



Scope and geographical distribution of African medical journals active in 2005

Nandi Siegfried, Karishma Busgeeth, Edith Certain

Objectives. To identify all African medical journals actively publishing in 2005, and to create a geodatabase of these to evaluate and monitor future journal activity.

Design. A search was done for relevant African medical journals on electronic databases, library catalogues and internet sites, and a list was compiled of active journals. A survey was conducted via questionnaire of editors of all listed African medical journals defined as having an editorial base on the continent.

Results. One hundred and fifty-eight African medical journals were identified, published in 33 countries. One hundred and fifty-three editors were surveyed via email, post and/or fax. There was a 39% response rate from editors based in 17 countries. Fifty-one journals were published in English, 7 in French and 1 in Portuguese. Most journals were owned by an association or a society and were funded from a combination

of sources. Journals covered general medical and specialist medical interest equally. Most (41 of 59 journals) had a circulation below 1 000, and most (52/59) published 4 or fewer issues a year. Almost all the journals included original research, and articles were peer reviewed. Few were indexed on Medline ($N = 18$) and EMBASE ($N = 10$). Plotting journal location using Geographic Information Systems (GIS) software provided a snapshot view of current journal activity.

Conclusions. This study is likely to represent the most comprehensive list of current African medical journals. It confirms growth in African health care research and journal activity on the continent. Limited inclusion in international databases and accessibility to African researchers remain challenges in achieving publication of high-quality African research in high-quality African journals.

S Afr Med J 2006; **96**: 533-538.

Since the establishment of the World Association of Medical Editors (WAME) in 1995 there has been increasing recognition of the pivotal role that medical journal editors play in communicating health care research results.¹ Researchers may choose the journal to which they submit their articles, but their decision is influenced by the quality and accessibility of the chosen journal. Journal scope, content and quality are ultimately dependent on editorial practices. Many African researchers choose to publish their findings in international journals rather than African journals, but given that many international journals are not widely available in Africa, the impact of their research on local researchers is questionable.² In order to promote the creation of sustainable, high-quality public health and medical journals in Africa and to encourage African researchers to publish their findings locally, the UNICEF/UNDP/World Bank/World Health Organization (WHO) Special Programme for Research and Training in Tropical Diseases (TDR) facilitated the launch of the Forum for African Medical Editors (FAME) in 2002.³ In the same year TDR conducted a survey of 63 editors of African medical

journals and reported that most African medical journals were underfunded, lacked high-quality articles and standard peer-review practices and were invisible to the rest of the world.² Maintaining an up-to-date register of active African medical journals (both members and non-members of FAME) is crucial for monitoring the success of FAME and the growth and activity of African medical journals. To this end, this study aimed to: (i) identify all African medical journals actively publishing in 2005; (ii) survey the editors of African medical journals to establish the scope of each journal; and (iii) create a geodatabase of African medical journals using Geographic Information Systems (GIS) software to facilitate mapping of the journals.

Methods

Sample

In the absence of any published method for obtaining a representative sample of all African medical journals,⁴ we identified African medical journals from relevant databases and library catalogues. Search strategies for library catalogues and databases included African country names and relevant terms (e.g. tropical diseases). Table I lists the electronic databases, library catalogues and internet sites searched. We combined these results with a list of FAME registered editors and partners compiled and updated yearly by TDR from databases and personal communications. The final list comprised all African medical journals with an editorial office in Africa that were identified as being active in 2005 and for which we had contact details.

Clinical Trials Service Unit, Oxford University and United Kingdom Cochrane Centre, Oxford, UK

Nandi Siegfried, MB ChB, MPH Hons, FCPHM

South African Cochrane Centre, Medical Research Council, Tygerberg, W Cape

Karishma Busgeeth, BSc (Geomatics), MSc (Eng)

UNICEF/UNDP/World Bank/World Health Organization Special Programme for Research and Training in Tropical Diseases (TDR), Switzerland

Edith Certain, BA, MA, DLib

Corresponding author: Nandi Siegfried (nsiegfried@cochrane.co.uk)

**Table I. Databases, catalogues and internet sites searched to identify African journals****Electronic databases**

ISI Current Contents (Life Sciences) and ISI Current Contents (Clinical Medicine) Journal lists (renamed as ISI Web of Knowledge)	Contains over 1 120 of the world's clinical medicine journals defined as 'leading' based primarily on citation data url: http://portal.isiknowledge.com
ISI Master Journal list (renamed Journal Citation Report)	Contains over 16 000 international journals, books and proceedings in the sciences, social sciences, and arts and humanities url: http://portal.isiknowledge.com
ExtraMed Biomedical Periodicals Library (no longer updated)	The ExtraMED database contains the full text of over 3 000 Third-World biomedical journals
Zetoc electronic table of contents	Access to the British Library's Electronic Table of Contents url: http://zetoc.mimas.ac.uk/

