

Full journal publication of abstracts presented at the Nordic Congress of General Practice in 2009 and 2011

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ABSTRACT

Objective: To determine the overall publication rates for abstracts presented at two consecutive Nordic Congresses of General Practice and to evaluate determinants for these publication rates.

Design: Prospective study.

Setting: MEDLINE (PubMed) and Google Scholar were searched for relevant publications from 1 January 2009 up until 31 August 2014.

Methods: Abstracts accepted for oral or poster presentation were identified from the original congress booklets from the Nordic Congresses of General Practice in 2009 and 2011. Based on PubMed and Google Scholar searches, we subsequently identified full journal publications within a 36-month follow-up from both congresses. In cases of doubt, the first author was contacted directly.

Main outcome measures: Full journal publication within 36 months after the congress.

Results: A total of 200 abstracts were analyzed. Of these, 85 (42.5%) were identified with a full publication within 36 months after the congress. More abstracts from the 2011 congress were published compared to the 2009 congress odds ratio (OR) 1.97, 95% confidence interval (CI) (1.10; 3.50). Abstracts accepted for oral presentation were more often published OR 1.94, 95% CI (1.08; 3.50) than accepted poster abstracts. In the multivariate analysis, a university affiliation for both first and last author increased the probability for publication OR 4.23, 95% CI (1.71; 10.42), as well as more than two authors. An optimal number, based on the highest OR, seems to be 3–4 authors with OR 2.43, 95% CI (1.07; 5.54). Qualitative studies were published at the same frequency as quantitative studies OR 1.36, 95% CI (0.57; 3.24).

Conclusion: Less than half of the abstracts accepted for oral or poster presentation at two consecutive Nordic Congresses of General Practice were published as full text articles within 36 months.

KEY POINTS

- Congress abstracts accepted for Nordic Congress of General Practice are not indexed in international search databases.
- Less than half of the abstracts accepted for oral or poster presentation at two consecutive Nordic Congresses of General Practice were published as full text articles within 36 months.
- Future congress committees could address this aspect in order to increase the visibility of and accessibility to research within the field of general practice.

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Introduction

Research in general practice is important in order to improve overall health care [1] and is often initially presented at scientific family medicine congresses. The Nordic Federation of General Practice coordinates Nordic Congresses every second year [2]. Since 1979, these congresses have presented the latest within

research, education and quality improvement. However, the congress abstracts are not indexed in international search databases; this is only done when a scientific article based on the abstract is published in a journal. Optimally, the vast majority of abstracts selected for presentation at the Nordic congresses should be published in peer reviewed journals within

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a short period after the congress presentation to impact subsequent research and influence clinical practice [3].

Publishing a scientific article is a time-consuming process and only some manuscripts end up being published in journals indexed in major search databases. Studies in other medical specialties have indicated that the publication rate of accepted congress abstracts in peer reviewed journals ranges from 44% to 63%, depending on methodology, specialty, author experience and results of the individual abstracts [4,5].

General practice is an area with increasing research activity [6]. Research regarding publication rates for abstracts presented at general practice congresses is sparse. Thus, we have only identified one recent American survey but no European surveys [7]. Consequently, the purpose of this study was to determine publication rates for abstracts presented at two consecutive Nordic Congresses of General Practice and to evaluate factors affecting publication rates.

Methods

Material

All abstracts accepted for poster or oral presentation at the 16th and 17th Nordic Congress of General Practices, held in 2009 and 2011, respectively, and

published in the official congress booklet, were included in the analysis. Based on previous research, a follow-up of at least 36 months was considered suitable, in order to account for adequate time for the editorial process [4]. We excluded abstracts accepted for workshops and symposiums, because the scope and format of these were very heterogeneous. Further, abstracts published in peer-reviewed journals before or during the same month, where the congress took place, were considered to be published before the congress; these were excluded as well.

