncology Society Meeting (TMOSM) and to determine the timely change of publication rates and to predict the quality of the abstracts.

Methods: All abstracts, which are either accepted as podium or poster presentations in NCM and TMOM between 2006 and 2011, are extracted. Subsequent publication rate of those abstracts were defined by searching PubMed and Turkish Medical Index.

Results: Between 2006 and 2011, overall 2451 abstracts were presented in annual NC and TMOS meetings. Of these 2451 abstracts, 286 of them (11.7%) were published in consecutive years. Median publication interval was 11 months. While 28 of 286 (9.8%) abstracts were published in national journals, 258 of them (90.2%) were published in international journals. 97 of a total of 424 podium presentations (22.9%) were published. The publication rate was correlated with the type of presentation (OP vs. PP: 22.9% vs. 9.3%, $p < 0.001$). The highest publication rate was for prospective studies (14.4%). Majority of abstracts (53.1%) were published in journals indexed within the science citation index (SCI). Rest of the published abstracts were in index of SCI-expanded.

Conclusions: Non-publication of research abstracts is a problem for 88.3% of abstracts of this study. The data presented in this study should lead abstract authors to criticize themselves and find a way to improve their study quality.

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1. Introduction

Oncology is a field in constant progress. Physicians should always stay updated, and synchronize with new achievements; otherwise it would end up with lower quality of medical care and even decreased survival outcomes of patients.

Oncology meetings are important events for sharing knowledge. In addition, those meetings are important steps in the lifespan of a clinical trial, since they are the first places in which the results of trials are mentioned, published and received acceptance.¹ The abstracts presented in the meetings have an important place in a researcher's academic training, as well.²

It is widely accepted that scientific quality of meetings depends on accepted abstracts as oral and poster presentations.³ Acceptance of abstracts as the earliest scientific evidence is a controversial issue for many years. In order to accept abstracts as scientifically approved material, quality of abstracts should be measured methodologically. One way to measure the quality of abstracts is to look at their publication rates.

The publication rates varies between 31.6% and 74% from various medical specialty meetings.^{1,3–8} In oncology, publication process is even more important than other specialties; because new developments are not easily achieved, translational medicine is hard to complete and every effort should be made to improve medical care to save lives. A previous Cochrane review reported that the publication rates of abstracts presented in oncology meetings were ranged between 35.5% and 81.3%.⁹

In this study our aim is to analyze the publication rates of abstracts, which were presented between 2006 and 2011 years in biennial National Cancer Meeting of Turkey (NCM) and Turkish

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Medical Oncology Society Meeting (TMOSM) and to determine the timely change of publication rates and to predict the quality of the abstracts.

2. Material and methods

2.1. Identifying abstracts

All abstracts, which are either accepted as podium or as poster presentations in NCM and TMOM between 2006 and 2011, are extracted. Current evidence suggests that optimal duration for the studies presented in a meeting to be published is a 2-year period. Based on this assumption, authors concluded that a 5-year period would be reasonable for allowing a presented study to be published. The data collection was completed in December 2016, and a final date of presentation was regarded as the 2011 meeting to allow the final studies to be published in this 5-year period. The window of 5-years to evaluate the abstracts led the study to include presentations between 2006 and 2011. This 5-year period was a consideration of the authors, and was not based on any specific criteria. The abstracts were retrieved from abstract books of related meetings and recorded in a database. In order to eliminate investigator-related biases, all of these abstracts were extracted and analyzed by two independent researchers. In total, 2461 abstracts were investigated, and those abstracts were further subclassified according to their primary researcher type and the main topic; as well as type of presentation, trial design. Also the abstracts were subgrouped for being as multicentric or multidisciplinary.

2.2. Searching for subsequent peer-reviewed journal publications

The primary study outcome was time to publication in peer-reviewed journals. Subsequent publication rate of those abstracts were defined by searching PubMed and Turkish Medical Index. The name of corresponding author, the title of abstract, keywords and if necessary a combination of these terms were searched. If the search was not successful than co-authors were searched by the same method. If no article could be located by two searches than the abstract was accepted as unpublished.

The search was complete once we established as a manuscript. For an abstract to be classified as published, the corresponding article should match the name of abstract or should report the same intervention and have at least one of author in common. The

discrepancies between two reviewers were discussed and resolved by consensus.

