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Subsequent publication of abstracts presented at the International Association of Paediatric Dentistry meetings

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Background. Presentation of scientific information at international meetings is important for the dissemination of new scientific research. It is often assumed that the information contained in an abstract will subsequently be published in a scientific journal in full-length form.

Objective. The aim of this investigation was to study the publication rate of abstracts presented to the International Association of Paediatric Dentistry (IAPD) congresses in London 1999 and Paris 2001, and factors that predict subsequent publication were also investigated.

Materials and methods. Abstracts presented at the IAPD congresses were reviewed. A Medline/PubMed search, encompassing 1999–2006, was performed.

Results. At the two IAPD congresses, a total of 771 abstracts were presented, 231 (30%) as oral presentations, 327 (42%) as poster discussion presentations, and 212 (28%) as poster presentations. During the period studied, 204 (27%) of the 771 abstracts were expanded into articles published in Medline/PubMed indexed journals. The publication ratio for orally presented abstracts was 40%, poster discussion presentation 21%, and for poster presentations 19% ($P < 0.0001$). The mean time from the congress to publication was 20 months.

Conclusion. The results of this study show that 40% of orally presented abstracts at IAPD congresses were followed by a subsequent scientific publication in a peer-reviewed journal.

Introduction

Presentation of scientific information at international meetings is important for the dissemination of new scientific research. During recent years, there have been increased numbers of scientific societies and meetings as well as numbers of abstracts presented to those meetings. It is often assumed that the information contained in an abstract presentation will subsequently be published in a scientific journal in full-length form. However, previous research has established that less than half of all abstracts are subsequently published in peer-reviewed, indexed journals. A study of abstracts presented to the European Orthodontic Society, the European Organization of Caries Research, and the International Association of Dental Research in1993 showed that 46% of the abstracts were found as published articles[1]. In other fields of medicine, the publication rate of abstracts varies from 10% to 78%[2–4]. In general, the information included in abstracts is limited and insufficient to allow a critical appraisal of the research conducted. When dental professionals immediately apply the results of abstracts to clinical practice, there is a risk that the subsequent publication in a peer-reviewed journal will be inconsistent with the original abstract.

The aim of this investigation was to study the publication rate of abstracts presented to the International Association of Paediatric Dentistry (IAPD) congresses in London 1999 and Paris 2001; furthermore, to examine factors that predict subsequent publication and also to assess the consistency between abstracts and subsequent published complete manuscripts.

Materials and methods

Selection criteria

Using the two issues of abstract books from the IAPD congresses in London 1999[5] and Paris

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2001[6], all abstracts from the scientific program were identified. Abstracts from precongress courses, lectures, and symposia were excluded from the study. A total of 384 abstracts were identified from the 1999 London congress and 386 from the 2001 Paris congress. The abstracts were classified according to the mode of presentation as either oral, poster discussion, or poster presentation.

Identification of final publication

To determine whether an abstract had been followed by publication of a complete paper, searches of Medline and PubMed were performed using the Boolean operator (OR) that included all publications by the first, second, and last authors[1]. A publication was defined as a full-length manuscript. Papers published during the period from 1999 to December 2006 were included in the search. Papers published before the meetings were also identified and included in the database. When multiple publications were identified, we used a standard Boolean operator (AND) to combine author names with keywords from the abstract title to identify the correct paper. When differences in the title or authors of the final publication were identified, the content of the original abstract was compared to that of the final publication with regard to authors, hypothesis, sample size, and results.

Characteristics of the study as reported in the abstract

For each abstract, the following data were extracted: number of authors, country where the research had been performed according to first author in cases of international collaboration, type of institution where the research had been conducted, area of paediatric dentistry, study design, if a clear objective or hypothesis was presented, and in studies including humans the number of patients included. Regarding the identified final publication, the time taken (in months) to publish since the congress, and the ISI impact factor of the journal[7] were recorded. Information regarding the consistency between the abstract and the final publication regarding changes in the title and authorship was also registered.

Consistency between the reviewers in abstracting data

To ensure consistency in abstraction of data from the abstracts and the final publications, all three authors completed data forms from 40 abstracts. This represented 6% of the abstracts investigated. The kappa score for agreement for the identification of complete published papers was 0.98 showing an excellent level of agreement.