Abstracts were classified according to presentation format (poster or oral), research area (clinical or health care research) and research design (quantitative, qualitative, mixed or other). Furthermore, we recorded the name, affiliation and country of origin of first and last authors, publication language as well as research stage (planning, data collection and concluded data collection) (Table 1).

Assessment of subsequent publication

In order to assess publication rates, we searched Medline on the PubMed server and Google Scholar. The search was time limited from 1 January 2009 through 31 August 2014 in order to allow for a 36-month follow-up for both congresses. In order to avoid overlooking papers, we conducted several

Table 1. Characteristics and unadjusted logistic regression of accepted abstracts for the Nordic conferences 2009 and 2011 stratified by publication status.

Characteristics		Not published papers	Published papers	Total	<i>p</i> value	Odds ratio (95% CI)	<i>p</i> value	Relative importance (%)
Congress year	2009	58 (50.4)	29 (34.1)	87 (43.5)		1		
	2011	57 (49.6)	56 (65.9)	113 (56.5)	.0214	1.97 (1.10; 3.50)	.0221	6.95
Presentation form	Poster	53 (46.1)	26 (30.6)	79 (39.5)		1		
	Oral	62 (53.9)	59 (69.4)	121 (60.5)	.0267	1.94 (1.08; 3.50)	.0276	4.44
Affiliation of first author	Others	55 (47.8)	17 (20.0)	72 (36.0)		1		
	University	60 (52.2)	68 (80.0)	128 (64.0)	<.0001	3.67 (1.92; 6.99)	<.0001	
Affiliation of last author	Others	58 (50.4)	15 (17.7)	73 (36.5)		1		
	University	57 (49.6)	70 (82.4)	127 (63.5)	<.0001	4.75 (2.44; 9.25)	<.0001	25.35
Country of first author	Rest of the world	12 (10.4)	2 (2.3)	17 (7.0)		1		
	Scandinavian	103 (89.6)	83 (97.7)	186 (93.0)	.0278 ^a	4.83 (1.05; 22.20)	.0428	–
Country of last author	Rest of the world	6 (6.2)	2 (2.4)	8 (4.5)		1		
	Scandinavian	91 (93.6)	80 (97.6)	171 (95.5)	.2965 ^a	2.64 (0.52; 14.44)	.2431	–
Research area	Health care	88 (76.5)	45 (52.9)	133 (66.5)		1		
	Clinical	27 (23.48)	40 (47.1)	67 (33.5)	.0005	2.90 (1.58; 5.31)	.0006	9.83
Number of authors	(1–2)	47 (40.9)	14 (16.5)	61 (30.5)		1		
	(3–4)	41 (35.65)	43 (50.6)	84 (42.0)		3.52 (1.69; 7.34)	.0008	
	4<	27 (23.48)	28 (32.9)	55 (27.5)	.001	3.48 (1.57; 7.73)	.0022	16.29
Research stage	Planning phase	19 (16.5)	2 (2.4)	21 (10.5)		1		
	Data gathering phase	14 (21.2)	16 (18.8)	30 (15.0)		10.86 (2.14; 55.08)	.0040	
	Concluded project	82 (71.3)	67 (78.8)	149 (74.5)	.0031 ^a	7.76 (1.75; 34.52)	.0071	18.93
Research method	Quantitative	72 (62.6)	65 (76.5)	137 (68.5)		1		
	Qualitative	19 (16.5)	18 (21.2)	37 (18.5)		1.05 (0.51; 2.17)	.8965	
	Mixed	9 (7.9)	1 (1.2)	10 (5.0)		0.123 (0.02; 0.10)	.0498	
	Other	15 (13.0)	1 (1.2)	16 (8.0)	.0005 ^a	0.07 (0.01; 0.58)	.0128	18.22

^aMonte Carlo simulated *p* value.

Country of first and last author was removed from the multivariate analysis (low cell count).

searches in PubMed and Google Scholar starting on 1 September 2015 up until 1 March 2016.

