



Brain drain and health professionals

Tikki Pang, Mary Ann Lansang and Andy Haines

BMJ 2002;324:499-500
doi:10.1136/bmj.324.7336.499

Updated information and services can be found at:
<http://bmj.com/cgi/content/full/324/7336/499>

These include:

References

This article cites 5 articles, 1 of which can be accessed free at:
<http://bmj.com/cgi/content/full/324/7336/499#BIBL>

9 online articles that cite this article can be accessed at:
<http://bmj.com/cgi/content/full/324/7336/499#otherarticles>

Rapid responses

20 rapid responses have been posted to this article, which you can access for free at:
<http://bmj.com/cgi/content/full/324/7336/499#responses>

You can respond to this article at:
<http://bmj.com/cgi/eletter-submit/324/7336/499>

Email alerting service

Receive free email alerts when new articles cite this article - sign up in the box at the top right corner of the article

Topic collections

Articles on similar topics can be found in the following collections

[Medical Careers: others](#) (354 articles)
[Other Public Health](#) (2616 articles)

Notes

To order reprints of this article go to:
<http://www.bmjournals.com/cgi/reprintform>

To subscribe to *BMJ* go to:
<http://bmj.bmjournals.com/subscriptions/subscribe.shtml>

orthodox clinicians to justify referral to homoeopathic services. The use of randomised controlled trials to test the legitimacy of homoeopathic treatments is the latest chapter in an ideological and scientific struggle between homoeopathy and orthodox medicine going back to the 19th century.⁵ The fervour of this struggle is reflected in the 58 electronic responses to another trial of homoeopathy reported in the *BMJ*.⁶

Are the results of placebo controlled trials in homoeopathy convincing? Linde et al's meta-analysis of 89 trials suggests an effect of homoeopathic medicines greater than placebo.⁷ The aggregated effect size of homoeopathic treatments, when possible publication bias is taken into account or only high quality trials are included, is modest.⁸ How seriously clinicians take these findings depends on their prior beliefs.⁹ If you cannot conceive of highly diluted solutions with undetectable drug concentrations having a biological effect, then no matter how well designed the trial or robust the meta-analysis, a positive result will not change your view. If you are less concerned about the integrity of our model of the universe or are intrigued by controversial laboratory work showing the activity of highly diluted histamine solutions¹⁰ than the overall positive result of the trials makes it easier to take homoeopathy seriously.

Despite homoeopathy's popularity with patients, orthodox medicine has had the upper hand in terms of institutional support, research funding, and strong evidence of effectiveness. Nevertheless, the flurry of trials in the past 20 years has changed the terms of the debate. At the very least, those who consider homoeopathy to be absurd have had to muster different philosophical and methodological arguments to defend their position. Randomised controlled trials may be efficient arbiters of clinical effectiveness, but they are not particularly good for resolving philosophical disputes.

Current trials are of a high methodological standard and, if positive, may sway agnostics. Opponents of homoeopathy have made it clear that no number of well designed trials showing an effect greater than placebo will overcome their prior belief that homoeopathy cannot work. Research funding is a scarce resource. Unlike other commentators in this journal,¹¹ we believe that new trials of homoeopathic medicines against placebo are no longer a research priority. The question whether ultramolecular dilutions can have any measurable physical effect, a scientific rather than philosophical

question, is best tackled with laboratory methods. However, there is still a role for pragmatic trials comparing the effect and cost effectiveness of orthodox and homoeopathic treatments. Within the homoeopathic medical community and other groups that use homoeopathy, such as anthroposophical physicians,¹² there is a call for outcome studies to evaluate the individualised treatment decisions that are at the heart of their clinical method and compare outcomes to orthodox treatment.¹³

Gene Feder *professor of primary care research and development*

Department of General Practice and Primary Care, Queen Mary's School of Medicine and Dentistry, London E1 4NS

Tessa Katz *general practitioner*

Lower Clapton Group Practice, London E5 0PD

GF was paid a consultancy fee by Weleda, a pharmaceutical company that manufactures homoeopathic medicines, to develop prescribing guidelines. TK received a grant from the Blackie Foundation to pilot a randomised controlled trial of homoeopathic treatment.