Statistical analyses

Differences between continuous variables and dichotomous variables were tested using Student's *t*-test and chi-squared test, respectively. Using logistic regression analysis, the associations between several independent variables (time to publication, country where the research was conducted, and area of paediatric dentistry) and the dependent variable (identification of an abstract subsequently published as a paper) were conducted. Odds ratios (ORs) and 95% confidence interval (CI) were generated for each independent variable. A $P < 0.05$ was considered significant.

Results

At the two IAPD congresses, a total of 771 abstracts were presented, 231 (30%) as oral presentations, 327 (42%) as poster discussion presentations, and 212 (28%) as poster presentations. In Paris 2001, all posters were scheduled as poster discussion presentation.

The abstracts covered all areas of paediatric dentistry. As can be seen in Fig. 1, abstracts in the field of prevention were most prevalent ($n = 138$), followed by dental traumatic injuries (87), disturbances in dental development (83), restorative dentistry (79), and medically compromised (74).

The abstracts originated from a total of 59 countries. A large number of abstracts were submitted from the hosting countries, in London (75/384) and in Paris (60/386). More than 20 abstracts were submitted from participants from 10 different countries each (Table 1).

Randomized clinical trials constituted only 6% of the abstracts and observational studies

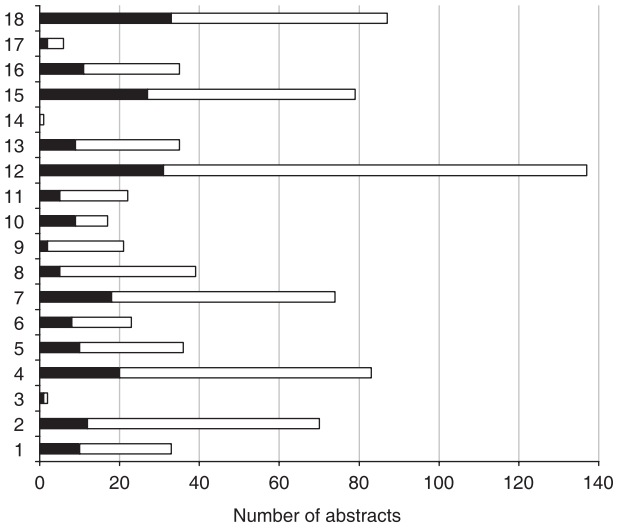

Fig. 1. Distribution of abstracts presented at the International Association of Paediatric Dentistry congresses according to area of paediatric dentistry [1 = behaviour, 2 = community dentistry (epidemiology), 3 = dental education, 4 = disturbances in dental development, 5 = endodontics, 6 = growth and development, 7 = medically compromized, 8 = occlusion, 9 = oral medicine and oral surgery, 10 = pain, 11 = periodontology, 12 = prevention, 13 = basic science, 14 = radiology, 15 = restorative dentistry, 16 = syndromes of the head and neck, 17 = temporomandibular joint disorders, 18 = dental traumatic injuries) and ratio of publication (filled bars = published, open bars = unpublished).

48% (Table 2). Of the observational studies, 20% were prospective, 61% cross sectional, and 19% were retrospective. Among the observational studies, those with a retrospective study design were significantly more often published (OR = 1.800; 95% CI 1.053, 3.077; $P = 0.0316$).

Published articles

Between 1999 and December 2006, 204 (27%) of the 771 abstracts were expanded into articles that were published in MEDLINE/PubMed indexed journals. The publication ratio for orally presented abstracts was 40%, poster discussion presentation 21%, and for poster presentations 19% ($P < 0.0001$). There was no difference in publication rate between the two congresses. The articles were published in 69 different scientific journals (Table 3). Most articles (39%) were published in paediatric-dentistry-speciality journals. None of these journals have an ISI calculated impact factor. Among the papers published in journals with an impact factor ($n = 99$), the mean impact factor was 1.497 ± 0.826 (range 0.568–4.272).

Table 1. Publication rates according to country* of first author.

Country	Number of abstracts	Number of abstracts published (%)	Odds ratios	*P* value
Argentina	36	3 (8)	0.242 (0.073, 0.796)	0.0196
Brazil	45	5 (11)	0.331 (0.129, 0.851)	0.0217
France	73	10 (14)	0.412 (0.207, 0.820)	0.0115
Japan	62	16 (26)	0.964 (0.533, 1.744)	0.9033
Poland	20	3 (13)	0.483 (0.140, 1.665)	0.2491
South Korea	26	0 (0)	0.000 (0.000, –)	0.0000
Sweden	31	20 (65)	5.494 (2.584, 11.683)	< 0.0001
Turkey	35	12 (34)	1.478 (0.722, 3.028)	0.2854
UK	100	46 (46)	2.783 (1.807, 4.288)	< 0.0001
USA	30	10 (33)	1.410 (0.648, 3.065)	0.3860

*Including only abstracts from countries submitting > 20 abstracts each.