In searching for the abstracts, we initially combined the last name and initial(s) of the first author. If no full text article was found, the last author's family name and initial(s) was included. If a corresponding paper was still not identified, a broad keyword from the title was used in combination with the names of both authors, combined with the Boolean operator "OR". We considered a presented abstract as being published if a corresponding abstract in title, study design, results and one author name was identified in our search. In cases of doubt, we tried to reach a consensus decision and/or contacted the first author or the institution directly.

When a full publication was confirmed, we recorded the journal's title, and date of electronic publication.

Data were double entered in order to minimize data entry errors.

Analysis

Differences in characteristics between abstracts published within 3 years after the congress and abstracts that were not published within this time period were analyzed using chi-square tests; Monte Carlo simulation was used when the count in a category was low. The associations of the abstract characteristics with the published status after 3 years were assessed by the odds ratio (OR) of a category of this characteristic compared to a baseline characteristic. The comparative impact of the characteristics on publication probability

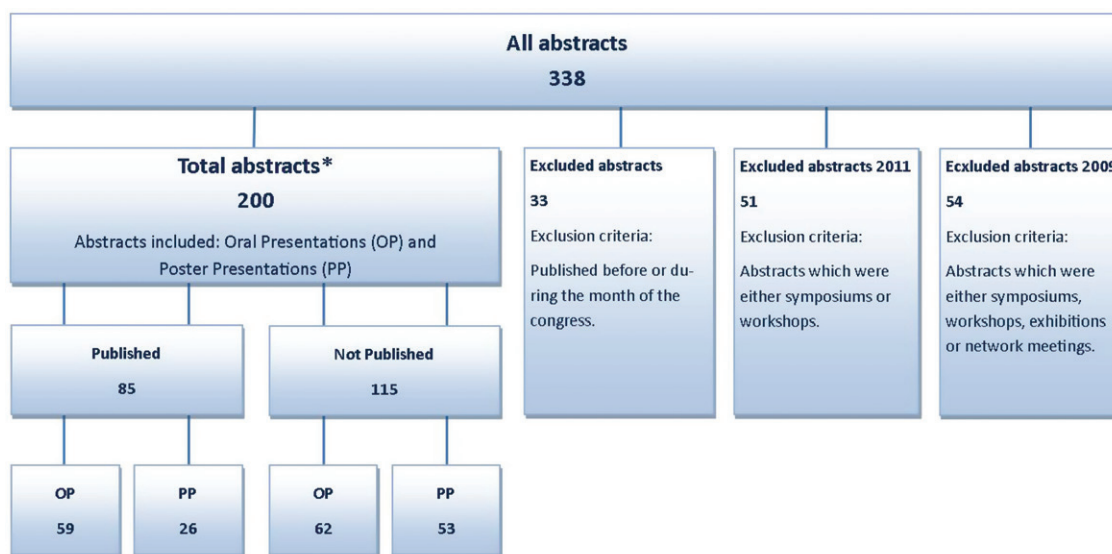
was assessed by relative importance [8], that is, the mean increase in model fit attributable to the addition of a variable to the model. To avoid over adjustment, a multivariable logistic regression model included only the five most important characteristics. To assess the University affiliation variable in a multivariable setting, we combined the variables university affiliation of the first and last author into one with 3 levels (University affiliation, not university affiliated, mixed university affiliation).

Results

For the consecutive Nordic Congresses of General Practice held in 2009 and 2011, a total of 338 abstracts were identified from the congress booklets. In total, 200 abstracts accepted for oral or poster presentation in the two congresses were included in the analysis of which 85 (42.5%) were identified with a full publication within 36 months after the congress (Figure 1).

Characteristics of the included abstracts are presented in Table 1. In the univariate logistic regression model, abstracts from the congress in 2011 had a higher publication rate compared to the 2009 congress OR 1.97, 95% CI (1.10; 3.50), abstracts accepted for oral presentation were published more often OR 1.94, 95% CI (1.08; 3.50). Including abstracts that were already published before or during the congress increased the overall publication rate by from 42.5% to 50.6%.