After the verification of an abstract as a peer-reviewed article, the duration between the presentation at meeting and publication was noted. The name, field (medical oncology, etc.), origin (national or international) and impact factor of journals were documented.

2.3. Statistical analysis

In the descriptive analyses of study, categorical data were presented as frequencies and percentages. Group comparisons were conducted with chi-square test for categorical data and Mann Whitney *U* test for numerical data. A type-1 error level of 5% was used in analyses. The statistical analyses were performed by using PASW v18.0 software (IBM Inc, USA).

3. Results

Between 2006 and 2011, overall 2451 abstracts were presented in biennial NC and TMOS meetings. Of these 2451 abstracts, 286 of them (11.7%) were published in consecutive years. Median publication interval was 11 months. Sixty-sixth percent of all abstracts were published within 1 year. Overall in 2 years period 85% of abstracts were published. The change in publication rates within years was shown in Fig. 1. There was a significant drop in publication rate of abstracts (19.2% in 2006 and 7.1% in 2011; $p < 0,001$). We found that 66% of abstracts were published in 1 year and 85% published in 2 years.

In general, most of the published articles were from abstracts of adult oncology group (84%). Only 10% of pediatric group and 5% of nursing group abstracts were published. While 28 of 286 (9.8%) abstracts were published in national journals, 258 of them (90.2%) were published in international journals.

The main characteristics of published and unpublished abstracts were outlined in Table-1.

There was no statistically significant difference in the number of authors when published and unpublished works were compared (a median of 6.7 vs. 6.3; $p = 0,077$). And there was no statistically significant difference in abstracts according to the enrolled patient numbers ($p = 0.06$).

In general, the most popular topic was breast cancer (430 abstract-%20 publication rate), with lung cancer following it (199-7%). The other common abstract topics were head and neck cancers

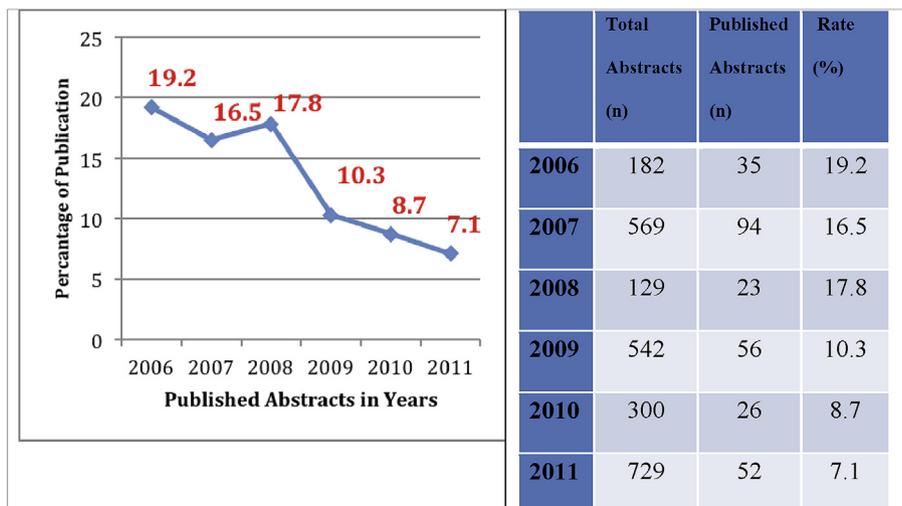


Fig. 1. The change in publication rates within years.

Table 1
The main characteristics of published and unpublished abstracts.

	Unpublished Mean ± SD	Published Mean ± SD	p
Number of authors	6.3 ± 3.8	6.7 ± 2.45	0.077
Sample size	265.2 ± 2123.0	551.2 ± 5027.9	0.364
	n (%)	n (%)	p
Presentation Type			<0.001
Oral	1838 (90,7)	189 (9,3)	
Poster	327 (77,1)	97 (22,9)	
Study Type			0.671
Retrospective	1860 (88,5)	242 (11,5)	
Prospective	148 (85,5)	25 (14,5)	
Survey	130 (89)	16 (11)	
Research Type			<0.001
Case report	807 (91,9)	71 (8,1)	
Single group	819 (86,4)	129 (13,6)	
Uncontrolled two group	31 (88,6)	4 (11,4)	
Controlled	99 (75,6)	32 (24,4)	
Other	384 (89,1)	47 (10,9)	
Multidisciplinary			<0.001
No	1027 (92,1)	88 (7,9)	
Yes	1117 (85,2)	194 (14,8)	
Study Population			0.739
Pediatric	213 (87,7)	30 (12,3)	
Adult	1833 (88,4)	241 (11,6)	

(142-7%), colorectal cancers (134-7%) and lymphoma (150-6%).

