



## Little mental disorder research in general medical journals in low- and middle-income countries

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**To the Editor:** Research on mental disorders undertaken in low- and middle-income (LAMI) countries is rarely published in leading psychiatric journals published in high-income (HI) countries. An examination of the extent to which high-impact general medical journals provide an alternative forum for articles on mental disorders revealed that fewer of these articles are published in LAMI than HI countries.

There is increasing recognition of the global economic and human burden imposed by mental disorders.<sup>1</sup> This has resulted in a renewed appreciation of the importance of mental health research in both First-World countries and nations classified according to World Bank Criteria as LAMI countries. At the same time there is evidence that research on mental disorders undertaken in developing nations is rarely published in leading psychiatric journals.<sup>2</sup>

As part of an effort to correct the imbalance in the representation of mental health research from developed and developing nations, the World Health Organization (WHO) hosted a conference in 2003 entitled 'Mental Health Research in Developing Countries: Role of Scientific Journals'.<sup>3</sup> One of the recommendations made by the participating panel of mental health journal editors was that general medical journals in LAMI countries should encourage the publication of mental health-related articles.

We decided to determine the extent to which high-profile general medical journals were publishing articles on mental disorders. The question of whether the proportion of articles on mental disorders in general medical journals differed between LAMI and HI countries was also investigated.

### Methods

LAMI journals of international standing were identified through searching the general and internal medicine category of the Science Citation Index database. A comparative group of HI journals was arbitrarily defined as those publications with an ISI impact factor of 2 or more. An estimate of the proportion of the articles published in LAMI and HI journals that focused primarily on mental disorders was obtained through using the

mesh term 'mental disorders' as a filter in a PubMed search of all the articles published in the individual journals.

Publication trends over time were detected by means of splitting the retrieved articles into those published within as well as before the last decade. A logistical regression analysis was performed to detect differences in the publication of mental disorder-related articles between journal categories and time periods, and to determine whether publication ratio varied between journal categories as a function of time. All statistical tests were performed using the R statistical package (version 2.2.0),<sup>4</sup> and were 2-tailed with a significance level of  $p$  set to 0.05.

### Results

Publication counts for 21 high-impact and 12 LAMI journals were included in the analysis (Table I). HI journals published a significantly greater proportion of psychopathology articles than LAMI journals ( $z = 15.74, p < 0.05$ ). The ratio of such publications increased over time for both journal categories ( $z = 20.66, p < 0.05$ ), from 4.66% to 6.27% and from 2.16% to 3.29% for HI and LAMI journals, respectively. There was evidence of an interaction between journal category and time period ( $z = 2.31, p < 0.05$ ).

The mean impact factor was approximately 18 times higher for the HI than the LAMI journals (7.90 versus 0.43). The overall publication ratio among the LAMI journals was also significantly skewed, with psychopathology articles accounting for over 3% of all the articles published in only 3 of the 12 journals (*Croatian Medical Journal, South African Medical Journal, West Indian Medical Journal*).

### Discussion

This report provides evidence that articles on mental disorders are being published in small but increasing quantities in high-profile medical journals. LAMI medical journals publish a significantly smaller proportion of psychopathology articles than their counterparts in HI countries, despite a reduction in this difference over time. This is consistent with the low proportion of the total health budget that LAMI countries allocate to mental health issues.<sup>5</sup>

### Conclusion

LAMI countries should be encouraged to increase their research on psychiatric disorders and to publish their findings in regional and international medical journals. By publishing articles describing the nature and scope of psychopathology



**Table I. Summary statistics for HI and LAMI general medical journals**

Journals	Country	Impact factor*	Total†	Ratio (%)‡
<b>High-impact journals</b>				
<i>N Engl J Med</i>	USA	38.570	56 145	3.90
<i>JAMA</i>	USA	24.831	56 634	6.32
<i>Lancet</i>	England	21.173	112 598	4.86
<i>Ann Intern Med</i>	USA	13.114	23 944	3.82
<i>Annu Rev Med</i>	USA	11.2	1 833	7.31
<i>Arch Intern Med</i>	USA	7.508	15 847	4.71
<i>BMJ</i>	England	7.038	40 985	6.41
<i>Am J Med</i>	USA	4.179	18 227	3.12
<i>Mayo Clin Proc</i>	USA	3.746	7 975	2.98
<i>Medicine (Baltimore)</i>	USA	3.727	1 415	4.45
<i>Ann Med</i>	Finland	3.617	1 456	9.00
<i>J Intern Med</i>	England	3.590	2 851	3.26
<i>Am J Prev Med</i>	USA	3.188	2 288	4.28
<i>Curr Med Res Opin</i>	England	2.928	2 139	11.59
<i>J Gen Intern Med</i>	USA	2.821	2 929	8.40
<i>QJM-Int J Med</i>	England	2.580	1 485	5.32
<i>Eur J Clin Invest</i>	Germany	2.530	3 843	2.13
<i>Prev Med</i>	USA	2.327	3 449	6.23
<i>J Pain Symptom Manage</i>	USA	2.187	2 042	8.28
<i>Br Med Bull</i>	England	2.165	2 966	5.50
<i>Med J Aust</i>	Australia	2.000	33 978	6.31
<b>LAMI journals</b>				
<i>S Afr Med J</i>	South Africa	1.107	23 504	3.75
<i>Croat Med J</i>	Croatia	0.690	901	6.55
<i>Natl Med J India</i>	India	0.626	1 537	2.47
<i>Indian J Med Res</i>	India	0.600	9 443	1.16
<i>Chin Med J (Peking)</i>	China	0.459	7 540	1.31
<i>J Formos Med Assoc</i>	Taiwan	0.453	2 841	1.94
<i>Medicina (B Aires)</i>	Argentina	0.324	6 002	1.22
<i>Rev Invest Clin</i>	Mexico	0.277	2 785	2.76
<i>Rev Med Chil</i>	Chile	0.273	9 059	2.97
<i>West Indian Med J</i>	India	0.209	2 434	3.41
<i>Ethiop Med J</i>	Ethiopia	0.174	1 071	1.40
<i>Ter Arkh</i>	Russia	0.100	16 944	1.58

\* ISI impact factor.  
 † Total number of articles indexed by PubMed as of 27 September 2005.  
 ‡ Percentage of total number of articles indexed by PubMed under 'mental disorders'.

within their regions, LAMI medical journals can make a unique contribution to the international mental health database.

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