Publication status of abstracts in a 36 months period from the two congresses is presented in Figure 2.



* Date for search in Pubmed and Google Scholar: September 1st up until March 1st 2016

Figure 1. Flow of the study.

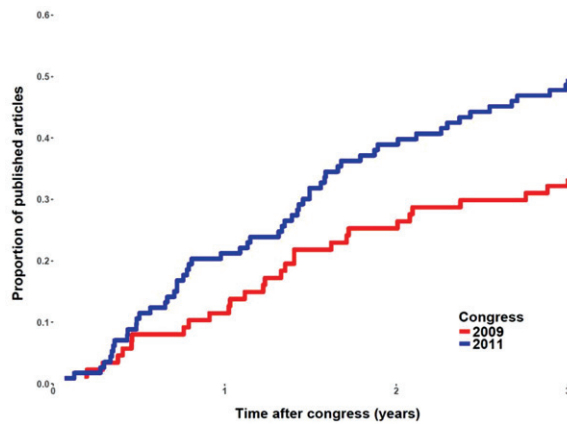


Figure 2. Full publication of abstracts accepted for the two Congresses.

Table 2. Multivariate logistic analysis on accepted abstracts from Nordic conferences 2009 and 2011 stratified by publication status.

	Odds ratio	95% CI	<i>p</i> value
Affiliation to a university			
None ^a	1		
Mixed ^a	2.52	(0.86; 7.37)	.0930
Both ^a	4.23	(1.71; 10.42)	.0018
Research area			
Health care	1		
Clinical	1.64	(0.80; 7.37)	.1754
Number of authors			
(1–2)	1		
(3–4)	2.43	(1.07; 5.54)	.0340
4<	2.17	(0.87; 5.42)	.0990
Research method			
Quantitative	1		
Qualitative	1.36	(0.57; 3.24)	.4836
Mixed	0.54	(0.06; 5.00)	.5842
Other	0.17	(0.02; 1.51)	.1118
Research stage			
Planning phase	1		
Data gathering phase	10.13	(1.74; 59.05)	.0100
Concluded project	8.39	(1.69; 41.62)	.0092

^aAffiliation of first author and last author.

In the multivariate analysis, a university affiliation for both first and last author increased the probability for publication OR 4.23, 95% CI (1.71; 10.42), as well as more than two authors. An optimal number, based on the highest OR, seems to be 3–4 authors with OR 2.43, 95% CI (1.07; 5.54). Qualitative surveys were published at the same frequency as quantitative surveys OR 1.36, 95% CI (0.57; 3.24) (Table 2).

Discussion

To our knowledge, this is the first study to survey the publication rates of abstracts accepted at Nordic Congresses of General Practice. The main result was that less than half of the included abstracts were published within a follow-up period of 36 months and

that abstracts with at least one author with a university affiliation were more likely to publish their abstract as a full-text publication in a journal.

The publication rate increased from the 2009 to the 2011 congress (Figure 2). Even though this is an interesting result, we do not believe that this could predict future trajectories because we only examined abstracts presented at two congresses. The overall publication rates at the Nordic Congresses of General Practice seem to be in line with other specialties [5–7,9]. However, half of the accepted abstracts do not make it to a full text publication. Based on this survey, we are not able to assess the potential consequences of the high proportion of unpublished abstracts. This could be because of low research quality, but it may also mean that interesting thoughts and ideas for general practice will not be available to a broader public. An increase in the proportion of published papers would increase the overall transparency of research in general practice and represent an important knowledge database for individuals interested in research in general practice. Our survey demonstrates a substantial time lag in publishing (Figure 2). This time lag is also identified in other surveys with other specialties and seems to be a generic problem [5,7]. Our primary outcome was full publication during a 36 months follow-up period. The follow-up period was based on recommendation from other papers within this field. It has been shown that extending the follow-up period to 5 years after presentation only increases in the overall publication rates marginally [3].