Library catalogues

Library of the World Health Organization, Geneva	Contains a large collection of journals from tropical regions with a strong focus on Africa url: http://www.who.int/library
Library of the London School of Hygiene and Tropical Medicine	Contains a large collection of journals from tropical regions with a strong focus on Africa url: www.lshtm.ac.uk/library/catalogues.html
National Library of Medicine	Contains a large collection of African journals url: http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=journals
Kenya Medical Research Institute	Contains African journals specific to the East African region No url

Internet sites

African Journals Online (AJOL)	Access to African published research in all disciplines url: www.ajol.info/
FAME (Forum for African Medical Editors)	Access to FAME meeting reports, workshops and guidelines url: http://www.who.int/tdr/networking/fame/fame_guidelines.htm

Survey instrument

We developed a 15-item, 2-page questionnaire informed by the WAME survey published in 1999.¹ The form could be completed electronically or on paper and comprised both closed and open questions, allowing for additional commentary. We explained the aims of the survey in a covering letter and sent this by email to all those editors for whom we had email addresses, and by fax or postal mail for those without an email contact. Five weeks after the initial survey had been sent, a reminder letter was sent to non-responders. All surveys and covering letters were sent in both English and French.

Responses were entered into a spreadsheet and analysed using Microsoft Excel. In addition, we used the Environmental Systems Research Institute family of software, ArcGIS 9, to build a geodatabase that required the collection of geographical co-ordinates for each editorial office. ArcMap was then used to display the location of each journal along with its attributes.

Results**Location of journal editorial office**

We identified 158 African medical journals from 33 countries. We were unable to find complete contact details for 5 of these journals (3 from Senegal, 1 from Rwanda and 1 from Central African Republic), and surveys were sent to 153 journal editors on 15 August 2005 (123 by email, 10 by fax and 20 by post). After the initial round, 30 emails did not reach their destination and these were then re-sent by fax. Forty-five responses were received within the first month (by 12 September 2005). After a reminder stage, an additional 15 responses were received. We closed the survey after 13 weeks, having received an overall response rate of 39% (60/153) from 17 countries (Fig. 1). One journal was excluded from the analysis as the editorial base was located in France, giving a total of 59 journals. Fifty-one journals were published in English, 7 in French and 1 in Portuguese.