97 of a total of 424 podium presentations were published. The rate was 22.9%. On the other hand, only 9.3% of poster presentations were published. The publication rate was correlated with the type of presentation (OP vs. PP: 22.9% vs. 9.3%, $p < 0.001$).

The abstracts were classified further by design and trial method. Of a total of 2451 presented abstracts, 38.7% were single cohort studies, 35.8% were case reports and 6.7% were randomized controlled studies. There was a significant increase in submitted case report abstracts within years ($p < 0,05$). The highest publication rate was for prospective studies (%14.4). On the other hand, 1.2% of retrospective studies were published. Eleven percent of the cross-sectional descriptive studies (including questionnaires/surveys) and retrospective studies became peer-reviewed articles. Publication rates within years according to trial methods and designs were shown in Figs. 2 and 3.

Of 1311 multidisciplinary abstracts, 194 were published (14.8%). And, in a total of 365 multicentric trial abstracts, 75 were published

(20,5%).

Although 15% of laboratory studies and 14.2% of epidemiological studies were published, only 11.2% of clinical trials were published.

When the publication rates of two different meetings were compared. No statistically significant difference was found (%11 vs. %13.7; $p = 0,065$).

After verifying the publication of abstracts, using the classification rules defined by Turkish Medical Index, the journals were further grouped according to their impact factor as group A (journals with top strength 25%), group B (journals with middle 25%) and group C (lowest 50%). Majority of published abstracts were included in group C (65,5%). The distribution of abstract articles according to journal impact group is shown in Figure-4. Majority of abstracts (53.1%) were published in journals indexed within the science citation index (SCI). Rest of the published abstracts were in index of SCI-expanded. Only 5,8% of abstracts were not indexed at all.

4. Discussion

The National Cancer Meeting of Turkey (NCM) and Turkish Medical Oncology Meeting (TMOM) are two biennial oncology meetings of Turkey. Thousands of people from various professions all over the country participate every year in scientific sessions, podium and poster presentations. In 5 years, a total of 2461 abstracts were presented. Only 11.7% of those abstracts eventually became full-length manuscripts, a ratio that is far less than those of previous studies in other specialties.^{1,6,8,10–12} These rates were below the publication rates of oncology trials as well.^{1,4,7,9,13,14}

We examined the abstract books as two separate investigators in order to decrease the probability of investigator bias. Both PubMed and National Publication Index of Turkey were searched hence it is not likely that the low rates are due to an information bias. The decrement in publication rates throughout the years is, in fact, an interesting finding. We chose 2011 as the final year of the meetings, since previous studies which showed majority of publications would have done within 2 years.^{1,7–10} We also found that 66% of abstracts were published in 1 year and 85% published in 2 years.

There can be several reasons for the low publication rates. First of all, it can be due to methodology of the abstracts. It is remarkable that the majority of abstracts were case reports (50% in 2010). Previous studies failed to show the trial methodology as a separate prognostic indicator.¹⁵ Thus, we do not know whether other meetings had a different ratio of case reports. It is generally

