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Completion publication of abstracts presented at the scientific meetings of the pan-African pediatric surgical association

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ABSTRACT

Background: The expected knowledge translation from discovery into practice occurs when presentations from major scientific meetings are published in peer-reviewed literature. The purpose of this study was to determine the extent of complete publication of peer-reviewed articles arising from presentations at the biennial meetings of the Pan-African Pediatric Surgical Association (PAPSA). **Materials and Methods:** All the abstracts accepted for presentation at the biennial meeting of PAPSA between 2006 and 2010 were identified from the conference abstract booklets and published abstracts in the *African Journal of Paediatric Surgery*. The presentations were searched for publication in Medline/PubMed, Google Scholar, and African Journal OnLine through October 2012, using key words from the abstract title and names of authors listed in the abstracts. **Results:** A total of 164 abstracts were accepted for presentation, consisting of 118 (72%) oral/podium presentations and 46 (28%) poster presentations. One hundred and thirty-three abstracts (81.1%) came from African countries and 31 (18.9%) from outside Africa. Overall, 49 (29.9%) abstracts resulted in full-text publications in 20 peer-reviewed journals. Thirty-eight of the publications were from Africa (representing 28.6% of abstracts from Africa) and 11 from outside Africa (33.3% of abstracts from outside Africa). The median time to publication was 15 months [interquartile range (IQR) 5-26 months]. The publication rate was statistically significantly correlated to the year of publication (P = 0.016) and the use of comparative statistics in the study (P = 0.005), but not to the study design, study subjects, or institution. The majority of the studies were published in the *African Journal of Paediatric Surgery* and *Pediatric Surgery International* (14 and 11 of the 49 reports, respectively). The H-index for international abstracts (median 35, IQR 35-76) was significantly higher than that of African abstracts (14, 3-35) (P = 0.002). **Conclusion:** Only a third of abstracts presented at PAPSA biennial meetings were ultimately published in a peer-reviewed journal. Increased efforts to improve the publication rate and facilitate the rapid dissemination of new knowledge are needed.

Key words: Africa, pediatric surgery, publications, research, scientific meetings

INTRODUCTION

Presentations at national and international scientific meetings provide an important forum to relay current research findings in all areas of medicine. Abstracts presented at such meetings are indispensable tools for communicating the latest research in the field, providing authors with an opportunity to receive feedback from scientific peers who will assist in the preparation of a final manuscript to be submitted to a peer-reviewed journal.

The information included in abstracts is usually limited and insufficient to allow any critical analysis of the work. Eventual publication of these presentations in peer-reviewed journals is the desired outcome and would represent the completion of a rigorous process of extensive analysis and scrutiny of the data. However, the completeness and speed of this process varies greatly by meeting type.[1] Reports across a wide range of medical specialties have documented publication rates of abstracts in peer-reviewed journals of 21%-69%.[1-7] Only two studies in pediatric surgery have been reported so far.[8,9]

The main objective of this study was to determine the characteristics and completion rates of publication in peer-reviewed journals of abstracts accepted for

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presentation at recent scientific meetings of the Pan-African Pediatric Surgical Association (PAPSA).

MATERIALS AND METHODS

All abstracts accepted for presentation at the biennial meetings of PAPSA between 2006 and 2010 were identified from the conference abstract booklets and related published abstracts in the *African Journal of Paediatric Surgery (AJPS)*. The presentations were searched for publication through Medline/PubMed, Google Scholar, and African Journals OnLine (AJOL), using the name of the authors and the title of the presented abstract, for successful conversion to a peer-reviewed paper.

Whenever discrepancies in the title and/or authors of published abstracts were identified, the full text was counted as a publication only in instances where the methodology and conclusions had substantial similarities to the conference abstract. For each full-text publication, the journal title, date of publication, number of authors, and the institution of origin were recorded. The type of journal and its 2011 H-index obtained from the *Scimago journal rank* (Scimago Lab, © 2007-2012, data source Scopus®) were also recorded. Editorials and guest lectures were excluded.

The database was searched until the end of October 2012. A total of 164 abstracts met the study criteria and were reviewed. Data were analyzed with SPSS v.15.0 (SPSS Corp, Chicago, IL, USA). Fisher's exact test was used to determine level of statistical significance for categorical variables and the Mann-Whitney test for continuous variables. The level of significance was set at $P < 0.05$.