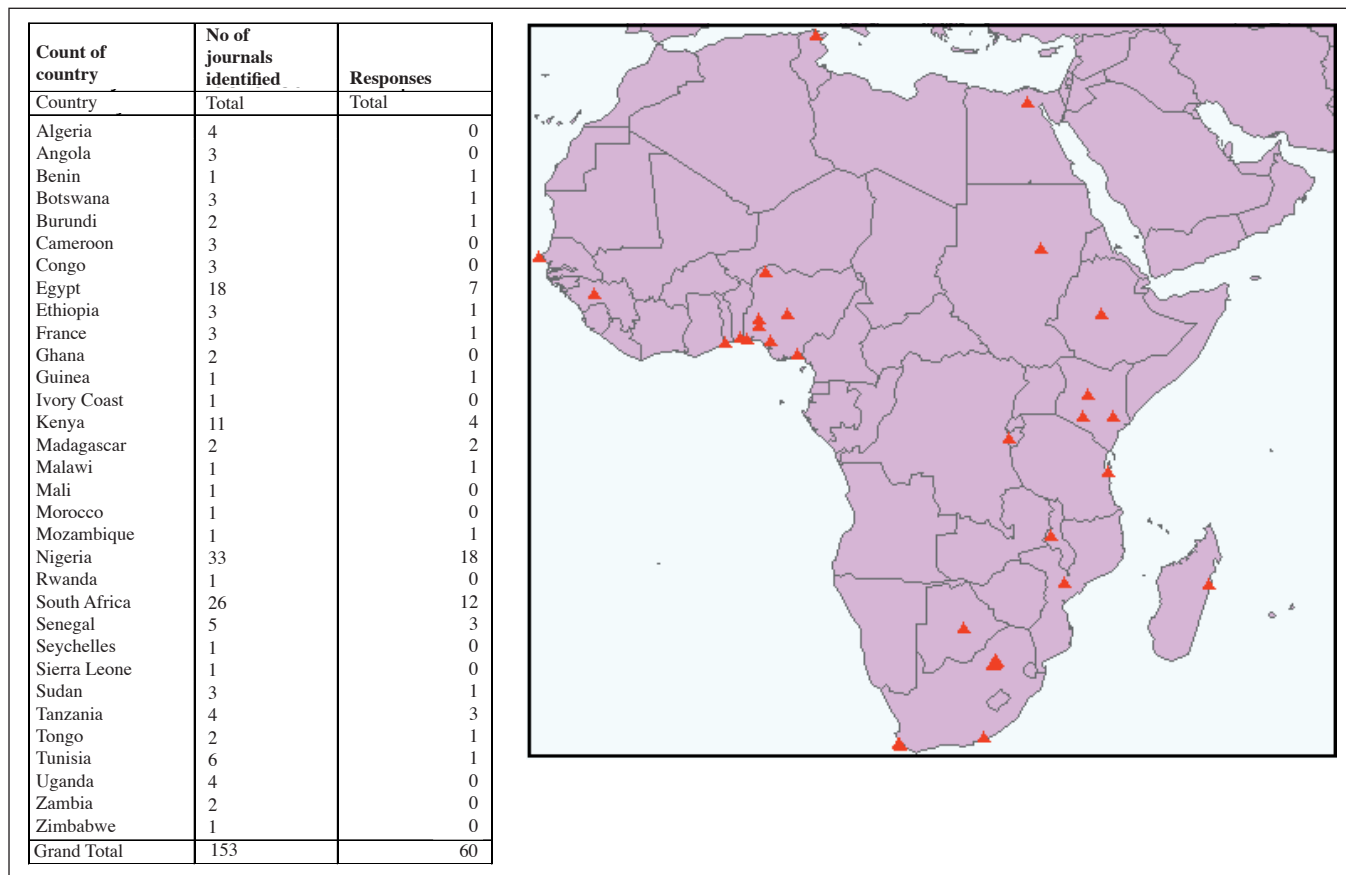


Fig. 1. Location of the editorial offices of active journals that responded to the survey. The diamond indicates the site of the journal office; more than one editorial office can be located at the same co-ordinate.

Scope of interest and circulation of journals

Most journals ($N = 28$) were owned by an association or a society and were funded from a combination of advertising, subscription and/or membership dues. Nine journals were fully funded by subscriptions and 4 by membership dues. Twenty-six editors described their journals as of general medical interest, 29 of specialist medical interest and 3 as of mixed interest (1 missing). The scope of interest of the 31 specialist-interest and mixed-interest journals was diverse and included public health, basic science, mental health and pharmacology (Table II). Thirteen journals had a circulation of less than 250, 18 had a circulation between 250 and 500, 10 had a circulation between 500 and 1 000 and 17 had a circulation over 1 000 (1 missing). Six of the 31 specialist or mixed-interest journals and 11 of the 27 general medical interest journals had a circulation over 1 000.

Frequency and year of first publication

Most journals ($N = 52$) were published quarterly or less often, with 4 journals published monthly and 2 journals appearing more than 12 times per year. Some editors commented that it was not always possible to ensure regular publication. The number of new publications has been increasing since 1993,

as shown in Fig. 2. The *South African Medical Journal* had the earliest publication date in 1895, followed by the *East African Medical Journal* in 1923 and the *Journal of the Egyptian Public Health Association* in 1927. The 3 journals with the most recent date of first publication (2004) were located in Nigeria, Tanzania and South Africa.

Journal content and indexing

Almost all journals ($N = 57$) reported including original research articles, and 55 journals submitted these for peer review. Over half ($N = 35$) published articles mainly from authors in their own countries. Journals that did not include original research described their content as duplicate publication of international research of local relevance. Few journals ($N = 18$) in our sample were indexed in Medline, with 16 of these being English-language journals and 2 French-language. Fig. 3 shows the location of the editorial offices of the journals indexed in Medline. Ten journals were indexed in EMBASE, all of which were English-language publications. Six journals were indexed in both databases.

