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LETTERS

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The relationship between research publications in two leading geriatric psychiatry journals and elderly population size, socio-economic status and markers of mental health care

The proportion of the elderly (aged 65+ years) in the general population is increasing in most countries (Shah and MacKenzie, 2007). The two most common mental disorders in the elderly are dementia and depression. The number of people affected by them will increase worldwide (Shah, 1992a; 1992b) because the prevalence of dementia doubles every 5.1 years after the age of 60 (Jorm *et al.*, 1987; Hofman *et al.*, 1991) and prevalence rates of up to 15% have been reported for depression in the elderly (Shah, 1992a; 1992b). The proportion of elderly in the general population is increasing most rapidly in low and middle income (LMI) countries (Jacob and Ganguli, 2007; Shah and MacKenzie, 2007). High quality, locally acquired research data are needed for planning geriatric psychiatric services in such countries (Jacob and Ganguli, 2007).

There is a paucity of published research on dementia from LMI countries (10/66 Dementia Research Group, 2000a; 2000b). Research papers from LMI countries, compared to high income countries, have lower rates of submission to and acceptance by leading psychiatric journals (Patel and Sumanthipala, 2001; Saxena *et al.*, 2006; Patel and Kim, 2007; Konradsen and Munk-Jorgensen, 2007). Low submission rates for research papers in geriatric psychiatry from LMI countries may be due to paucity of research because the elderly constitute a comparatively small proportion of the total population in such countries (Jacob and Ganguli, 2007). Additional reasons for paucity of research in LMI countries include limited research capacity, shortage of a critical mass of researchers, and shortage of mental health professionals who also have significant service commitments (Patel, 2007; Jacob and Ganguli, 2007). Development of good research capacity requires support from a robust academic and mental health service infrastructure (Patel, 2007). In turn, the provision of mental health services is contingent upon satisfactory funding and the latter is usually informed and determined by national mental health policy. Therefore, a cross-national study examining the relationship between the number of research publications in two leading geriatric psychiatry journals and the elderly population size, socio-economic status and markers of mental health care provision was undertaken.

All countries registered with the World Health Organization (WHO) were included in this study (www.who.int/countries/en/) (N = 192). The country in which the research was carried out was ascertained by manually reviewing all published papers of original research in two leading geriatric psychiatry journals: *International Psychogeriatrics* (IP) and *International Journal of Geriatric Psychiatry* (IJGP). Only original research papers were considered – editorials, review articles, commentaries, abstracts, letters and book reviews were excluded. Data were collected for a five-year period, 2002–2006. If the research was carried out in more than one country then it was counted for each country involved in the research.

Data on the elderly (65+ years) population size and the total population size were ascertained from the WHO (www.who.int/whois/database/mort/table1.cfm). This allowed calculation of the proportion of elderly in the total population. The WHO (www.who.int/countries/en/) provided data on gross national domestic product (GDP), the proportion of GDP spent on health and per capita expenditure on health for the year 2002. Data on markers of mental health service provision listed in Table S1 (available as supplementary material attached to the electronic version of this letter at www.journals.cambridge.org/jid_IPG) were ascertained from the *Mental Health Atlas 2005* published by the WHO (www.who.int/mental_health/evidence/ mhatlas05/en/index.html).

The relationship between the total number of research publications and the elderly population size, the proportion of elderly in the total population, the GDP and markers of mental health service provision, which are continuous variables, was examined using Spearman's correlation coefficient (ρ). The relationship between the total number of research publications and markers of mental health service provision, which were categorical variables, was examined using the Mann-Whitney U Test. The analyses were conducted for each of the two journals separately and in combination.

Research carried out in more than one country was counted for each country involved in the research. Using this approach the total number of published research papers was 1011. The mean (standard deviation) number of research publications per country was 5.2 (23.9). Findings for both journals together are described because findings for each of them were similar.

Table S2 (available as supplementary material attached to the electronic version of this letter at www.journals.cambridge.org/jid_IPG) shows the findings of the analyses. The total number of research publications was significantly positively correlated with the elderly population size, the proportion of elderly in the general population, GDP, the proportion of GDP spent on health, per capita expenditure on health, the percentage of the total health budget spent on mental health, and the total number of beds, psychiatrists, psychiatric nurses, psychologists and social workers per 10,000 population. The total number of research publications was higher in countries with a national mental health policy, a substance abuse policy, mental health legislation, mental health as part of the primary care system, availability of community care for mental health, involvement of non-governmental organizations in mental health care, and availability of special programs for the elderly, children and refugees. The total number of research publications was lower in countries with a national therapeutic drug policy and essential list of drugs; the GDP was higher in countries with a national therapeutic drug policy and essential list of drugs (Mann-Whitney U Test, $Z = -3.7$, $p < 0.00001$).