Table 2. Publication rates according to type of study.

Type of study	Number of abstracts	Number of abstracts published (%)	Odds ratios 95% confidence interval	*P* value
Randomized controlled trial	47	24 (51)	3.154 (1.737, 5.725)	0.0002
Observational study	373	113 (48)	1.456 (1.456, 2.008)	0.0221
Case report	152	20 (18)	0.358 (0.217, 0.591)	< 0.0001
Basic science	146	40 (20)	1.061 (0.707, 1.590)	0.7754
Other type of study	53	7 (8)	0.402 (0.179, 0.906)	0.0280

Table 3. Journals in which International Association of Paediatric Dentistry abstracts were subsequently published as a scientific paper (> 2 papers).

Journal	Number of papers published
Paediatric dental journals	
International Journal of Paediatric Dentistry	30
Pediatric Dentistry	19
Journal of Dentistry for Children	12
Journal of Clinical Pediatric Dentistry	11
European Journal of Paediatric Dentistry	4
Journal of the Indian Society of Paediatric Dentistry	4
Paediatric medical journals	
*Journal of Pediatrics**	2
General dental journals	
*Dental Traumatology**	14
*Community Dentistry Oral Epidemiology**	11
*Caries Research**	6
*Acta Odontologica Scandinavica**	5
*Journal of Dentistry**	5
Endodontics and Dental Traumatology	4
*British Dental Journal**	4
Clinical Oral Investigations	3
*European Journal of Oral Sciences**	3
*European Journal of Orthodontics**	3
Journal of Clinical Dentistry	3
*Journal of Periodontology**	3
Acta Odontológica Latinoamericana (Argentina)	2
Annales Universitatis Mariae Curie-Sklowdowska Sectio D. Medicina (Lublin)	2
*Archives of Oral Biology**	2
Brazilian Dental Journal	2
Collegium Antropologicum (Croatia)	2
Compendium of Continuing Dental Education	2
Community Dental Health	2
*Connective Tissue Research**	2
*Journal of Dental Research**	2
Other journals (one published paper)	40

The journals with the highest impact factor were in descending order: *Pediatrics, Rheumatology, Journal of Pediatrics, Journal of Dental Research, Biochemical and Biophysical Reseach Communications* all above 3.000 in impact factor.

The median time from the congress to publication was 18 months, and the mean time 20 ± 20 months. Ninety-one per cent of the papers were published within 5 years after the congress (Fig. 2). Fourteen of the papers were published before the congresses. Most of the papers (194/204) were published in English-language journals.

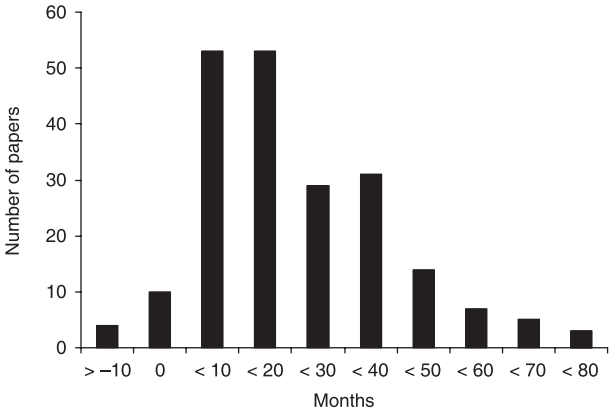

Fig. 2. Time in months from presentation of abstract to subsequent publication of scientific paper.

Factors predictive of publication

Among the abstracts investigated, those in the area of pain (OR = 3.225; 95% CI 1.227, 8.476; $P = 0.0175$) and dental traumatic injuries (OR = 2.090; 95% CI 1.207, 3.620; $P = 0.0085$) were published significantly more often than other areas of paediatric dentistry (Fig. 1). The country from which the abstract originated also influenced the likelihood of subsequent

publication. Studies originating from Sweden (65%) and the UK (46%) had the highest publication rates (Table 1). The odds for presentations from Sweden and the UK – as opposed to presentations from all other countries being published were OR = 5.494 (95% CI 2.584, 11.683; $P < 0.0001$) and OR = 2.783 (95% CI 1.807, 4.288; $P < 0.0001$), respectively.

