

Brief Communication

Rate of full publication of presentations from the Saudi Association of Neurological Surgery meetings

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Scientific meetings allow professionals working in the same field to share knowledge and to rapidly disseminate new research findings. The publication rate of abstracts presented at a scientific meeting, also known as the abstract to publication ratio, is a way to assess the scientific impact of a meeting. This was examined for a number of disciplines, and the average publication rate was found to be 45%.¹ Over the last decade many scientific societies were established in the Kingdom of Saudi Arabia (KSA) and most have been organizing regular annual scientific meetings. However, there is a lack of information evaluating the publication rates of abstracts presented during any of the Saudi medical society's scientific meetings. The objectives of this study are to determine the publication rates and the factors predictive of publication of abstracts presented during the annual meetings of the Saudi Association of Neurological Surgery (SANS), a national scientific society established in 2007.

The study was carried out at the Department of Surgery, King Khalid National Guard Hospital, Jeddah, KSA between January and February 2013. Abstracts of papers that were orally presented during the first 6 SANS Annual Meetings (2007-2012) were collected from the program and abstract books of each meeting. The presentations' titles and the authors' names were searched in "PubMed" and "Google Scholar" to identify the presentations that were published as full articles in peer-reviewed journals. We excluded presentations that were carried out by invited international guest speakers. The following data were collected for each presentation: the year, the presenter's rank, the presenter's center, the center's university status, the center's region, and the presentation's subspecialty. The following data were collected for each published article: the publishing journal, whether the journal was neuroscience-related or general, and whether it originated from KSA or from outside KSA. In addition, using GraphPad QuickCalcs Software chi square calculator, the influence of

the year of presentation, the presenter's rank, the center's university status, the center's region, and the presentation's subspecialty on the publication rates were examined statistically for significance.

The total number of oral presentations during the first 6 SANS Annual Meetings were 273. The distribution of the total presentations in relation to the year, the presenter's rank, the center's university status, the center's region, and the presentation's subspecialty are summarized in Table 1. The most frequently presenting KSA centers and their presentation numbers were: King Khalid University Hospital, Riyadh: 37 (14%), King Fahad Medical City, Riyadh: 35 (13%), King Faisal Specialist Hospital and Research Centre, Riyadh: 32 (12%), King Fahad University Hospital, Khobar: 22 (8%), King Khalid National Guard Hospital, Jeddah: 14 (5%), King Abdulaziz University Hospital, Jeddah: 14 (5%), King Fahad Specialist Hospital, Dammam: 14 (5%), and Taibah University, Madinah: 11 (4%). The most frequently presenting countries outside KSA and their presentation numbers were: Egypt: 15 (5%), United Arab Emirates: 5 (2%), Lebanon: 4 (1%), and Oman: 2 (1%). The total number of articles that were published in peer-reviewed journals was 35. Hence, the abstract to publication ratio for papers presented during the first 6 SANS annual scientific meetings was 13%. The timing of publication and the article numbers were: prior to presentation 5 (14%), within the same year of presentation: 12 (34%), one year later: 12 (34%), 2 years later: 5 (14%), and 3 years later: one (3%). The median time between presentation and publication, excluding articles that were published prior to presentation, was one year. The publishing journals and the article numbers were: neuroscience-related journals: 26 (74%), general journals: 9 (26%), journals from KSA: 11 (31%), and journals from outside KSA: 24 (69%). The most common publishing journals and the article numbers were: Neurosciences (Riyadh): 8 (23%), British Journal of Neurosurgery: 3 (9%), Neurosurgery: 2 (6%), Surgical Neurology: 2 (6%), Minimally Invasive Neurosurgery: 2 (6%), Childs Nervous System: 2 (6%), and the Saudi Medical Journal: 2 (6%).

Researchers in general are fully aware of the importance of publishing their presentations as full articles in peer-reviewed journals. Abstracts that are not subsequently published as articles are unlikely to reach their maximal potential readership limiting their benefits to the medical community. This can lead to wastage of resources as other researchers may duplicate the work. Compared to articles, abstracts tend to lack details in the description of materials and methods making it difficult for other researchers to understand

Disclosure. The authors have no conflicting interests, and are not supported/funded by any Drug Company.

Table 1 - Rate of publications related to a number of parameters.

