

## Publication rates from the All India Ophthalmic Conference 2010 compared to 2000: Are we improving?

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**Purpose:** To determine the publication rates of free papers and posters presented at the All India Ophthalmic Conference (AIOC) 2010 in peer-reviewed journals up to December 2015 and compare this with publication rates from AIOC2000 published previously. **Methods:** A thorough literature search was conducted using PubMed, Google Scholar, and the general Google search engine by two independent investigators. The title of the paper, keywords and author names were used to “match” the AIOC free-paper with the published paper. In addition, the “purpose,” “methods,” and “outcome measures” between the two were studied to determine the “match.” **Results:** A total of 58 out of 394 free-papers (14.7%) from AIOC2010 were published till December 2015 compared to 16.5% from AIOC2000. Out of these, 52 (90%) were published in PubMed indexed journals. Maximum publications were seen in pediatric ophthalmology (50%) followed by glaucoma (24.4%) and cornea (23.8%). Fifteen out of 272 posters (5.5%) were published; orbit/oculoplastics had the highest poster publications (13%). Excluding papers in nonindexed journals and those by authors with international affiliations, the publication rate was approximately 12%. **Conclusion:** The publication rate of free papers from AIOC2010 has marginally reduced compared to AIOC2000. Various causes for this such as lack of adequate training, motivation, and lack of incentives for research in the Indian scenario have been explored, and measures to improve this paradigm have been discussed. It will be prudent to repeat this exercise every decade to compare publication rates between periodic AIOC, stimulate young minds for quality research and educate policy makers toward the need for developing dedicated research departments across the country.

**Key words:** All India Ophthalmic Conference, India, ophthalmic research, publication rate

Large ophthalmic conferences conducted by international and national associations offer opportunities to ophthalmologists, optometrists, and basic scientists to present their research and gain useful feedback and comments from the scientific community. The All India Ophthalmic Society (AIOS), with approximately 12,000 members, is one of the largest ophthalmic associations in the world and has been conducting the annual All India Ophthalmic Conference (AIOC) for nearly 75 years.

The scientific quality of free papers and posters presented at the AIOC most likely reflects on the scientific research occurring in India around the time the conference is organized. The final frontier for scientific research is getting published in a high-ranking peer-reviewed journal. This is the only way the results of a study can be disseminated widely to a global audience. Hence, it is anticipated that presenters of free papers and posters at an AIOC will strive to publish their paper in a journal.

The proportion of free papers and posters that finally make it to publication after being presented at a scientific meeting

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is one of the best indicators of the real scientific success of a meeting. Publication rates from the AIOC conducted in the year 2000 showed that approximately 16.5% of such papers were ultimately published in PubMed indexed journals over the subsequent 7 years.<sup>[1]</sup> Using this as a benchmark, it will be prudent to review the publication rates from subsequent AIOC, at least once every decade, to enable comparisons and identify publication trends between meetings. We performed a study to identify how many free papers and posters presented at the AIOC 2010 were subsequently published in peer-reviewed journals over the next 5 years.

### Methods

The study was classified as nonhuman subject research by the Aravind Institutional Ethics Committee and was, therefore, exempt from review. A detailed list of all papers and posters presented at the AIOC 2010, held in Kolkata, India, was obtained using the proceedings published by the editor of proceedings of the conference. An Excel sheet was used to record the title of the paper, list of presenting authors and all

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coauthors including their institutional affiliations. Separate Excel sheets were maintained for papers and posters. Based on their title and content, papers/posters were classified into 17 subspecialties including corneal disorders, refractive surgery, retinal disorders, glaucoma, pediatric ophthalmology, neuro-ophthalmology, cataract, community ophthalmology, lacrimal diseases, optics, ophthalmic inflammation, uveitis, orbit and oculoplastics, strabismus, ocular trauma, external eye diseases, and miscellaneous.

Once a complete list was prepared, it was checked for repetitions and data entry errors so as to eliminate dual/multiple entries across all subspecialties.

Following this, a comprehensive literature search was initiated using the title of the paper and authors. Two independent individuals, a very experienced librarian (KGB) and an ophthalmologist pursuing a formal vitreoretinal fellowship (SB) performed the literature searches independently to avoid missing publications that may have been presented at AIOC 2010. The following databases were searched to match a particular paper or poster presented at AIOC 2010 with publications: PubMed and MEDLINE, Google Scholar and the general Google search engine. The search was restricted to the period between February 2010 and December 2015 using filters. In the initial search, the complete title of the paper/poster presented at AIOC 2010 was copied verbatim into the PubMed search box. All of the results were examined by crosschecking the author list and their affiliations to ensure that the correct paper was identified. In case a paper was not found, five key words were identified from the available AIOC 2010 proceedings, and the advanced search builder option of PubMed was utilized to identify publications. If the PubMed search including the advanced search option did not yield a publication, we proceeded to use the Google Scholar database in a similar manner as detailed above.