As can be seen in Table 2, prospective randomized controlled trials had a high publication rate, the odds for being published was OR = 3.154 (95% CI 1.737, 5.725; $P < 0.0002$). On the other hand, abstracts classified as case reports were significantly less likely to be published, OR = 0.358 (95% CI 0.217, 0.591; $P < 0.0001$).

Regarding the sample size in clinical observational studies, the studies that were published included a mean of 379 ± 870 individuals compared to 516 ± 1983 in those that were not published, a non-significant difference.

Consistency between abstract and subsequent publication

Of the 204 published articles, no changes regarding title and authors were found in 45 (22%) of the abstracts, changes to either the number of authors or the title of the paper was found in 82 (40%), and changes in both in 77 (38%). Papers classified as basic science, case reports, and observational studies ($P < 0.05$) had changes to the authorship significantly more often ($P < 0.05$), whereas randomized trials did not.

Discussion

This investigation was conducted to study the publication rate of abstracts presented to the IAPD congresses in London and Paris. The proportion of abstracts that are subsequently published as full-length papers in peer-reviewed journals can be considered as a quality measure of the meeting[8]. The overall publication rate of abstracts published at the IAPD congresses was 27%. This is somewhat lower than 46%, in a previous report studying abstracts presented at the European Orthodontic Society, European Organization of Caries Research, and from International Association of Dental Research[1]. Previous studies in other fields of medicine have shown a publication rate varying from 10% to 78%[2–4].

According to a study examining the barriers to subsequent publications of abstracts presented to annual orthopaedic meetings, it was found that failure to publish most often was because of the fact that 47% of the investigators did not have time to prepare a manuscript for publication, whereas 31% stated that the research was still ongoing[9]. So, it is more likely that research is unpublished because of failure to submit the paper rather than rejection from a journal. It is also noteworthy that congress abstracts may present preliminary results that show significant findings, but fail to present a significant finding when the final paper is presented. This study supports the concept that abstracts should not be used as references in scientific communications or textbooks[2]. Other reported reasons for failure to publish include poor quality of research design, small sample size, and negative findings. Studies on abstract quality have reported that structured abstracts are better in quality, more informative, and easier to read[10]. Several journals including the International Journal of Paediatric Dentistry have adopted structured abstracts as a mandatory component of the publication process.

The mode of presentation affected publication rate; orally presented abstracts at the IAPD congresses had a significantly higher publication rate, 40% compared to 21% for poster discussion presentations and 19% for poster presentations. This is in agreement with previous findings[11]. In a study of selected abstracts from proceedings of the American Society for Clinical Oncology in 1984, 78% of the orally presented abstracts were published compared to 35% of those selected for poster presentation[12]. The reason for this may be the selection process of the congress organizers; well-known researchers are preferred as oral speakers, and also research presenting positive findings may be given priority for oral presentation. Most of the papers were published in four (five) paediatric-dentistry-speciality journals. Two are based in the USA: Journal of Clinical Pediatric Dentistry and Pediatric Dentistry (merged with the Journal of Dentistry for Children), and two

are based in Europe: European Journal of Paediatric Dentistry and the International Journal of Paediatric Dentistry. None of these journals have a high scientific recognition, and lack an ISI impact factor. To attract high-quality research, there is a need for a paediatric-dentistry-specialist journal with high impact.

The mean time from presentation at the congress to final publication was 20 months. The mean time is in the same magnitude as in several other reports[13–15]. In a study of papers presented at the otorhinolaryngological research society meeting[16], the mean time was 22 months. It is worth noting that some abstracts actually had been presented long before the congress and that this should be discouraged.

Papers in the field of pain and traumatic injuries were more likely to be published. Particularly in the field of pain, there is a tradition of interprofessional collaboration which may improve the likelihood for subsequent publication. If the study was classified as a randomized controlled trial, the likelihood for subsequent publication was significantly higher, because these types of studies allow for more strict scientific conclusions, and they are favoured by journals. Abstracts from Sweden and the UK were significantly more often published. The respective academic systems encourage publication and also allow researchers to allocate time for the publication process.

Most of the abstracts published had changes to both number of authors and title of the papers. This is consistent with previous reports[2]. Because abstract guidelines often have a word limit, this is not surprising. Studies classified as randomized controlled trials were less probable to have changes in the authorship. This may be because of the fact that these studies are better planned and the roles of each individual were made clear from the beginning.

