

Do journals contribute to the international publication of research in their field? A bibliometric analysis of palliative care journal data

Catherine Walshe (Corresponding author)

Faraz Ahmed

Nancy Preston

c.walshe@lancaster.ac.uk

+44 (0)1524 510124

Division of Health Research, Lancaster University, Bailrigg, Lancaster, UK.

Abstract

Background: Research is important internationally, impacting on health service provision and patient benefit. Journals play an important dissemination role, but there may be geographical bias, potentially affecting access to evidence.

Aim: To understand if there is a relationship between the continent of journals and that of contributing authors.

Design: Bibliometric analysis of journal citation report data (June 2018). Odds ratio of association of an author being from region, region of journal publication, publication model and the number of papers.

Setting: Journals specialising in palliative care research, with an impact factor above the median impact factor for their most common indexing category.

Results: Five journals; 3 published in Europe (Palliative Medicine, BMJ Supportive and Palliative Care, BMC Palliative Care), 2 in North America (Journal of Pain and Symptom Management, Journal of Palliative Medicine). Authors were from 30+ countries, but mostly North American (54.18%) or European (27.94%). Preliminary sensitivity tests show that the odds of an author being from a North American institution increase 16.4 times ($p < 0.01$; 95%CI 12.9, 20.8) if the region of journal publication is North American. The odds of an author being from a European institution is 14.0 times ($p < 0.01$; 95%CI 10.9, 17.9) higher if the region of journal publication is European.

Conclusions: Publishers, editors and authors are concentrated in North America or Europe. North American authors are more present in North American journals, and European authors in European journals. This polarised approach, if replicated across

readerships, may lead to research waste, duplication, and be suboptimal for healthcare development.

Keywords: Publication bias; Publishing; Editorial policies; Publications as topic; palliative care.

Key statements:

What is already known about the topic?

- Publication bias is known, but usually associated with direction of research findings.
- Bibliographic analysis of databases shows publication rates differ between countries, and an increase in total number of publications over time.
- No journal focused analysis has yet been undertaken to understand their role in the geographical dissemination of knowledge.

What this paper adds

- Papers in highest ranked palliative care journals are typically cited between 1-9 times in the time period used to calculate an annual impact factor, with some journals having high numbers of uncited papers.
- Most authors in the highest ranked palliative care journals come from North American (54.18%) or European (27.94%) institutions
- Preliminary sensitivity tests show that the odds of an author being from a North American institution increase 16.4 times if the journal is North

American, and of being from a European institution 14.0 times increased if the journal is European.

Implications for practice, theory or policy

- Palliative care research publication is clustered geographically, and readers may not be widely exposed to potentially relevant research from other cultures or contexts if they only read journals from their own continents.

Background:

Research production and consumption is an international endeavour, with research enabling better health services, with measurable health benefits. The World Health Organisation endorses the power of research to enact change across the world ¹. Much research has potential to be translated to other contexts ², and wide dissemination is important.

Journals have an important role in research dissemination, but investigators, reviewers and editors can create bias³. Whilst bias is usually associated with the direction of study findings, the country of the investigators, reviewers, or editors may have an effect. Research from high-income countries is perceived as better, when appraised by those from the UK or US ^{4,5}. Papers from different countries published in the same journal have different citation rates⁶. Researchers from low- and middle-income countries are likely to publish in journals with lower impact factors, be less likely to lead research, or participate in systematic review networks ⁷.

Most bibliographic research is database driven, tracking research trends within countries, or across a particular field, a trend seen in palliative care bibliographic work, noting the growth in this field over time⁸⁻¹³. In palliative care, the volume of publications is considered to be part of the way of understanding development in a country¹⁴, although most 'international' research that involves two or more countries originates from Europe⁸. No studies examine how palliative care journals shape their own field.

In June 2018 the release of InCites Journal Citation Reports included new journal data on contributing items and author country enabling a journal focused analysis. We present a worked example in the field of palliative care.

Methods:

Research question: Is there a relationship between the continent of highest impact palliative care journals and that of contributing authors? *Objectives:* To describe and compare citation counts of highest impact palliative care journals. To understand the geographical distribution of contributing authors to highest impact palliative care journals. To discover if there is a relationship between the country/continent of the journal and the proportion of contributing authors.

Design: Descriptive analysis of publically available data from the June 2018 Journal Citation Report Release.