Discussion

This study identified over 150 African medical journals



Table II. Focus of journals described as having a 'specialist interest'

Specialist description	N
AIDS	2
Basic science	4
Blood transfusion	1
Cardiology	1
Child health	2
Dermatology	1
Infectious disease	1
Internal medicine	1
Mental health	4
Ophthalmology	1
Pharmacology	3
Public health	3
Reproductive health	2
Research	1
Urology	1
Naturopathy and traditional medicine	2
Gastroenterological surgery	1
Total	31

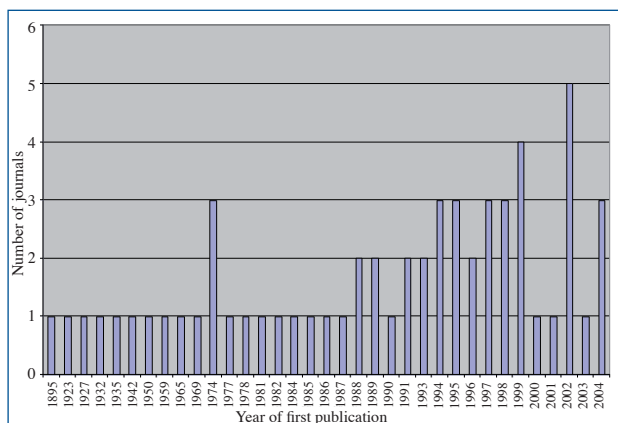


Fig. 2. Year of first publication of journal (N).

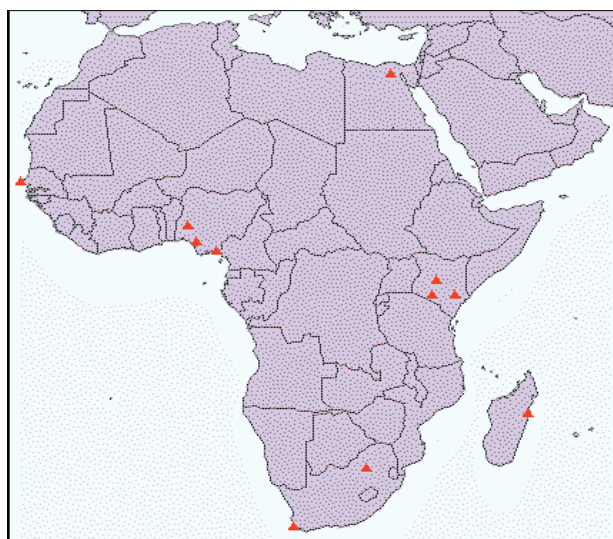


Fig. 3. Location of the editorial offices of journals indexed in Medline.

from multiple sources, and is likely to represent the most comprehensive list of current African medical journals to date. The diversity of country and journal topic within these journals is encouraging and suggests that researchers and editors are actively engaging in the publication of health care research in Africa.

The survey was limited by the low response rate (39%), hence results may not be a true reflection of the overall sample. The response rate was lower than that of the 2002 African editors survey conducted by TDR (68%),³ but almost identical to that achieved in the WAME survey (37%).¹ Good and colleagues,¹ who conducted the WAME survey, argued that survey research conducted at international level is extremely difficult because the target population is often not well-defined and language barriers can hamper the process. We believe that many of our questionnaires may not have reached their destination because of poor mail delivery systems and erratic power supply and internet connectivity in many countries. We were explicit about our aims in the covering letter, but on presentation of our preliminary results to the FAME conference in December 2005, some journal editors reported not completing the survey as they assumed the information they had supplied in the 2002 TDR survey was sufficient. Such misinterpretation may well have resulted in additional non-response.

The results of our survey confirm that African medical journals are poorly represented in the large electronic databases such as Medline and EMBASE. This is similar to previous research findings on Indian medical journals⁵ and suggests that most medical research published in African journals remains hidden from the wider research world. The implications of this so-called database bias for systematic reviews of randomised controlled trials have been well described,^{6,7} and can result in unnecessary duplication and use of resources for all study types. Most editors report including original research in their journals and almost all report using peer-review processes. However, it is not possible to determine the quality of the research, and indeed of the peer-review reports, in a survey such as this one. Issues surrounding the quality of research and regularity of publishing are often cited as the reason for non-inclusion of many journals in the larger databases, but to the best of our knowledge direct comparisons have not been undertaken to verify this.⁸ Regularity of publication and accessibility are important criteria for journal selection in databases such as Medline, and it is here that African journals will have to improve if they are to increase the likelihood of being indexed in Medline.

