

## Contribution of low- and middle-income countries to research published in leading general psychiatry journals, 2002–2004

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**Summary** We aimed to describe the contribution of low- and middle-income (LAMI) countries to leading general psychiatric journals. We reviewed original research published over a 3-year period (2002–2004) in the six highest-impact general psychiatry journals and contacted editorial offices to gather data on country of origin of submitted and accepted articles. Only 3.7% of published research emerges from these less affluent countries, which account for over 80% of the global population. Compared with the findings of a similar review of the period 1996–1998, there has been little change. The three European journals had a higher representation than the three American journals. The proportion of psychiatrists in a country was associated with that country's research output. As much as 50% of the research from LAMI countries is led by authors from high-income countries. The proportion of submissions from LAMI countries was very low, and articles from them were more frequently rejected. Strengthening the research capacity of these countries and reviewing the editorial policies of leading journals can help increase the international representation of LAMI countries in psychiatric research.

**Declaration of interest** V.P. serves on the International Editorial Board of the *British Journal of Psychiatry* and the Editorial Advisory Board of *World Psychiatry*.

The enormous global gap in the research output between high-income countries and low- and middle-income countries (Global Forum for Health Research, 2000) not only stunts the development of evidence-based health policies and practice in the poorer countries, but also limits the growth of psychiatry and public health (Canadian Medical Association Journal, 2004; Saxena *et al*, 2006). A review of psychiatric research published in six leading psychiatric journals between 1996 and 1998 (Patel & Sumathipala, 2001) showed that countries outside the Western cultural world contributed only about 6% of the published literature and the proportion of publications from low- and middle-income countries was even lower (3.2%). We assessed the contribution of the latter countries to high-impact general psychiatric journals between 2002 and 2004, with the aim of answering the following questions. Has there been an increase in the proportion of articles published in these journals since the earlier review? Which countries account for this research? Is there a relationship between the output and the country's mental health resources? We also sought to determine the proportion of submissions and rejections of papers from low- and middle-income countries from the selected journals.

## METHOD

We surveyed the six highest-impact journals, as listed in the ISI Web of Science Database, which covered general psychiatry: *Archives of General Psychiatry*, *American Journal of Psychiatry*, *Journal of Clinical Psychiatry*, *British Journal of Psychiatry*, *Acta Psychiatrica Scandinavica* and *Psychological Medicine*. Only research articles (not including case reports or reviews) were included and supplements were not counted. The period of search was January 2002 to December 2004. We searched all research articles and identified potential candidate articles, defined as an article containing original data collected from one or more low- or middle-income countries, as defined by the World Bank criteria. Multi-national studies were counted if at least one low- or middle-income country was involved in data collection. We also wrote to the editors of the journals requesting data on the country of origin of submissions and accepted papers during the search period.

## RESULTS

Our search identified a total of 2624 research articles; less than 4% ( $n=98$ ) were from low- and middle-income countries (Table 1). We found that 111 countries had not submitted even one article.

The three European journals were significantly more likely to publish articles from low- and middle-income countries than the three American journals (OR=2.29, 95% CI 1.5–3.5,  $P<0.001$ ). Two journals (the *British Journal of Psychiatry* and *Acta Psychiatrica Scandinavica*) accounted for nearly half the publications from such countries. When compared with

**Table 1** Papers from low- and middle-income (LAMI) countries published by six leading psychiatric journals

Journal	Research articles published in 2002–2004 <sup>1</sup> n	Proportion of articles from LAMI countries in 2002–2004 % (n)	Proportion of articles from LAMI countries in 1996–1998 <sup>2</sup> % (n/N)
<i>Archives of General Psychiatry</i>	319	3.1 (10)	0.8 (3/376)
<i>American Journal of Psychiatry</i>	782	2.2 (17)	1.2 (10/849)
<i>Journal of Clinical Psychiatry</i>	512	2.7 (14)	NA <sup>3</sup>
<i>British Journal of Psychiatry</i>	343	7.0 (24)	3.4 (22/637)
<i>Acta Psychiatrica Scandinavica</i>	324	6.8 (22)	7.4 (35/473)
<i>Psychological Medicine</i>	344	3.2 (11)	4.4 (18/404)
<b>Total</b>	<b>2624</b>	<b>3.7 (98)</b>	<b>3.2 (88/2739)</b>

1. Original research articles only.

2. Includes reviews, editorials and case reports (Patel & Sumathipala, 2001).

3. Journal not included in this review.

the findings of the earlier survey (Patel & Sumathipala, 2001) there was no significant increase in the proportion of papers from these countries, although two journals (*British Journal of Psychiatry*, OR=2.10,  $P=0.02$ ; *Archives of General Psychiatry*, OR=4.02,  $P=0.05$ ) had made a significant increase. A substantial proportion of articles (24.5%) were reports of multinational studies. The first author for half of all articles was based in a high-income country. Of the five leading low- and middle-income countries contributing to research, only one (India) was among low-income countries; the other leading countries were Turkey, Brazil, China and South Africa. There was a moderate association between the proportion of psychiatrists in the country and the total number of research papers from that country (Spearman's  $\rho=0.3$ ,  $P=0.002$ ).