Next, we proceeded to use the general Google search engine to identify additional papers that may not have been listed in scientific databases such as PubMed and Google Scholar. The first two pages of the general Google search were screened to see if a publication could be identified.

After a publication was identified to be potentially "matching" a paper/poster presented at the AIOC 2010, two independent investigators (SS, SB) went through the abstracts and full text of the published paper and the information provided in the AIOC proceedings to doubly confirm that the content of the published paper was similar to that presented at AIOC 2010. Specifically, we meticulously studied the "purpose," "methods," "outcome measures," and "results" between the two to determine the degree of similarity and registered a "match" if these sections of the published paper were similar to that presented at AIOC 2010. In addition, at least one of the authors had to be a coauthor in the published paper for it to be registered as a "match." We did not restrict the search to indexed journals alone, however, only peer-reviewed publications were considered as a "match." If the sample size was equal or larger in the published paper, we still considered it a "match." In case results reported in the published paper differed significantly from that presented at AIOC 2010, we considered a match by consensus between the independent investigators (SS, SB). Therefore, other than the publications with identical title and author's sequence,

multiple checkpoints (viz., title, text, and author's similarity) were created to minimize selection bias and avoid error.

## Results

A total of 394 free papers and 272 posters were listed in the proceedings of the AIOC 2010. Out of these, we could identify 58 papers (14.7%) and 15 (5.5%) posters that were published till December 2015. Out of the 58 papers published, 52 (90%) were published in PubMed indexed journals, and the remaining six (10%) were published in peer-reviewed journals that were not indexed in PubMed, predominantly well-respected state level journals [Table 1]. The Indian Journal of Ophthalmology saw the highest number of papers published ( $n = 14$ ) followed by the Nepal Journal of Ophthalmology ( $n = 5$ ). A total of 18% papers were published in journals "as is" from the AIOC 2010. The remaining had minor changes in title, authors, methodology and/or results and conclusions before they were published. These were identified using "key words" and "search builder" options in PubMed and Google Scholar as mentioned in the methods sections.

In terms of subspecialty, pediatric ophthalmology showed the highest "presented to published ratio" with every other paper published ( $n = 6$ ), though only 12 free papers strictly related to pediatric ophthalmology, excluding strabismus, were presented at AIOC 2010 [Table 2]. Cornea and glaucoma subspecialties also demonstrated a relatively high proportion of publications, with nearly every 4<sup>th</sup> paper published in these subspecialties. The subspecialty of optics also showed that 25% papers were published (3 out of 12) and these dealt with low vision aids and IOL power calculation in silicone oil-filled eyes. The subspecialties of cataract ( $n = 56$ ) and vitreoretina ( $n = 52$ ) had the highest number of free paper presentations at AIOC 2010, but the publication rates from both these was below 20%. However, out of ten papers published in the cataract subspecialty, three were randomized trials and thus generated evidence of the highest order.<sup>[2-4]</sup>

Out of the 58 free papers published, 4 were randomized control trials,<sup>[2-5]</sup> fifty were original articles, two were surgical techniques, one was a case report, and one was a review article. In addition, five out of the 58 (8.6%) publications were from international presenters including one each from China, Scotland, Canada, and two from the Middle Eastern countries.

The "presented to published ratio" for posters was significantly lower than papers (5.5%). Subspecialty wise distribution showed that orbit/oculoplastics had the highest rate of publication with 13% papers published. Out of the 15 posters published, a third was contributed by the cataract subspecialty. Again cataract ( $n = 46$ ) and retina subspecialties ( $n = 49$ ) logged the highest number of poster presentations at AIOC 2010; however, their publication rates were below 10% [Table 3].