Sampling: Journals specialising in palliative care research, identified from previous bibliographic reviews^{8-10, 13}, selecting those with an impact factor (IF) ≥ 2 with open manuscript submission, chosen as the median IF for the Healthcare Sciences and Services category (most common indexing category for such journals as there is no specific palliative care category) was 2.073.

Data collection: Data downloaded from June 2018 data release on journal impact factor (2017), contributing items, journals citing contributing items, contributions by country, Science Citation Impact Expanded (SCIE) subject area and ranking. Data on journal offices and editors were obtained from publisher's websites.

Data analysis: Data were tabulated, and country data were aggregated into continents. Data were described using counts, means and ranges. Once the geographical origins of journals that met our inclusion criteria were known, we constructed two logistic models (sensitivity test). We estimated the odds ratio of the association between an author being from a North American institution (Model 1) or European institution (Model 2), the region of journal publication (European versus

North American), publication model (open access versus mixed publication models) and the number of papers published in 2015 and 2016 (<300 versus ≥300 papers); where the author being from a North American institution (Model 1) or European institution (Model 2) were the dependent variables.

No research ethics permissions were required for this study as it used publically available data.

Results

Five journals met our inclusion criteria out of 11 indexed; 3 published in Europe (Palliative Medicine (IF3.78), BMJ Supportive and Palliative Care (IF2.385) and BMC Palliative Care (IF2.335)), 2 in North America (Journal of Pain and Symptom Management (IF3.249), Journal of Palliative Medicine (IF2.49)). All are ranked within Healthcare Sciences and Services: two in quartile one (Palliative Medicine ranked 15/94 and Journal of Pain and Symptom Management ranked 18/94), others are in quartile two (Journal of Palliative Medicine 19/94, BMJ Supportive and Palliative Care 35/94 and BMC Palliative Care 37/94).

Descriptive data for each journal on contributing papers, citation count ranges, country of contributing authors and publisher/editor are displayed in table 1.

<Insert table 1 around here>

Journals published between 130-406 papers, 1185 papers in total. Only 5 papers received 20+ citations in the citable period, most papers were cited 1-9 times. Many papers (23.97%) were uncited, with variability between journals from 15.38% (Palliative Medicine) to 39.23% (BMJ Supportive and Palliative Care).

Each journal had contributing authors from 40-50 countries (supplementary Table 1), but there was an overall a preponderance of authors from North American (54.18%) or European (27.94%) institutions. Small numbers of contributing authors came from African or South American institutions. The top five journals citing these contributions are presented in table 2. Authors appear likely to cite papers published within the publishing journal, or within a journal published within the same region.

<Insert table 2 around here>

<Insert figure 1 around here>

Model 1 showed that the odds of an author being from a North American institution, on average, increase 16.4 times ($p < 0.01$; 95%CI 12.9, 20.8) compared to an author from another region, if the region of publication is reported as North American in comparison to being European. The odds of an author being from a North American institution increased (odds ratio 1.3 times $p < 0.01$; 95%CI 1.1, 1.6), if the journal had published <300 papers in 2015 and 2016, in comparisons to journals that published ≥ 300 . The relationship between publication model (open access versus mixed publication models) to an author being from a North American institution in the published papers sample was not statistically significant ($p = 0.88$).

Model 2 showed that the odds of an author being from a European institution was 14.0 times increased ($p < 0.01$; 95%CI 10.9, 17.9) in comparison to an author being from another region, if the region of publication is reported as European in comparison to being North American. However, the odds of an author being from a European institution decreased (odds ratio=0.6 $p < 0.01$; 95%CI 0.5, 0.8) if the journal had published <300 papers in 2015 and 2016, in comparisons to journals that published ≥ 300 papers. The odds of author being from a European institution was

2.2 times ($p < 0.01$; 95%CI 1.8, 2.9) increased in comparison to an author being from another region, if the journal was an open access publication model, compared to a journal with mixed publication model. Full data are in supplementary Table 2.

Discussion

Main findings

Contributions to papers published in the highest impact journals specialising in palliative care are mostly from authors based in North American or European institutions, with North American journals carrying more papers than their European counterparts. North American authors are more present in North American journals, and European authors in European journals. The fully open access journal appears more 'international'. Citations to contributing items were likely to be from either the same journal, or those published in the same geographical region. This was particularly noted in North American journals. There appears to be insularity, and this may mean that readers are not widely exposed to potentially relevant research from other cultures and contexts. This cannot be healthy for any research field.

What this study adds?