The positive correlation between the total number of research publications and the proportion of elderly in the population is consistent with the observation that there is a paucity of research in LMI countries because the elderly constitute a comparatively small proportion of the total population (Jacob and Ganguli, 2007). The positive correlation between the number of research publications and the GDP confirmed previous reports of a paucity of publications from LMI countries in leading psychiatric journals (Patel and Sumanthipala, 2001; Saxena *et al.*, 2006; Patel and Kim, 2007; Konradsen and Munk-Jorgensen, 2007). This may have several sequential explanations. First, satisfactory funding for developing a robust mental health service infrastructure may be informed and determined by national policy on mental health, and LMI countries may not have national mental health policies (Saxena *et al.*, 2007). The positive association between the total number of research publications and the presence of a national mental policy, substance abuse policy and mental health legislation supports this hypothesis. Second, provision of robust mental health service infrastructure is contingent upon satisfactory funding, and such funding may be poor in LMI countries (Jacob *et al.*, 2007). The positive association between the total number of research publications and the proportion of GDP spent on health, per capita health expenditure and the percentage of the total health budget spent on mental health is consistent with this hypothesis. Third, development of satisfactory research capacity requires support from a robust academic and mental health service infrastructure, and this may be poor in LMI countries (Patel, 2007). The positive association between the total number of research publications and the total number of psychiatric beds per 10,000 population, mental health as part of the primary care system, the availability of community care for mental health, the involvement of non-governmental agencies in mental health care, and the availability of specialist programs for the elderly, children and refugees is consistent with this hypothesis. Fourth, according to some researchers, paucity of research in LMI countries stems from limited research capacity, shortage of a critical mass of researchers, and shortage of mental health professionals with significant service commitments (Patel, 2007; Jacob and Ganguli, 2007). The positive association between the total number of research publications and the number of psychiatrists, psychiatric nurses, psychologists and social workers per 10,000 population supports this hypothesis.

It is also possible that research conducted in LMI countries is not submitted to specialist geriatric psychiatry journals because researchers from LMI countries may choose not to submit their work for publication. In addition, studies from LMI countries may be published in more generic psychiatric journals, in journals of other disciplines (e.g. psychology and sociology), in the "gray" literature (e.g. reports for organizations which commission research) and in journals in the country of origin or in their geographical region.

Submitted papers may not be accepted for several reasons. First, reviewers for geriatric psychiatry journals may provide unfavorable assessments because of possible lower quality of submissions from LMI countries. Patel (2007) suggested that submissions from LMI countries to leading psychiatric journals may be of lower quality because the citation statistics were similar for accepted submissions from LMI and high-income countries, despite high rejection rates for submissions from LMI countries (Konradsen and Munk-Jorgensen, 2007). However, there is no evidence of poor quality submissions from LMI countries to geriatric psychiatry journals (Jacob and Ganguli, 2007). Second, editorial policies of geriatric psychiatry journals may not favor publications from LMI countries. However, it should be stressed that there is no evidence of reviewer bias or unfavorable editorial policies. Third, there may be a paucity of reviewers for geriatric psychiatry journals from LMI countries. However, it is encouraging that acceptance rates of submissions from LMI countries have recently increased in at least one leading psychiatric journal

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(Konradsen and Munk-Jorgensen, 2007) and an entire recent issue of IP (volume 19, issue 4) was dedicated to research papers from LMI countries.

What can be done to promote geriatric psychiatry research in LMI countries and subsequent submission and acceptance for publication in geriatric psychiatry journals? Leading international organizations like the WHO, the International Psychogeriatric Association (IPA) and Alzheimer's Disease International (ADI) play an important role in raising awareness among national policy makers in LMI countries about the rapidly increasing elderly population size in these countries and the importance of high quality, locally acquired research data in planning geriatric psychiatry services. For example, the IPA (Abelskov and Shah, 2001) and ADI (10/66 Dementia Research Group, 2000a; 2000b) have several ongoing initiatives to facilitate this ambition. Patel (2007) described a number of strategies and initiatives to increase research capacity at individual and institutional level in LMI countries, including dedicated funding for building research capacity, creating partnerships between institutions with good research capacity and institutions in LMI countries without good research capacity, and commitment of governments and academic institutions to build research capacity. Specialist geriatric psychiatry journals can also facilitate high quality submissions by increasing the number of reviewers from LMI countries and by offering an advisory service on improving the quality of submissions. IP has an initiative to help researchers improve the quality of their submissions, but the uptake rate for this service is unclear.

Caution should be exercised in interpreting the current findings because only two geriatric psychiatry journals were examined and therefore the findings cannot be extrapolated to other geriatric psychiatry journals; and only one researcher examined the two journals.

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Should research focus specifically on elderly suicide rates in cross-national ecological studies designed to identify distil risk factors?

Suicide rates increase with aging in many countries. In a recent study of 62 developed and developing countries, suicide rates increased with age for males and females in 25 and 27 countries respectively, and in both sexes in 17 countries (Shah, 2007). Suicide rates increased with age in 47 of the 49 medium- and high-income countries (Keimo, 2004). Comprehensive understanding of the substantial worldwide variation in population patterns of suicide may be critical for developing