- 1 Linde K, Melchart D. Randomized controlled trials of individualized homoeopathy: a state-of-the-art review. *J Altern Complement Med* 1998;4:371-88.
- 2 Seymour J. As if by magic. *New Scientist* 2001;170:46-9.
- 3 Lewith GT, Watkins AD, Hyland ME, Shaw S, Broomfield JA, Dolan G, et al. Use of ultramolecular potencies of allergen to treat asthmatic people allergic to house dust mite: double blind randomised controlled clinical trial. *BMJ* 2002;324:520-3.
- 4 Reilly D, Taylor MA, Beattie NG, Campbell JH, McSharry C, Aitchison TC, et al. Is evidence for homoeopathy reproducible? *Lancet* 1994;344:1601-6.
- 5 Weatherall MW. Making medicine scientific: empiricism, rationality, and quackery in mid-Victorian Britain. *Soc Hist Med* 1996;9:175-94.
- 6 Taylor MA, Reilly D, Llewellyn-Jones RH, McSharry C, Aitchison TC. Randomised controlled trial of homoeopathy versus placebo in perennial allergic rhinitis with overview of four trial series. *BMJ* 2000;321:471-6.
- 7 Linde K, Clausius N, Ramirez G, Melchart D, Eitel F, Hedges LV, et al. Are the clinical effects of homoeopathy placebo effects? A meta-analysis of placebo-controlled trials. *Lancet* 1997;350:834-43.
- 8 Linde K, Scholz M, Ramirez G, Clausius N, Melchart D, Jonas WB. Impact of study quality on outcome in placebo-controlled trials of homoeopathy. *J Clin Epidemiol* 1999;52:631-6.
- 9 Vandenbroucke JP, de Graen AJ. Alternative medicine: a "mirror image" for scientific reasoning in conventional medicine. *Ann Intern Med* 2001;135:507-13.
- 10 Brown V, Ennis M. Flow-cytometric analysis of basophil activation: inhibition by histamine at conventional and homoeopathic concentrations. *Inflamm Res* 2001;50 (suppl 2):S47-8.
- 11 Lancaster T, Vickers A. Larger trials needed. *BMJ* 2000;321:476.
- 12 Evans M, Rodger I. *Healing for body, soul, spirit: an introduction to anthroposophical medicine*. Edinburgh: Floris, 2000.
- 13 Riley D, Fischer M, Singh B, Haidvogel M, Heger M. Homeopathy and conventional medicine: an outcomes study comparing effectiveness in a primary care setting. *J Altern Complement Med* 2001;7:149-59.

Brain drain and health professionals

A global problem needs global solutions

Migration of medical professionals from developing countries has become a major concern. This brain drain worsens the already depleted healthcare resources in poor countries and widens the gap in health inequities worldwide. It is time that international organisations collaborated to protect the value of this "intellectual property": where medical professionals cannot be dissuaded from moving, the country that trained them should at least gain from their movement.

In Africa alone, where health needs and problems are greatest, around 23 000 qualified academic professionals emigrate annually.¹ Information from South African medical schools suggests that a third to a half of its graduates emigrate to the developed world.² The loss of nurses has been even more extreme—for example, more than 150 000 Filipino nurses³ and 18 000 Zimbabwean nurses⁴ work abroad. A recent report from the United Kingdom estimated that 31% of its doctors and 13% of its nurses are born overseas; in

London the figures are 23% and 47% respectively.⁵ These reported figures are likely to be underestimates as many migrate unofficially.

The cost implications are significant. With 600 of its medical graduates registered in New Zealand, the financial cost to South Africa was estimated at \$37m.⁶ The United Nations Commission for Trade and Development has estimated that each migrating African professional represents a loss of \$184 000 to Africa.⁷ Paradoxically, Africa spends \$4bn a year on the salaries of 100 000 foreign experts.⁸ In an example of brain drain within the country, Kenya estimates that only 600 doctors work in public hospitals out of more than 5000 registered⁹; the rest have moved abroad or are working in the private sector. "Brain waste" also occurs when health workers end up working outside the health sector or as unskilled labour in the country they move to.

Some benefits may also result for the exporting country. These include substantial financial remittances from expatriates, improved training, and long term professional networks. The adverse effects, however, are likely to predominate.

What factors influence medical professionals to emigrate? Key reasons include poor remuneration, bad working conditions, an oppressive political climate, persecution of intellectuals, and discrimination. Researchers cite lack of funding, poor facilities, limited career structures, and poor intellectual stimulation as important reasons for dissatisfaction. Other key reasons for emigrating are personal ones. These include security, the threat of violence,¹⁰ and the wish to provide a good education for their children.