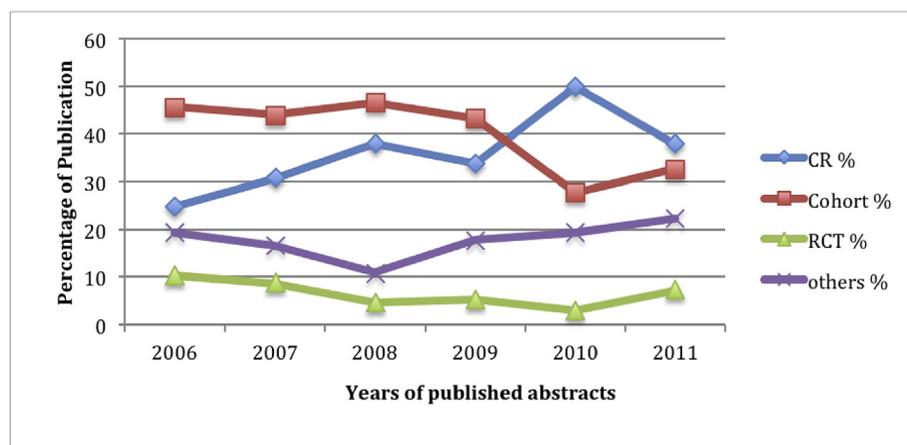


Fig. 2. The change in publication rates within years according to study design (CR: Case report; RCT: Randomized-controlled trial).

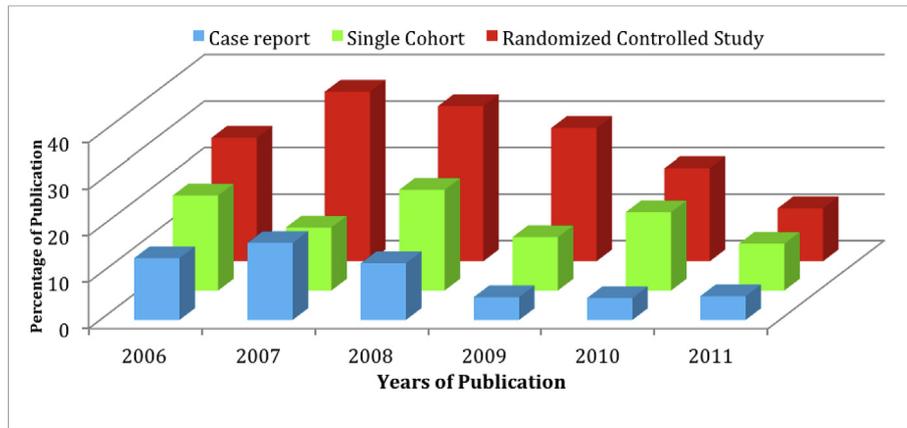


Fig. 3. The change in publication rates within years according to trial method.

accepted that case reports or case series are prone to bias^{1,16} and most of the high impact journals hardly accept case reports to be published. The wide range of quality of case report abstracts is well-known, but it is also possible that authors did not find their work valuable as a case report for publication. This could be another determinant for publication. Also, there are few journals that accept case report, it would have required much more time to publish those case reports when compared to RCT or cohort studies. Whereas the publication rate decreased overall in years, the publication rates of randomized controlled trials and single cohort studies increased.

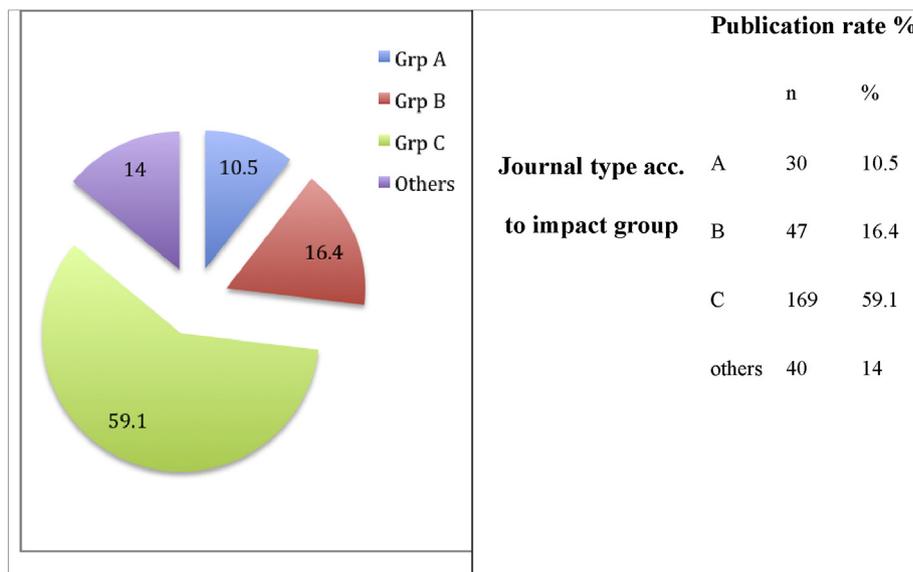
In some countries educational boards of oncology financially support to physicians to attend meetings if they contribute to meeting with an abstract.⁵ Moreover, in Turkey, there is a continuous support to physicians to attend the meetings. For trainees, this is an academically encouraging strategy. The ratio of case reports could be high due to that support as well. Yet, for writing full manuscripts, a similar reward process does not exist. It could be estimated that the increasing rate of case report abstracts was the major reason behind the overall decline in years.