First, the polarisation of papers in journals from the author's 'home' continent is likely to be wasteful. There may be duplication of effort, and funders may invest in research that is not warranted, or could be conducted in a different way¹⁵. Second, this is sub-optimal for healthcare development, particularly in lower- and middle-income countries, as publication, income, and healthcare development are correlated^{16, 17}. Third, this may not enable the development of research knowledge and skills as authors from lower- and middle-income countries are less likely to be leading published research^{11, 18}. Research funders can play a role, as the emphasis

on open access publishing from some European funders appears to have had an impact. Fully open access publishing models are, however, likely to be problematic given the high number of unfunded studies published in this field^{19, 20}.

Strengths and limitations of the study

There are limitations to this approach. First, we were reliant on publically available data. For authorship, for example, data on all authors country affiliations is given irrespective of study role. We do not know who led the studies, and from what countries, or how authors in multiple papers were handled. Our logistic models are limited by available data, thus we are unable to adjust and take account of such variables. Second, the logistic models should be seen as a sensitivity test to provide further context, as we had only 4,402 observations across 5 journals and range of variables. Nevertheless, it is worth noting that 4,402 observations are based on the entire population of the top 5 journals that met our criteria, and reflect the present situation. Third, not all palliative care research is placed within these journals, and we did not look at research in general or disease specific journals. Fourth, the only journals that met our criteria were English language journals. It may be that people for whom English is not a first language choose to publish elsewhere.

Conclusions

Readers and editors of the highest impact journals in their field must be aware of the likely implications of a clustering of knowledge geographically, how this may impact on their knowledge and how this impacts clinical practice. Journals and editors need to be explicit about their international ambitions, potentially promote submissions from a range of countries, and could encourage broader interpretation of study findings.

Declarations

Authorship: CW conceptualised the study and drafted the manuscript; CW and NP descriptively analysed the data and FA created the logistic models. All authors read and approved the final manuscript.

Funding. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Competing interests: CW is Editor in Chief of Palliative Medicine. NP is Section Editor of BMC Palliative Care.

Ethics approval and consent to participate: No approvals were required as this study used publically available data.

Data sharing: Not applicable, data are already publically available.

<https://jcr.clarivate.com/JCRJournalHomeAction.action>

References

1. Dye C, Reeder JC and Terry RF. Research for universal health coverage. *Sci Transl Med* 2013; 5: 199ed113. 2013/08/24. DOI: 10.1126/scitranslmed.3006971.
2. Schloemer T and Schroder-Back P. Criteria for evaluating transferability of health interventions: a systematic review and thematic synthesis. *Implementation science : IS* 2018; 13: 88. 2018/06/27. DOI: 10.1186/s13012-018-0751-8.
3. Ekmekci PE. An increasing problem in publication ethics: Publication bias and editors' role in avoiding it. *Med Health Care Philos* 2017; 20: 171-178. 2017/03/28. DOI: 10.1007/s11019-017-9767-0.
4. Harris M, Marti J, Watt H, et al. Explicit Bias Toward High-Income-Country Research: A Randomized, Blinded, Crossover Experiment Of English Clinicians. *Health affairs (Project Hope)* 2017; 36: 1997-2004. 2017/11/16. DOI: 10.1377/hlthaff.2017.0773.
5. Harris M, Macinko J, Jimenez G, et al. Measuring the bias against low-income country research: an Implicit Association Test. *Globalization and health* 2017; 13: 80. 2017/11/08. DOI: 10.1186/s12992-017-0304-y.
6. Akre O, Barone-Adesi F, Pettersson A, et al. Differences in citation rates by country of origin for papers published in top-ranked medical journals: do they reflect inequalities in access to publication? *J Epidemiol Community Health* 2011; 65: 119-123. 2009/11/26. DOI: 10.1136/jech.2009.088690.