Some countries which have shown the foresight and commitment to improve domestic conditions have succeeded in effecting a brain gain by attracting back medical professionals. Thailand and Ireland have reverse brain drain programmes offering generous research funding and monetary incentives as well as services and assistance. Developing countries need to address the structural, political, and economic problems that lead to the brain drain.

Possible solutions include demanding compensation from departing professionals; delaying their departure through compulsory service; increasing salaries in the public health sector; permitting health professionals in the public sector to do some private practice; providing educational benefits for their children; and training paramedics who can fulfil many of the roles of doctors but whose qualifications are not recognised outside the country. They must aim to provide a stimulating environment for professional growth with adequate funding, facilities, and a vibrant intellectual community.

Funding agencies should put more resources into improving the conditions and training for health care professionals and researchers in low income countries. Importantly, when such training is provided abroad it should be relevant and applicable to the problems of the country of origin so that the difficulties and frustrations experienced by those returning to a poorer environment are minimised.

On their part, developed countries should think of the impact of brain drain on health care in poorer countries and consider reimbursing these countries for the cost of training the health professionals they import. They need bilateral agreements with these countries and a recruiting process that would minimise

the adverse effects on the health care of the exporting countries. The recently published guidelines by the UK Department of Health¹¹ address the ethical issues involved in the international recruitment of nurses and doctors. They recognise that old practices of recruitment without regard to the negative impacts in the country of origin are no longer acceptable. Clearly, we need better evidence on the extent of the problem of brain drain, its impact on both countries, and the effectiveness of measures to deal with it.

What part should international organisations play, given the global nature of the brain drain? Just as intellectual property rights need to be discussed by developed and developing countries together, so also should the preservation of the intellectual property of a nation, embodied in its health professionals, be addressed by international organisations. The World Health Organization could convene a forum of governments and international organisations such as the International Organization for Migration, the United Nations Educational, Scientific, and Cultural Organization, the United Nations Development Programme, the World Bank, the World Medical Association, and the Council of International Organizations of Medical Societies. They could agree on a declaration and an international code of ethical guidelines,¹² keeping in mind the harm that migration of medical professionals may cause. Currently the office of the Pan American Health Organization is working closely with interested stakeholders and member countries on a programme of managed migration of nurses in the Caribbean, traditionally a major source for recruiters. A global perspective, agreed ethical principles between countries, and a systematic approach using the convening power of international organizations should be the way to address the problem of brain drain.

Tikki Pang *director*

Research Policy and Cooperation, World Health Organization, Geneva, Switzerland

Mary Ann Lansang *executive director*

INCLEN Trust, Manila, Philippines

Andy Haines *dean*

London School of Hygiene and Tropical Medicine, London WC1E 7HT

- 1 Brain drain costly, African report says. *Int Herald Trib* 2001;18 Oct.
- 2 Weiner R, Mitchell G, Price M. Wits medical graduates: where are they now?. *S Afr J Sci* 1998;94:59-63.
- 3 Corcega T, Lorenzo M, Yabes J, sde la Merced B, Vales K. Nurse supply and demand in the Philippines. *The UP Manila*, 2000;5:1-8.
- 4 Mangwende B. Health sector records massive brain drain. *Daily News [Zimbabwe]* 10 April 2001
- 5 Glover S, Gott C, Loizillon A, Portes J, Price R, Spencer S, et al. *Migration: an economic and social analysis*. London: Home Office, 2001.
- 6 Medical migration and inequity of health care. *Lancet* 2000;356:177.
- 7 Oyowe A. Brain drain: Colossal loss of investment for developing countries. *The Courier ACP-EU* 1996;159:59-60.
- 8 Seepe S. The brain drain will continue unabated. *Mail and Guardian (Johannesburg)* 2001;30 Mar.
- 9 Siringi S. Kenya government promises to increase doctors' salaries to curb brain drain. *Lancet* 2001;358:306.
- 10 Amore LGC. My part in the brain drain. *BMJ* 2000;321:841.
- 11 Department of Health. *Code of practice for international recruitment*. London: Department of Health, 2001.
- 12 Bundred P, Levitt C. Medical migration: who are the real losers?. *Lancet* 2000;356:245-6.

We ask all editorial writers to sign a declaration of competing interests (bmj.com/guides/confli.shtml#aut). We print the interests only when there are some. When none are shown, the authors have ticked the "None declared" box.