This study used PubMed, which includes Medline. This database is made available free of charge and is the tool used by most researchers and clinicians worldwide to identify research papers in the area of interest. This database favours papers written in English and published in the USA and in Europe. So, it is important to acknowledge that more papers could have been identified if the search would have included other databases. In several countries, there are non-English journals in the field of paediatric dentistry such as in Japan, South Korea, and France that are not included in the PubMed database.

The method used in this study has been used in previous studies and is based on the last name of the first author, followed when necessary by the last name of the second and last authors and the cross matching of the names with either the words *dental*, *oral*, or *keywords* from the abstract title. This strategy seemed to be excellent because the kappa value for inter-examiner agreement was 0.98.

In conclusion, the results of this study show that 40% of orally presented abstracts at IAPD congresses were followed by a subsequent scientific publication in a peer-reviewed journal. Unpublished work represents a huge amount of effort that should not be wasted. The IAPD should take responsibility to educate abstract presenters on how to write their scientific papers for publication.

What this paper adds

- One third of abstracts presented at IAPD congresses in 1999 and 2001 were followed by a published scientific paper.
- Papers in the field of pain and traumatic injuries as well as randomised controlled trials were more likely to be published.

Why this paper is important to paediatric dentists

- Abstracts should not be used as references in scientific communications and the results should not be applied to changes in clinical practice.
- There is need for a paediatric-dentistry-specialist journal with an ISI impact factor.

References

1 Scholey JM, Harrison JE. Delay and failure to publish dental research. *Evid Based Dent* 2005; **6**: 58–61.
2 Bhandari M, Devereaux PJ, Guyatt GH, *et al.* An observational study of orthopaedic abstracts and subsequent full-text publications. *J Bone Joint Surg* 2002; **84A**: 615–621.
3 Riordan FAI. Do presenters to paediatric meetings get their work published? *Arch Dis Child* 2000; **83**: 524–526.
4 Scherer RW, Dickersin K, Langenberg P. Full publication of results initially published in abstracts. A meta-analysis. *JAMA* 1994; **272**: 158–162.
5 Abstracts from the 17th Congress of the International Association of Paediatric Dentistry, London 1999. *Int J Paediatr Dent* 1999; **9** (Suppl. 1).

6 Abstracts from the 18th Congress of the International Association of Paediatric Dentistry, Paris. 2001.
7 ISI Web of Knowledge. *Journal Citations Reports*. [WWW document]. URL: http://portal.isiknowledge.com.
8 Walby A, Kelly A, Georgakas C. Abstracts to publication ratio for papers presented at scientific meetings: how does emergency medicine compare? *Emerg Med* 2002; **13**: 460–464.
9 Sprague S, Bhandari M, Devereaux PJ, *et al.* Barriers to full-publication following presentation of abstracts at annual orthopaedic meetings. *J Bone Joint Surg* 2003; **85A**: 158–163.
10 Taddio A, Pain T, Fassos FF, Boon H, Hersich AL, Einarson TR. Quality of nonstructured and structured abstracts of original research articles in the British Medical Journal, the Canadian Medical Association Journal and the Journal of the American Medical Association. *CMAJ* 1994; **50**: 1611–1614.
11 Carroll AE, Sox CM, Tarini BA, Ringold S, Christakis DA. Does presentation format at the pediatric academic societies' annual meeting predict subsequent publication? *Pediatrics* 2003; **112**: 1238–1241.
12 De Bellefeuille C, Morrison CA, Tannock IF. The fate of abstracts, submitted to a cancer meeting: factors which influence presentation and subsequent publication. *Ann Oncol* 1992; **3**: 187–191.
13 Arrivé L, Boelle PY, Dono P, Lewin M, Monnier-Cholley L, Tubiana JM. Subsequent publication of orally presented original studies within 5 years after 1995 RSNA scientific assembly. *Radiology* 2004; **232**: 101–106.
14 Jasko JJ, Wood JH, Schwartz HS. Publication rates of abstracts presented at annual musculoskeletal tumor society meetings. *Clin Orthop Relat Res* 2003; **415**: 98–103.
15 Marx WF, Cloft HJ, Do HM, Kallmes DF. The fate of neuroradiologic abstracts presented at national meetings in 1993: rate of subsequent publication in peer-reviewed, indexed journals. *Am J Neuroradiol* 1999; **20**: 1173–1177.
16 Roy D, Sankar V, Hughes JP, Jones A, Fenton JE. Publication rates of scientific papers presented at the otorhinolaryngological research society meetings. *Clin Otolaryngol* 2001; **26**: 253–256.