7. Chersich MF and Martin G. Priority gaps and promising areas in maternal health research in low- and middle-income countries: summary findings of a mapping of 2292 publications between 2000 and 2012. *Globalization and health* 2017; 13: 6. 2017/02/06. DOI: 10.1186/s12992-016-0227-z.
8. Clark J, Gardiner C and Barnes A. International palliative care research in the context of global development: a systematic mapping review. 2018; 8: 7-18. DOI: 10.1136/bmjspcare-2015-001008 %J BMJ Supportive & Palliative Care.
9. Payne SA and Turner JM. Research methodologies in palliative care: a bibliometric analysis. *Palliative Medicine* 2008; 22: 336-342.
10. Tieman J, Sladek R and Currow D. Multiple sources: mapping the literature of palliative care. *Palliative Medicine* 2009; 23: 6.
11. Pastrana T, Vallath N, Mastrojohn J, et al. Disparities in the contribution of low- and middle-income countries to palliative care research. *J Pain Symptom Manage* 2010; 39: 54-68. 2009/11/07. DOI: 10.1016/j.jpainsymman.2009.05.023.
12. Lynch T, Connor S and Clark D. Mapping levels of palliative care development: a global update. *J Pain Symptom Manage* 2013; 45: 1094-1106. 2012/09/29. DOI: 10.1016/j.jpainsymman.2012.05.011.
13. Liu C-J, Yeh T-C, Hsu S-H, et al. Bibliometric Analysis of Palliative Care-Related Publication Trends During 2001 to 2016. *American Journal of Hospice and Palliative Medicine*® 2018; 35: 1280-1286.
14. Woitha K, Garralda E, Martin-Moreno JM, et al. Ranking of Palliative Care Development in the Countries of the European Union. *J Pain Symptom Manage* 2016; 52: 370-377. 2016/06/12. DOI: 10.1016/j.jpainsymman.2016.03.008.
15. Chalmers I, Bracken MB, Djulbegovic B, et al. How to increase value and reduce waste when research priorities are set. *Lancet* 2014; 383: 156-165. 2014/01/15. DOI: 10.1016/S0140-6736(13)62229-1.
16. Rhee JY, Garralda E, Torrado C, et al. Publications on Palliative Care Development Can Be Used as an Indicator of Palliative Care Development in Africa. *J Palliat Med* 2017; 20: 1372-1377. 2017/07/01. DOI: 10.1089/jpm.2017.0168.
17. Cheong WL, Mohan D, Warren N, et al. Palliative Care Research in the Asia Pacific Region: A Systematic Review and Bibliometric Analysis of Peer-Reviewed Publications. *J Palliat Med* 2018 2018/12/21. DOI: 10.1089/jpm.2018.0447.
18. Patel V and Kim YR. Contribution of low- and middle-income countries to research published in leading general psychiatry journals, 2002-2004. *The British journal of psychiatry : the journal of mental science* 2007; 190: 77-78. 2007/01/02. DOI: 10.1192/bjp.bp.106.025692.
19. Walshe C. Palliative care research: State of play and journal direction. *Palliative Medicine* 2017; 31: 3-4. DOI: 10.1177/0269216316680139.
20. Wheeler JL, Greene A, Tieman JJ, et al. Key characteristics of palliative care studies reported in the specialized literature. *J Pain Symptom Manage* 2012; 43: 987-992. 2012/06/02. DOI: 10.1016/j.jpainsymman.2011.07.012.

Table 1. Contributing items and their citations, and country of contributing authors, publishers and editors per journal

Journal	BMC Palliative Care	Palliative Medicine	BMJ Supportive and Palliative Care	Journal of Palliative Medicine	Journal of Pain and Symptom Management	
Number of citations ^a	Number of papers (%)	Total (%)				
20+	0 (0)	0 (0)	0 (0)	1 (0.33)	4 (0.98)	5 (0.42)
15-19	0 (0)	3 (1.65)	0 (0)	3 (1.01)	3 (0.74)	9 (0.76)
10-14	4 (2.39)	5 (2.75)	0 (0)	5 (1.68)	14 (3.45)	28 (2.36)
5-9	12 (7.18)	39 (21.43)	10 (7.69)	30 (10.07)	69 (16.99)	160 (13.50)
1-4	114 (68.26)	107 (58.79)	69 (53.08)	171 (57.38)	236 (58.13)	699 (58.99)
0	37 (22.15)	28 (15.38)	51 (39.23)	88 (29.53)	80 (19.70)	284 (23.97)
Total	167	182	130	298	406	1185
Continent of each contributing author ^b	Author count (%)	Author count (%)				
Africa	13 (3.14)	9 (1.69)	8 (2.55)	5 (0.54)	21 (0.95)	56 (1.27)
Asia	36 (8.69)	27 (5.06)	23 (7.35)	84 (9.09)	185 (8.34)	355 (8.06)
Australia	112 (27.05)	65 (12.19)	36 (11.50)	35 (3.79)	90 (4.05)	338 (7.67)
Europe	187 (45.17)	345 (64.73)	204 (65.17)	108 (11.69)	386 (17.40)	1230 (27.94)
North America	63 (15.22)	85 (15.95)	41 (13.09)	685 (74.13)	1508 (67.99)	2382 (54.18)
South America	3 (0.72)	2 (0.37)	1 (0.32)	7 (0.76)	28 (1.26)	41 (0.93)
	414	533	313	924	2218	4402
Publication model	Open access or mixed publication model	Open access or mixed publication model	Open access or mixed publication model	Open access or mixed publication model	Open access or mixed publication model	
	Open access	Mixed publication	Mixed publication	Mixed publication	Mixed publication	
Journal country data ^c	Publisher Country (Editor in Chief Country)					
	BMC/UK (UK/Germany)	Sage/UK (UK)	BMJ/UK (UK)	Mary Ann Liebert/US (US)	Elsevier/US (US)	