It was hardly a surprise that an author group including individuals with a university affiliation increased the probability of a full publication. This may indicate that the framing of the research project benefits from including researchers from a university affiliation.

Despite an increase in the proportion of qualitative research in medical journals over a 10-year period, the proportion remains low compared to quantitative research [10]. We found that the publication rate for qualitative research was comparable to that of quantitative research in a general practice setting. Previous research within the field have shown that some research methods, for example, RCT studies may have a higher chance of full journal publication than other type of quantitative surveys as well as studies with a “positive” result [4].

Limitations

We used a manual search based on the name of the first author or the last author. This procedure may

omit papers in which the authors have changed or moved byline-position from the abstract to the subsequent publication. If we did not have a match on authors, we did a free text search based on broad key word. Although in another setting, it has been demonstrated that the title changed in 40% from abstract to the publication [11]. Thus, the text search procedure could miss some papers as well. In order to address these obstacles, we had several consensus conferences and if we were still uncertain, we contacted the first author or the stated affiliation in order to clarify publication status. Other limitations include that our search strategy did not enable us to identify full publications in journal not indexed in the PubMed or Google Scholar (e.g. Embase) and also that we did not assess the quality of the individual abstract.

We excluded abstracts that were published before and during the congresses because we considered these abstracts as completed research projects in relation to subsequent publications. Including these abstracts increased the overall publication rate by from 42.5% to 50.6% which would not jeopardize the overall conclusion of our study. Further, we deleted workshops and symposiums due to the heterogeneous scope and format of these formats. However, some of the included abstracts may not be research or quality improvement projects and this could represent a potential bias.

Implications

Less than half of the accepted abstracts for oral and poster presentation at two consecutive Nordic Congresses of General Practice were published within 36 months. Future congress committees could address this aspect in order to increase the visibility of and accessibility to the abstracts within the field of general practice.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of this article.

References

- [1] van Weel C, Rosser WW. Improving health care globally: a critical review of the necessity of family medicine research and recommendations to build research capacity. *Ann Fam Med.* 2004;2:55–516.
- [2] Sigurdsson JA, Stavdal A, Getz L. The Nordic congresses of general practice: a gateway to a global treasure?. *Scand J Prim Health Care.* 2006;24:196–198.
- [3] Fosbol EL, Fosbol PL, Harrington RA, et al. Conversion of cardiovascular conference abstracts to publications. *Circulation.* 2012;126:2819–2825.
- [4] Song F, Parekh S, Hooper L, et al. Dissemination and publication of research findings: an updated review of related biases. *Health Technol Assess.* 2010;14:1–193.
- [5] Scherer RW, Langenberg P, von Elm E. Full publication of results initially presented in abstracts. *Cochrane Database Syst Rev.* 2007;(2):MR000005.
- [6] Post RE, Weese TJ, Mainous AG III, et al. Publication productivity by family medicine faculty: 1999 to 2009. *Fam Med.* 2012;44:312–317.
- [7] Post RE, Mainous AG, 3rd, O'Hare KE, et al. Publication of research presented at STFM and NAPCRG conferences. *Ann Fam Med.* 2013;11:258–261.
- [8] Johnson JW, Lebreton JM. History and use of relative importance indices in organizational research. *Organ Res Meth.* 2004;7:238–257.
- [9] Scherer RW, Dickersin K, Langenberg P. Full publication of results initially presented in abstracts. A meta-analysis. *JAMA.* 1994; 272:158–162.
- [10] Shuval K, Harker K, Roudsari B, et al. Is qualitative research second class science? A quantitative longitudinal examination of qualitative research in medical journals. *PLoS One.* 2011;6:e16937.
- [11] Bhandari M, Devereaux PJ, Guyatt GH, et al. An observational study of orthopaedic abstracts and subsequent full-text publications. *J Bone Joint Surg Am.* 2002;84-A:615–621.