RESULTS

A total of 164 abstracts were accepted for presentation at PAPSA between 2006 and 2010; of these, 118 (72%) were oral podium presentations and 46 (28%) poster presentations. One hundred and thirty-three (81.1%) of the abstracts originated in African countries, while 31 (18.9%) came from countries outside Africa. Table 1 details the countries of origin of the abstracts.

Overall, 49 (29.9%) abstracts were eventually converted into full-text publications in 20 peer-reviewed journals; 38 of the publications were from Africa (representing 28.6% of all African presentations) and 11 from outside Africa [representing 35.5% of all abstracts from outside Africa, odds ratio (OR) = 0.727, 95% confidence intervals (CI) 0.32-1.66, $P = 0.45$]. The median time from abstract presentation to journal publication was 15 months [interquartile range (IQR) 5-26 months].

Table 1: Abstract publication and contribution by country

Location	Number of abstracts	No. of published abstracts (%)	*P*=value
African	133	38 (28.6)	0.449
Nigeria	51	19 (37.3)	
Kenya	27	7 (25.9)	
South Africa	17	6 (35.3)	
Cote D'ivoire	10	0 (0)	
Ghana	9	2 (22.2)	
Egypt	8	2 (25)	
Tanzania	5	1 (20)	
Malawi	3	1 (33.3)	
Zimbabwe	3	0 (0)	
Ethiopia	1	1 (100)	
International	31	11 (35.5)	0.449
UK	9	5 (55.6)	
Canada	6	2 (33.3)	
Croatia	4	1 (25)	
Netherland	4	1 (25)	
Australia	4	0 (0)	
California	1	1 (100)	
Russia	1	0 (0)	
India	1	0 (0)	

The proportion of abstracts that achieved completion of publication in peer-reviewed journals decreased with each successive scientific meeting: 37.8% (17/45) in 2006, 37.1% (23/62) in 2008, and 15.8% (9/57) in 2010 ($P = 0.016$). The publication rate of podium and poster presentations was not statistically different (32.2% vs. 23.9%, OR 1.5, 95% CI 0.69-3.30, $P = 0.30$), although podium presentations were 1.5 times more likely to be published than poster presentations. Studies including statistical inferences were more likely to be published than those without (57.9% vs. 26.2%; OR 3.8, 95% CI 1.44-10.34, $P = 0.005$). The same applied to studies including a control group compared to those without (35.3% vs. 24.7%), although the difference did not reach statistical significance (OR 1.3, 95% CI 0.46-3.79, $P = 0.61$).

Table 2 details the characteristics of the abstracts by several variables and explores possible correlations to the publication rate. The latter appeared not to be statistically significantly correlated to study design or subject. Out of the five commonest topics presented at the meetings, abstracts on neonatal procedures, gastrointestinal procedures, and urological procedures had the highest publication rates (43.8%, 25%, and 23.1%, respectively; Table 2).

The majority of the 49 published reports appeared in the *AJPS* (14, 28.6%) and *Pediatric Surgery International (PSI)* (11, 22.4%); all journals of publication are listed in Table 3. The median H-index of the journals in which abstracts were published was 18 (IQR 3-35). The H-index for abstracts from outside Africa 35 (35-76) was significantly higher than that of African abstracts 14 (3-35), $P = 0.002$. The median number of authors in the publications was 3 (IQR 2-4); African studies had a similar median number of authors with those from outside Africa (3 vs. 3; $P = 0.95$).

DISCUSSION

PAPSA scientific meetings attract significant numbers of delegates from a wide range of African countries and beyond, and have thus become a forum for rapid dissemination of knowledge and information in pediatric surgery in Africa. The abstracts presented have, therefore, the potential to influence current practice on the continent.

Because it is not possible to apply the same degree of scrutiny to a study based on the limited information provided in an abstract, the subsequent publication rate of presented abstracts is critical to the evaluation of the quality of the material presented at scientific meetings.[10,11] It is also known that most conclusions presented in scientific meeting abstracts change by the time they reach manuscript publication.[4] Furthermore, evaluation of publication rates provides feedback to researchers on average time to publication, and critical examination of the data also provides feedback to scientific program selection committees regarding the stringency of their selection criteria.[4] Most importantly, it is the ethical responsibility of researchers to publish data which could potentially benefit patients when integrated into the clinical practice.[7] Therefore, abstracts presented at scientific meetings should be published in recognized peer-reviewed journals and be available to general medical professionals and public readers.[7]