## Discussion

We sought to answer the question of whether publication rates of free papers and posters presented at a representative AIOC (i.e., AIOC 2010) improved over the rates previously reported a decade ago. Our thorough literature search revealed that 58 free papers were eventually published in the subsequent 5 years. Excluding those published in nonindexed journals ( $n = 6$ ) and those published by authors with international affiliations ( $n = 5$ ), we find that approximately 12% of free papers were published

**Table 1: Journals in which free papers from the All India Ophthalmic Conference 2010 were published**

Journal name	Number of papers (n=58)	Percentage
<b>PubMed Indexed Journals</b>		
Indian Journal of Ophthalmology	14	24.1
Nepal Journal of Ophthalmology	5	8.6
Retina	3	5.2
Journal of Cataract and Refractive Surgery	2	3.4
Journal of Refractive Surgery	2	3.4
British Journal of Ophthalmology	2	3.4
Asia pacific Journal of Ophthalmology	2	3.4
Orbit	2	3.4
JAAPOS*	2	3.4
Middle East African Journal of Ophthalmology	2	3.4
Clinical and Experimental Ophthalmology	2	3.4
Journal of Indian Medical Association	2	3.4
Archives of Ophthalmology	1	1.7
American Journal of Ophthalmology	1	1.7
Journal of Glaucoma	1	1.7
Oman Journal of Ophthalmology	1	1.7
International Ophthalmology	1	1.7
Graefes Archives of Clinical and Experimental Ophthalmology	1	1.7
Indian Journal of Pathology and Microbiology	1	1.7
MJAFI	1	1.7
Familial Cancer	1	1.7
Biochemistry and Cell Biology	1	1.7
Molecular and cellular biochemistry	1	1.7
International Journal of inflammation	1	1.7
<b>Nonindexed Journals</b>		
Chakshu**	1	1.7
Delhi Journal of Ophthalmology	1	1.7
Kerala Journal of Ophthalmology	1	1.7
Orissa Journal of Ophthalmology	1	1.7
Indian Journal of Applied-Basic Medical Sciences	1	1.7
MedPulse - International Medical Journal	1	1.7

\*JAAPOS: Journal of American Academy of Pediatric Ophthalmology and Strabismus, \*\*Chakshu: Official journal of the Karnataka Ophthalmic society, MJAFI: Medical Journal Armed Forces India

compared to 16.5% reported in AIOC 2000.<sup>[1]</sup> Including all free papers without restrictions on the type of journal and author affiliation, we still find that the publication rate from AIOC

2010 (14.7%) is marginally lower than that reported from AIOC 2000 (16.5%).

There could be multiple reasons for the lower publication rates we report compared to that reported from AIOC 2000 by Dhaliwal and Kumar.<sup>[1]</sup> First, the denominator, i.e., the total number of free paper presentations at AIOC 2010 ( $n = 394$ ) was almost double than that at AIOC 2000 ( $n = 200$ ). It is encouraging that more and more Indian ophthalmologists are performing research and are presenting at the national level. It is also heartening to note that most of the publications were "original articles" including randomized trials generating a high level of evidence as opposed to case reports and series. The absolute number of publications is also much higher in 2010 ( $n = 58$ ) compared to 2000 ( $n = 33$ ), which is also encouraging, though the overall proportion has dropped. Dhaliwal and Kumar did not report on outcomes from posters presented in AIOC2000, making direct comparisons difficult.<sup>[1]</sup> In addition, Dhaliwal and Kumar, while reporting on publication rates in 2000, included papers published over the subsequent 7 years as opposed to 5 years we used.<sup>[1]</sup> We believe that 5 years is an adequate time frame for converting a conference paper into a peer-reviewed publication. Even Dhaliwal and Kumar reported that 97% papers were published within 5 years from the actual conference. However, it is entirely possible that a few more papers from AIOC 2010 get published in 2016 and 2017, thus equalizing the disparity we are reporting.

Second, lower publication rates may be due to lack of motivation of Indian researchers to publish their work. Many look at the AIOC as the summit and do not take the extra effort to publish. As a collective group, we may do well to change this mentality and try our best to contribute to literature. After going through all the proceedings of AIOC 2010, we find that there were a good number of excellent ideas and many reported excellent results, yet these were not published which was disappointing. Creating small research grants to promote good research will not only help the logistics for authors but also incentivise research and create a competitive environment for authors to publish their work. The AIOS could take the lead in this and make it more lucrative for Indian ophthalmologists to publish their work.

Third, lack of adequate training in research techniques and writing manuscripts may also be an important lacuna leading to lower publication rates. Graduating on from presenting in a scientific meeting to actually publishing in a journal can be very challenging, primarily because the review process that a manuscript is subjected to before acceptance in a journal is far more rigorous than that for a conference. We refer readers to our previous publication for tips and tricks for manuscript writing that may help them publish their work in journals.<sup>[6]</sup> The AIOS Academic and Research Committee can take cognizance and conduct research methodology workshops catering towards the specific needs of ophthalmic research using ophthalmic examples to educate the fraternity towards these techniques. Targeting residents in training, as well as established ophthalmologists should be the goal. This may go a long way in creating momentum and increase the publication rates from future AIOC.