^aThese data represent citation activity in 2017 to items published in the journal in the prior two years. ^bThese data summarize the characteristics of the journal's published content for the most recent three years, that is, 2017 and the two prior years, combined. This information is based on all listed authors and addresses. ^cEditors details are those as of 2015/16

Table 2. Top five journals carrying citations to contributing items for each selected palliative care journal

BMC Palliative Care (European Publisher)		Palliative Medicine (European Publisher)		BMJ Supportive and Palliative Care (European Publisher)		Journal of Palliative Medicine (North American Publisher)		Journal of Pain and Symptom Management (North American Publisher)	
Journal	Citations	Journal	Citations	Journal	Citations	Journal	Citations	Journal	Citations
BMC PC	47	PM	49	PM	18	JPM	101	JPSM	158
JPM	18	BMC PC	45	JPM	11	JPSM	44	JPM	81
APM	11	JPSM	35	BMJ SPC	9	JOP	27	SCC	41
PM	10	JPM	31	BMC PC	9	AJHPM	19	AJHPM	34
Plos One	10	IJPN	23	IJPN	8	BMC PC	16	JOP	27

APM. Annals of Palliative Medicine. JOP. Journal of Oncology Practice. AJHPM. American Journal of Hospice and Palliative Medicine. IJPN International Journal of Palliative Nursing. SCC. Supportive Care in Cancer. Shaded journals are published in North America, unshaded journals in Europe.

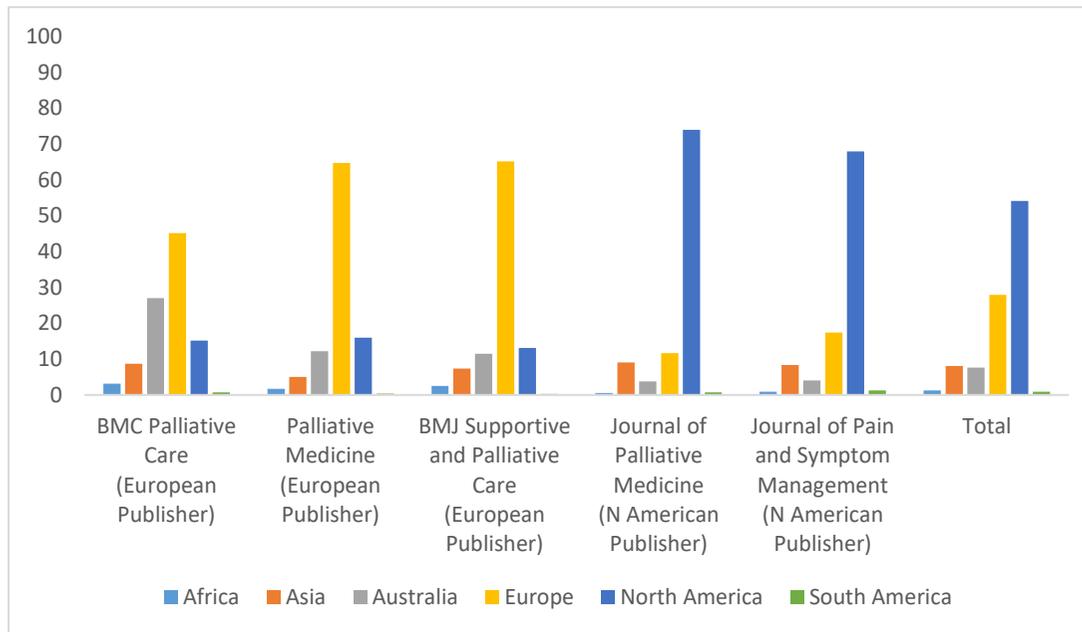


Figure 1. Continent as a percentage of each listed author published in each palliative care journal.