Overall, 30% of abstracts presented at PAPSA meetings were subsequently published in peer-reviewed journals. This is similar to the publication rate of abstracts presented at other surgical specialty meetings, which range from 21% to 49% [Table 4].[2,3,7,10-14] This publication rate is also similar to previous reports from pediatric surgical meetings.[8,9] Macdonald *et al.*,[9] in a review of 862 oral presentation presented at the British Association of Paediatric Surgeons annual meetings between 1998 and2008 reported a publication rate

Table 2: Characteristic of PAPSA abstracts

Variable	Number of abstracts	No. of published abstracts (%)	*P* value
Year of conference			0.016
2006	45	17 (37.8)	
2008	62	23 (37.1)	
2010	57	9 (15.8)	
Mode of presentation			
Poster	46	11 (23.9)	0.297
Podium	118	38 (32.2)	
Study design			
Retrospective	96	32 (33.3)	0.458
Prospective	39	10 (25.6)	
Case report	11	1 (9.1)	
Review	8	3 (37.5)	
Technical report/technique	6	1 (16.7)	
Survey	4	2 (50)	
Subjects			0.383
Gastrointestinal	28	7 (25)	
Urology	26	6 (23.1)	
Trauma	25	5 (20)	
General topics	17	3 (17.6)	
Neonatal	16	7 (43.8)	
Neurosurgical	12	4 (25)	
Surgical education	10	6 (60)	
Oncology	10	3 (30)	
Colorectal	8	3 (37.5)	
Surgical infection	6	3 (50)	
Minimal access surgery	6	2 (33.3)	

PAPSA: Pan-african pediatric surgical association

Table 3: Publications by journal name

Journal	No. of published abstracts (%)	Journal H-index
African journal of paediatric surgery	14 (28.6)	3
Pediatric surgery international	11 (22.4)	35
East african medical journal	3 (6.1)	23
Annals of pediatric surgery	2 (4.1)	0
Journal of pediatric surgery	2 (4.1)	76
Journal of pediatric urology	2 (4.1)	14
South african medical journal	2 (4.1)	33
South african journal of child health	1 (2.0)	3
South african journal of surgery	1 (2.0)	14
American journal of perinatology	1 (2.0)	37
Burns	1 (2.0)	51
Ethiopian medical journal	1 (2.0)	14
International journal of adolescent medicine and health	1 (2.0)	18
Journal of neurosurgery: Pediatric	1 (2.0)	17
Pediatric emergency care	1 (2.0)	36
Spine	1 (2.0)	149
Surgical endoscopy	1 (2.0)	92
Surgical science	1 (2.0)	0
Tropical medicine and international health	1 (2.0)	64
World journal of child health	1 (2.0)	0

Table 4: The rate of publication from presentation for different surgical specialties

Reference	Meeting	Year	No. of abstracts	Publication rate	Mean time to publication (in months)
Other surgical specialties					
Autorino *et al*.[2]	World congress of endourology	2000-2001	1100	20.5	14.6
Yoon *et al*.[7]	Urological society of australia and New Zealand	2005-2009	614	29.8	14.5
Rao *et al*.[10]	British association of urological surgeons	2001-2002	449	42	36
Ng *et al*.[11]	America urological association	1998-2000	4,302	37.8	30
Donegan *et al*.[3]	American academy of orthopaedic surgery	2001	756	49	ND
ul Haq and Gill *et al*.[12]	British orthopaedic association	2001	179	36.3	18.6
Rodrigue and Laskin[13]	American association of oral and maxillofacial surgeons	2002-2009	311	24	ND
Oliver *et al*.[14]	British association of plastic surgeons	1995-1999	370	32	18
Pediatric surgery					
Nasir and Ameh.[8]	Association of paediatric surgeons of Nigeria	2004-2009	139	34.5	23.5
Macdonald *et al*.[9]	British association of paediatric surgeons	1999-2008	862	35	ND
Present study	Pan african paediatric surgical association	2006-2010	164	29.9	17.5 (median=15)

of 35%, and Nasir and Ameh[8] documented a 30.4% conversion rate of 153 accepted abstracts at the Association of Paediatric Surgeons of Nigeria annual meetings between 2004 and2009. Nonetheless, the publication rate in the present report is comparatively lower than other international medical scientific meetings hosted by specialty societies.[4-6,15,16]

In a meta-analysis of 2,391 abstracts from 11 studies, Scherer *et al*.,[17] found that 51% of abstracts presented at major conferences were eventually published in peer-reviewed journals. These rates of publication by specialty meetings may differ for several reasons, including the quality of the abstracts, the proportion of abstracts with statistically significant findings, and the respective association's acceptance criteria for abstracts.[10] Also, because some organizations routinely publish abstracts presented at their annual meetings in the association journal's supplement, institutions which accept, presented, or published abstracts for promotion purposes might discourage some authors from the need and urgency for full publication of their studies.