Finally, lower publication rates, especially while considering only Indian authors, may be a reflection of gradually reducing

**Table 2: Subspecialty wise distribution of free papers that were published**

Serial number	Subspecialty	Total submissions	Number of publications	Percentage
1	Cataract	56	10 <sup>#</sup>	17.9
2	Community Ophthalmology	14	1	7.1
3	Cornea	42	10	23.8
4	Glaucoma	45	11	24.4
5	Ocular Inflammation*	10	0	0
6	Lacrimal	14	1	7.1
7	Neuro-Ophthalmology	14	2	14.3
8	Optics	12	3	25.0
9	Orbit	28	3	10.7
10	Refractive	14	1	7.1
11	Pediatric Ophthalmology	12	6	50.0
12	Retina	52	7	13.5
13	Miscellaneous	25	1	4.0
14	Uvea	14	0	0
15	Strabismus	14	1	7.1
16	Trauma	13	0	0
17	External	15	1	6.7
	Total	394	58	14.7

<sup>#</sup>3 were RCT's, \*Other than uvea. RCT: Randomised controlled trials

**Table 3: Subspecialty wise distribution of free posters that were published**

Serial number	Subspecialty	Total submissions	Number of publications	Percentage
1	Cataract	46	4	8.7
2	Community Ophthalmology	11	1	9.1
3	Cornea	29	1	3.5
4	Glaucoma	30	1	3.3
5	Inflammation	3	0	0
6	Lacrimal	4	0	0
7	Neuro-Ophthalmology	16	1	6.3
8	Optics	4	0	0
9	Orbit	23	3	13.1
10	Refractive	0	0	0
11	Pediatric Ophthalmology	0	0	0
12	Retina	49	3	6.1
13	Miscellaneous	15	0	0
14	Uvea	10	0	0
15	Strabismus	12	0	0
16	Trauma	10	0	0
17	External	10	1	10.0
	Total	272	15	5.5

the quality of ophthalmic research in the country. As evidenced by our results, none of the papers from AIOC 2010 were published in "ophthalmology," the leading peer-reviewed journal for ophthalmology and vision sciences as opposed to five papers from 2000. To counter this, we performed an exhaustive PubMed search to determine all ophthalmology related publications originating from India using a methodology we have published previously.<sup>[7]</sup> We restricted our search from February 2010 to December 2015, a time frame similar to what we used for determining publication rates from AIOC 2010. We found that more than 1500 ophthalmology and visual sciences

related papers have been published from India over this period suggesting that the quality, as well as the quantity of research in India, is extremely good. These results indicate that many authors publishing papers in peer-reviewed journals may not be presenting their work at the AIOC. Alternatively, some high-quality submissions to the AIOC may have been rejected during the extremely competitive selection process, depriving authors the opportunity to present their work at the national conference. This is speculative as we do not have the list and content of the papers that were rejected for the AIOC 2010. It will be prudent for the All India scientific committee to woo

authors to submit their work for the AIOC and accept the best papers most likely to advance our scientific knowledge using international checklists such as the STROBE, RECORD, and CONSORT (available at the <http://www.equator-network.org/>, last accessed April 30, 2016). Allowing an adequate word count during submission to AIOC may facilitate greater expression of ideas by authors. In addition, creating checklists that need to be fulfilled to ensure completeness of the submission may also improve the quality of the submissions, in turn allowing decision makers to choose the best submissions. Shortening the gestational period between abstract submission and conference presentation (approximately 9 months) may also encourage more authors to submit their work for the AIOC.

A limitation of this paper was the difficulty in “matching” the AIOC 2010 proceedings with the actual publication due to differences in the actual title, authors, coauthors, methods, and results between the two. Due to these differences, we may have inadvertently omitted a few publications from our analysis, falsely reducing the overall publication rate.

As a destination for clinical ophthalmic care, India is second to none as our ophthalmologists use state of the art techniques and are among the first to adopt newer surgical techniques globally. The weight of “Indian Ophthalmology” is felt in many international meetings due to the excellent quality of presentations from our peers. It is high time we create our own practice patterns using data from our own patients employing robust research methodologies. Publishing our results will not only influence our peers but may also influence much of the developing world that looks up to us. Backing research, training ophthalmologists adequately and creating small research grants for enthusiastic researchers will ensure that papers that are accepted and presented at an AIOC are of the highest quality and stand the best chance of getting accepted in a peer reviewed journal with little or minimal additional effort. Repeating this exercise of measuring publication rates at

the end of every decade will help us focus on “where we are” and “where we want to be” as a leading ophthalmic research fraternity in the future.

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#### Conflicts of interest

There are no conflicts of interest.

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