In 1990, the WHO attempted to address the lack of visibility of African medical research by establishing the African Index Medicus. After a 5-year period of inactivity the database has recently been relaunched (<http://indexmedicus.afro.who.int>) but is not yet up to date. The online resource, African Journals Online (www.ajol.com), established in 2000 provides free



access to tables of contents and some abstracts from many African journals, including medical journals. However, inclusion in the database is dependent on editors providing the posted information, and the search engine only allows for simple searches. Clearly there is a need for the wealth of African publications to be more accessible to the wider research community. To achieve this either current systems will need to be greatly improved or innovative alternative systems will need to be developed.

Our study confirms that medical and health care research is both taking place and being published in many journals across the African continent. Mapping the location of each journal using GIS software provides a snapshot view of the current status of African medical journal publication and can easily be updated, providing a useful evaluation tool for future monitoring of journal coverage. We plotted greater journal activity in Nigeria, Egypt and South Africa, but these countries are relatively rich in comparison to most other African countries and this finding is perhaps not surprising. However, we are greatly encouraged by the journal activity in poorer countries such as Mozambique, Madagascar and Tanzania. This activity and the establishment of so many new journals during the last decade is contributing to a culture of African health care research. Consideration must be given to how researchers, journal editors, information specialists and policy-makers can work together to achieve the publication of high-quality research in high-quality journals and to ensure ready access to this research across the continent and indeed the world. We

hope that the growth of FAME and studies such as this one will stimulate further discussion and assist in the identification of creative solutions to address the challenges we have identified.

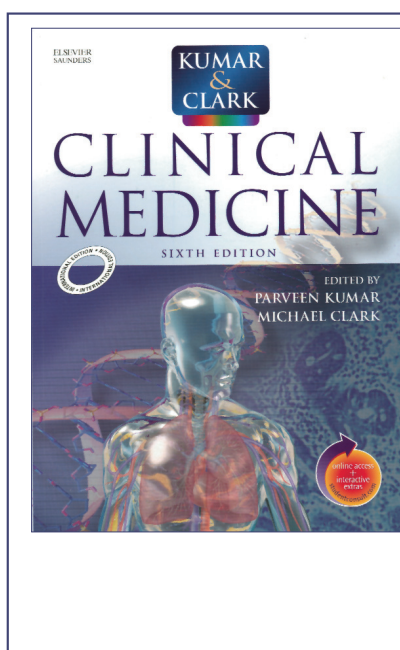
The authors welcome information on any current African medical journals. Please forward information to Edith Certain at email: certain@who.int

We would like to thank all the editors who completed the survey. We also thank Mike Clarke for his very useful comments on an earlier version of this article and his support of the survey. We are grateful to Pippa Smart and Neil Pakenham-Welsh from INASP for providing information on African Journals Online. Nandi Siegfried is grateful to the United Kingdom Cochrane Centre and Green College, Oxford University, for travel funding.

References

1. Good CD, Parente ST, Rennie D, Fletcher SW. A worldwide assessment of medical journal editors' practices and needs - results of a survey by the World Association of Medical Editors. *S Afr Med J* 1999; **89**: 397-401.
2. Certain E. Medical research in French-speaking Africa: unrecognized research. *Med Trop (Mars)* 2003; **63**: 627-631.
3. Certain E. Report of a TDR survey of African medical journal editors. In: UNDP/World Bank/WHO Special Programme for Research and Training in Tropical Diseases. Consultative Meeting and Workshop for Strengthening African Medical Journals: Geneva, 14-16 October 2002. Geneva: World Health Organization, 2003. (TDR/RCS/FAME/03.1): 19-44. http://www.who.int/tdr/publications/fame_meeting1.htm (last accessed 4 February 2006).
4. Haivas I, Schroter S, Waechter F, Smith R. Editors' declaration of their own conflicts of interest. *CMAJ* 2004; **171**: 475-476.
5. Sahni P, Reddy PP, Kiran R, Reddy KS, Pande GK, Nundy S. Indian medical journals. *Lancet* 1992; **339**: 1589-1591.
6. Egger M, Smith GD. Bias in location and selection of studies. *BMJ* 1998; **316**: 61-66.
7. Nieminen P, Isohanni M. Bias against European journals in medical publication Databases. *Lancet* 1999; **353**: 1592.
8. Gibbs W. Lost science of the third world. *Sci Am* 1995; **273**: 92-99.

Accepted 9 February 2006.



PRICE: R380.00
SAMA MEMBERS:
R360.00

TO ORDER CONTACT:

South African Medical Association
 Health & Medical Publishing Group
 1-2 Lonsdale Building, Gardener Way,
 Pinelands, 7405

Tel: (021) 530-6520/27 • Fax: (021) 531-4126
 email: books@samedical.org