Only two journals (the *American Journal of Psychiatry* and the *British Journal of Psychiatry*) provided information regarding the national origin of submitted and accepted papers. All submissions, including editorials and letters, were counted. The classification of countries was based on the address of the corresponding author. Of the total 4044 submissions to the *American Journal of Psychiatry* between October 2003 and early 2005, only 188 (4.4%) were from a low- or middle-income country; articles from high-income countries were more likely to be accepted (OR=2.6, 95% CI 1.4–4.8). Of the 1369 articles submitted to the *British Journal of Psychiatry* during the years 2002 and 2003, only 86 (6.3%) were from a low- or middle-income country, articles from high-income countries were more likely to be accepted (OR=2.1, 95% CI 1.1–3.7).

## DISCUSSION

Only 3.7% of the published research in six high-impact general psychiatric journals emerges from low- and middle-income countries, which account for over 80% of the global population. *Acta Psychiatrica Scandinavica* and the *British Journal of Psychiatry* have the highest international representation; the three American journals have the lowest. Only a few of these countries, mostly the higher middle-income countries, contribute to the literature. The proportion of psychiatrists in each country has a moderate influence on that country's research output. As much as half the research in low- to middle-income countries is led by authors from high-income countries. The proportion of submissions from

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low- to middle-income countries was very low, and articles from such countries were more likely to be rejected. Our findings echo those of a recent review of all ISI journals over a 10-year period which reported that 6% of articles were from low- and middle-income countries (Saxena *et al*, 2006). However, we note that at least two journals showed an increase in the proportion of articles published from these countries when compared with a similar review carried out a few years earlier.

Our review suggests several reasons for the very low representation of published research from low- and middle-income countries. First, the overall proportion of submissions is low; apart from the possibility that authors from these countries might be choosing local journals for their research, this finding suggests that the actual research output – and thus research capacity – in these countries, is low. In part, this lack of resources is associated with a lack of psychiatrists in these countries. Second, articles from these countries are more likely to be rejected. Two reasons might be considered: the quality of research, and editorial and reviewer attitudes towards articles from such countries (Tyrer, 2005). The fact that there are large variations between journals does suggest editorial and reviewer behaviour as a plausible reason. One explanation for the large proportion of first authors being from high-income countries in reports of research in low- and middle-income countries may be the greater familiarity of these authors with the publication process of journals and the recognition of their high-income origins by reviewers.

The World Health Organization and the editors of scientific journals issued a consensus statement expressing concern about the wide gap in research evidence, and emphasised the role of scientific journals in promoting research from low- and middle-income countries (World Health Organization & Joint Editors, 2004). We believe that journals must act on their commitment to reduce the inequity in the international representation of research and that they can do so without compromising their scientific standards. Journals should monitor

the country of origin of all submissions and accepted articles, as is currently done by the *BMJ*. The wider question of strengthening research capacity in poorer countries needs urgent action. Low- and middle-income countries with a good research output should be encouraged to take on a leading role in such capacity building.

Given the lack of improvement in international representation, despite the growing awareness of its need, we recommend high-impact journals with relatively strong international representations (such as *Acta Psychiatrica Scandinavica* and the *British Journal of Psychiatry*) and explicitly international journals (such as *World Psychiatry*, the official journal of the World Psychiatric Association) to researchers and advocates of international mental health. Moves to strengthen the quality of local journals in low- and middle-income countries to ensure they are indexed and thus widely accessible should be encouraged. We also genuinely hope that other journals will be able to be active partners in the global effort to reduce the inequity in the international contribution to psychiatric research.

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## REFERENCES

- Canadian Medical Association Journal (2004)** Western medical journals and the 10/90 problem. *Canadian Medical Association Journal*, **170**, 5.
- Global Forum for Health Research (2000)** *Helping Correct the 10/90 Gap*. Global Forum for Health Research.
- Patel, V. & Sumathipala, A. (2001)** International representation in psychiatric literature: survey of six leading journals. *British Journal of Psychiatry*, **178**, 406–409.
- Saxena, S., Paraje, G., Sharan, P., et al (2006)** The 10/90 divide in mental health research: trends over a 10-year period. *British Journal of Psychiatry*, **188**, 81–82.
- Tyrer, P. (2005)** Combating editorial racism in psychiatric publications. *British Journal of Psychiatry*, **186**, 1–3.
- World Health Organization & Joint Editors (2004)** *Galvanizing Mental Health Research in Low- and Middle-Income Countries: Role of Scientific Journals*. [http://www.who.int/mental\\_health/evidence/en/final\\_joint\\_statement.pdf](http://www.who.int/mental_health/evidence/en/final_joint_statement.pdf)