There could be significant differences between the review processes for the editorial committee of the meeting and the ones for

peer-reviewed journal. According to our results, podium presentations were published more than poster presentations (23% vs. 9%; $p < 0,001$). This is supported by results of previous studies.^{1,8} Therefore, the difference of selecting committee would have had a minor impact on publication rate of this study. Additionally, the preparation of an abstract takes less time and effort than writing a full manuscript. Previous studies reported that one of the main problem in publication is the lack of time.^{1,10,17,18} Alternatively, there could have been mistakes or drawbacks in abstracts that are not detected until the process of writing of full manuscript. This could have prevented the abstract from being published.

In this study, abstracts reporting randomized trials were published more than epidemiological or questionnaire/survey studies ($p < 0.005$). In general, preclinical research abstracts are more likely to be published, since there are more effort and planning in the background of those studies.^{5,19} It is also supported by this study that prospective trials take place in peer-reviewed journals more than retrospective studies (14.4% vs. 1.2%, $p = 0.05$)¹.

Most of the researchers and authors agree that impact factor is a valid indicator of scientific quality of a journal.^{4,7–9,13,19} Although the publication rate in this study was low, majority of abstracts were published in journals that were indexed in SCI or SCI



Publication rate %			
Journal type acc. to impact group			
	n	%	
A	30	10.5	
B	47	16.4	
C	169	59.1	
others	40	14	

Fig. 4. Distribution of manuscripts of abstracts due to impact groups.

expanded (94.2%). This can be accepted as a quality indicator of both the abstracts and the manuscripts which have become full-text articles but quality of majority of abstracts remained to be un-established and open to discuss.

Certain limitations of this study deserve consideration. In general, there could be several reasons for abstracts not to be published.¹⁸ There could be logistic reasons such as lack of time. Authors' belief in their quality of work or the effect of negative result on publication. Furthermore, having similar results with already published studies could influence whether the abstract is published. Yet unfortunately, we did not ask authors for details of unpublished abstracts. We did not make in-depth search for the unpublished articles besides searching for co-authors, similar methodology or hypothesis. Therefore, some manuscripts could have been missed. Citation numbers of already published abstracts could have been investigated further for determination of quality of meeting abstracts, but we were not able to, due to having a relatively small group of abstracts that became eventually full manuscripts. More abstracts could have been published if the updated search time could be expanded beyond April 2013. Although final date for meeting abstracts was chosen as 2011, a delay could have been occurred. There are many steps between completing an abstract and the full manuscript. The authors could be asked submission attempts and the submitted journals of their manuscripts before accepting them as unpublished.

5. Conclusion

Non-publication of research abstracts is a problem for 88.3% of abstracts of this study. In a Cochrane metaanalysis, Scherer et al. analyzed a variety of presented abstracts and their fate as peer-reviewed articles. They combined data of 79 reports (29.729 abstracts) from a diverse content of specialties and found that full publication rate was 44.5% (95% CI 43.9–45.1). Turkey's major oncology meeting abstracts did not reach a quality level of international meeting abstracts according to the results of this study. This is a serious warning sign for scientist in Turkey since International Committee of Journal Editors does not accept abstracts as clinical evidence.²⁰ Failure to publish an abstract in full-text manuscript can result in waste of effort, deficiency of evidence and also replication in science. Therefore, authors should give all their effort to publish their work. The low publication rate could be also due to authors' lack of motivation to publish their work. Academic media and education counselors should provide the researchers more encouraging methods to publish peer-reviewed articles. This is especially important for young oncologists who begin their academic life recently.

The data presented in this study should lead abstract authors to criticize themselves and find a way to improve their study quality.

Declaration of interest

The authors have nothing to declare.

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