It is, however, instructive to note that abstracts selected for presentation at meetings are subjected to peer-review by members of the scientific program committee, who rely on the limited data submitted in abstracts to make their decision. Therefore, a high publication rate may validate the selection process for the abstracts presented at the meetings and may be a reflection of the efforts of the committee.[4]

The median time from presentation to conversion to full manuscripts in peer-reviewed journals in the present report was 15 months, which is comparable to previous reports.[7,12,15,16] Published reports have also shown that nearly all abstracts resulting in publication in indexed journals are published within 2 years.[2,8,11,17] Although some studies are published 3-5 years after initial presentation,[3,10] full-text publication of abstracts many years after the scientific meeting may call into question the scientific validity of the study and its value in clinical practice. Previous studies have also noted that some abstracts were published as full papers before presentation of the abstracts at scientific meetings;[4,15] in the present report, eight (16.3%) abstracts were published before the PAPSA meeting. This practice may contradict the principle that abstracts presented at scientific meetings should be based on previously unpublished material.

Gastrointestinal and urological topics dominated the abstracts presented at PAPSA meetings, representing 17.1% and 15.9%, respectively, of all abstracts presented. This may be a reflection of current pediatric surgical practice in most African centers. However, the frequency of publication of studies on neonates was higher (though statistically not different) than that of gastrointestinal and urological studies.

Retrospective studies surprisingly had a higher publication rate than prospective studies, although the difference was not statistically significant (33.3% vs. 25.6%; $P = 0.46$). This is similar to the report by Yoon *et al*.,[7] but contrasts the data from the World Congress of Endourology meetings published by Autorino *et al*.[2] This unusual finding may be explained by the faster process of data collection and analysis of existing records compared to designing and collecting prospective data over a period of time. This significantly reduces the time for data collection and consequently the time to completion of a full manuscript.[7]

In the present study, abstracts were more likely to be published if they were podium presentations rather than posters. Previous studies have showed no difference in the publication rates between podium and poster presentations.[3,10,11]

The incorporation of statistical methods into the design, analysis, and presentation of clinical research has been one of the major forces in the transition from opinion-based to evidence-based medicine. Modern medical research relies heavily on sound statistical methodology to transform ambiguous raw data into meaningful results. In the present report, abstracts incorporating comparative statistics were significantly more likely to be published compared to those without comparative statistics.

Overall, more than one-half of the published reports appeared in the *AJPS* and *PSI*. Although relevance and readership of journals are judged by impact factors/H-index, accessibility also contributes to where an author chooses to publish his or her work. Nonetheless, the spread of journals where studies were published was wide, suggesting that studies presented at PAPSA meetings are available to other disciplines and to the wider medical community.

Although PAPSA meetings are primarily geared to pediatric surgeons practicing in Africa, the number of abstracts submitted from outside Africa was significant (12.9%). Interestingly, however, the number of publications arising from international abstracts was not higher than those arising from African presentations ($P = 0.45$). This finding is similar to that of a previous report, where no relationship was established between the origins of the study (foreign vs. local) and their eventual publication rate.[10] The median time from presentation to publication was also similar, but publications arising from outside Africa were published in journals with a higher H-index compared to those arising from African presentations.

This study has several limitations. Papers published in local journals which are not indexed or included in PubMed, AJOL, or Google Scholar were not captured, and may therefore have been erroneously considered unpublished. In addition, articles published in the non-anglophone literature may be underrepresented, as PubMed and other search engines are heavily weighted toward English-language journals. Nevertheless, the vast majority of pediatric surgical specialty journals are represented in PubMed. Another limitation is that the follow-up time for abstracts presented at the last (2010) PAPSA meeting may have been insufficient for complete conversion to full text.

CONCLUSION

Only a third of abstracts presented at PAPSA scientific meetings were ultimately published in peer-reviewed journals. An appropriate but strict selection process in accepting the abstracts could contribute to improving the conversion of abstracts into full-text articles. Requesting that authors submit a full-text version of their manuscript at the time of abstract presentation may also be helpful. Such full-text submissions can then undergo an expedited review and be published in the journal of the association. All efforts should be made to improve the publication rate and facilitate the rapid dissemination of new knowledge in order to speed up the transition of scientific discovery into clinical practice.

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