Features	Total	Published n (%)	Unpublished	Significance (<i>p</i> -value)
<i>Year</i>				
2007	14 (5)	1 (7)	13 (93)	NS (<i>p</i> =0.75)
2008	35 (13)	6 (17)	29 (83)	
2009	61 (22)	9 (15)	52 (85)	
2010	51 (19)	6 (12)	45 (88)	
2011	64 (23)	10 (16)	54 (84)	
2012	48 (18)	3 (6)	45 (94)	
<i>Presenter's rank</i>				
Consultant	214 (78)	29 (14)	185 (86)	NS (<i>p</i> =0.25)
Resident	43 (16)	6 (14)	37 (86)	
Other staff	16 (6)	-	16 (100)	
<i>Center's university status*</i>				
University	84 (35)	17 (20)	67 (80)	Sig (<i>p</i> =0.025)
Non-university	153 (65)	15 (10)	138 (90)	
<i>Center's region</i>				
Central KSA	118 (43)	15 (8)	103 (92)	NS (<i>p</i> =0.25)
Western KSA	59 (22)	12 (20)	47 (80)	
Eastern KSA	60 (22)	5 (8)	55 (92)	
Outside KSA	36 (13)	3 (8)	33 (92)	
<i>Presentation's subspecialty</i>				
Tumor	57 (21)	6 (11)	51 (89)	NS (<i>p</i> =0.75)
Trauma	32 (12)	4 (13)	28 (37)	
Spine	58 (21)	5 (7)	53 (93)	
Vascular	31 (11)	5 (16)	26 (84)	
Pediatric	29 (11)	6 (21)	23 (79)	
Functional	26 (10)	4 (15)	22 (85)	
Education	14 (5)	3 (21)	11 (79)	
Others	26 (10)	2 (8)	24 (92)	
KSA - Kingdom of Saudi Arabia, *KSA only, Sig - significant, NS - not significant				

the significance of the data and validate the results. In addition, full publication of abstracts serves as a quality assurance measure for the meeting's abstract selection process.

It is recognized that oral presentations are more likely to be published as full articles in peer-reviewed journals compared to poster presentations.^{2,3} Posters were excluded in this study as only a limited number were presented during the first 6 SANS meetings. There are limitations in the interpretation of our results. Some publications may not have been included because they were published in journals that are not indexed in "PubMed" and "Google Scholar", such as the Pan Arab Journal of Neurosurgery. Some of the abstracts that were presented during the more recent meetings may have been accepted for publication, but not yet published. It is possible that some publications may have been missed due to search errors as a result of the misspelling of names, but we believe these have been minimized by searching in 2 databases. In addition, there are a number of relevant issues that were not examined in

this study, which includes: the quality and originality of the research in the presentation, the frequency and significance of duplicate presentations, and the inconsistency between the original presentation and final publication. It is recognized that the authorship and sample size may change significantly between the abstract and the full article.²

It is reported that the abstract to publication ratio for medical meetings ranges from 11-78%.^{1,2,4} Our study shows that the rate of publication of presentations during the first 6 SANS meetings was fairly low (13%). It is accepted that SANS is a small new association, and its abstract publication ratio may not be a true reflection of other KSA societies. Hence, it would be of interest for authors to calculate the rate of full publication for presentations in other older and bigger KSA scientific societies such as the Saudi Heart Association, which was established in 1987. The reasons for the failure to publish findings presented in abstracts are multifactorial and may include lack of time, low priority, ongoing presentation of results, lack of funds, lack of faith

in the quality of the research that may have lacked originality, rejection of a submitted paper, relationships with co-authors, negative results, the existence of other published reports with identical results, and a limitation in the number of suitable journals.^{1,2,4} In addition, it is possible that after presenting the abstract and in response to the generated discussion during the meeting the authors decided not to pursue the project further.³

It is recognized that a number of features related to the research nature, design, and results may significantly increase the rate of full publication of the presented study. These include whether the research was original, basic and prospective, with randomization, used statistical testing, and produced a positive outcome. In addition, the country of origin, affiliation with a university, external financial support, and international collaboration may also significantly influence the abstract to publication ratio.^{2,3,5} Some authors also reported a subspecialty-related variation in the abstract publication ratio.^{3,4} Our findings confirm that the publication rates for SANS presentations were significantly influenced by the center's university status, but not by the presenter's rank, the center's region, or the presentation's subspecialty. In addition, the abstract publication ratio was not significantly influenced by the year of presentation, despite an increase in the number of presentations in some years. The median time before publication in this series was one year, which is comparable to the 15-18 months stated by others.²⁻⁴ Surprisingly 14% of the publications occurred before the presentation, which is unusual. This may reflect shortage of suitable presentations as most scientific meetings do not accept the presentation of published work unless there has been a substantial addition to it.

In conclusion, allowing for the difficulties in evaluating a national meeting with international databases, the rate of full publication of presentations during the first 6 SANS meetings is fairly low (13%),

and the most significant predictor of publication is the university status of the presenter's center. It is recognized that the quality and originality of the presented research are significant predictors in favor of full publication. Authors should be encouraged to publish their abstracts as full articles in journals in order for their research to maintain its value.

Received 19th March 2013. Accepted 1st August 2013.

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