

Published in final edited form as:

Rev Saude Publica. 2010 February ; 44(1): 185–189.

“Exporting Failure”: Why Research from Rich Countries may not Benefit the Developing World

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Keywords

Research; Developing Countries; Developed Countries; Health Transition; Evidence-Based Practice; Evidence-Based Medicine

Introduction

The ‘10/90 gap’ was first highlighted by the Global Forum for Health Research. It refers to the finding that 90 per cent of global medical research expenditure is targeted at problems affecting only 10 per cent of the world’s population. Applying research results from the rich world to the problems of the poor could be a convenient, potentially easy, tempting solution to this gap. In this essay, we argue that such an approach runs the risk of exporting failure. Health interventions that are shown to be effective in the specific context of an industrialized setting in the West will not necessarily work in the developing world.[1, 2]

Problems with randomised controlled trials

Randomised controlled trials are considered the gold standard in assessing health interventions, yet they generally only investigate one intervention at a time.[3, 4] As we shift from an era of classical chronic disease or risk factor epidemiology to one of ‘eco-epidemiology’,[5] where the focus is on prevention of disease through governance and fiscal and environmental policies rather than on simplistic notions of individual lifestyle modification, different approaches to research are needed. As Schwartz and Carpenter[6] have pointed out, focusing on individual level determinants of health while ignoring more important macro-level determinants is tantamount to obtaining the right answer to the wrong question.

A further limitation of randomised trials is that their results are highly dependent upon their context, which affects the appropriateness, interpretation, and generalisability of the study. [7] Many randomised trials study highly selected groups of people, which means that the results may not be applicable to the broader population, resulting in a conflict between proof of concept and generalisability.[8] Trials often fail to take into account whether the intervention, if found to be effective, would be affordable.

Problems with systematic reviews

Systematic reviews are another tool to evaluate the quality of clinical evidence about a health intervention. Research output derived from similar interventions or studies with similar outcomes are evaluated in aggregation to assess if, pooled together, data show more consistent results than individual studies. Systematic reviews are a powerful tool in that they maximise the data and evidence available, thus reaching conclusions based on stronger data quality and quantity.

However, systematic reviews in our view also suffer from similar contextual problems as trials. Most of the studies that are included in such reviews herald from specific settings within particular contexts, and those contexts are often developed country settings. Thus, the findings of systematic reviews may not always be applicable or relevant to other settings.[9] As Paul Chinnock and colleagues have stated “systematic reviews have yet to achieve their potential as a resource for practitioners in developing countries”.[10]

Enabling research practices and standards that enhance the application of research findings in the developing world

Given these limitations of randomised controlled trials and systematic reviews, can the results from such studies in the developed world ever be applicable to the developing world?

Firstly, the validity of such work across differing communities should be rigorously assessed to see whether their results are deemed generalisable. Secondly, studies can be potentially of more use if they take into account different contexts. Regional differences can be a strength within a multi-national study, not a weakness if an appropriate plan of analysis is integrated early on in the design of the work. Two major international research projects demonstrated this: the MRC CRASH trial[11] evaluating the role of corticosteroids on patients with head injury and INTERHEART,[12] a large case-control study of risk factors associated with myocardial infarction. These studies included research teams from various contexts, generating knowledge that is relevant and applicable to local settings.

Until such large collaborative initiatives become the norm, we should acknowledge the limitations of our current best evidence. Systematic reviews for instance need to present all sound evidence on the subject being studied, but conclude with take-home messages on the circumstances in which they may or may not work. Such simple messages could alert the reader on the generalisability of the conclusions reached and the type of setting where such evidence may yield higher impact. It is also essential that context-appropriate health research and health interventions take place in developing countries.

Exporting research results and intervention methods purely based from industrialised countries to poorer ones ignores the fact that expectations, costs and burdens of disease varies widely between these countries. The Cochrane Collaboration's health promotion and public health field, in collaboration with an international taskforce, has recently completed a study to make recommendations for systematic reviews of public health topics of particular relevance to developing countries.[13] Such recommendations will aid on the identification of topics or area where synthesised evidence may be of greater benefit for developing countries. Again, more of this evidence needs to hail from the part of the world where many of the global health problems are concentrated, to ensure truly systematic, global evidence-based medicine.

Barriers in research in the developing world

Lack of access to the research literature limits research efforts. A United Nations report presented in Addis Ababa in 1969 proposed that if the “vicious circle of underdevelopment” was to be overcome, an indigenous scientific capability needed to be fostered, which meant overcoming the “highly imperfect access to the body of world scientific knowledge”. [14] The current status quo of restricted access means that the scientific conversation between those in the rich and poor worlds—conversations in which clinical evidence is critiqued or new clinical trial reports are used to set policy—is an unequal one. “Authors from developing countries,” say Langer and colleagues, “are often not adequately prepared to participate in the international scientific debate, as they have limited access to the published literature.” [15] The HINARI program, set up by WHO together with major publishers, is an example of where a positive change is occurring, as it enables health institutions in 113 developing countries to gain access to over 3750 journal titles.

Beyond access to literature, many other issues can be listed as critical obstacles. The limited research—in terms of quantity and impact—arising from developing countries is also partly due to the poor academic environments. Academics in developing countries often work in isolated settings, and fewer interact with public health policy makers. They often work under extreme pressure in terms of clinical caseload and economic concerns mean that their spare time is devoted to private practice. In the same vein, issues of changing the research culture, investment in research skills and funding of research also appear as fundamental and important barriers to research activity in developing countries. As an additional contributing factor can be pointed that most prominent medical journals, mostly based in the developed world, appear to be less concerned with geographically and economically distant healthcare issues. [16, 17]

Academic and research collaborations based in developing countries need to address local issues and produce research that can be easily and readily implemented locally. Furthermore, there is a huge, untapped potential for research in less developed countries to contribute to medicine and public health in general by generating low cost solutions to health problems, some of which are also crippling the economies of rich countries despite their much greater spending on health. Such work may export success from the poor world to the rich world.

There is a lack of research funding into low-tech interventions with the potential of yielding important scientific and public health advances. This yield does not only refer to clinical end-points but to cost-effectiveness measures, amongst others. We should study low-tech interventions especially if they produce high yields in the appropriate settings. There are several examples of successful low tech health interventions that have been studied in resource-limited settings, such as management of depression, [18] treatment of seizures due to neurocysticercosis, [19] rapid diagnostic tools for tuberculosis, [20] and use of web resources to prevent sexually transmitted infections. [21]

Strategies to encourage access to research results and research capacity in developing countries

Chronic barriers to research in developing worlds need to be addressed. Formation of links through a formal organisational structure rather than just individual enthusiasm is vital to sustain collaboration. We must invite academics from the developing world to sit at the academic high table to offer their views on what work is needed. This will perhaps shape how all researchers, from both rich and poor worlds, frame their own papers by encouraging

to a more globalized thinking. To tackle the growing inequalities in global health and raise the profile of international health in developed countries, such novel approaches are needed.

One example is that of “NHS links”. NHS Links is a network of health professionals across the United Kingdom involved in a variety of health links between NHS trusts and health centres in less developed countries. John Wright, its medical director, argues that a “coherent and systematic approach to international exchanges would not only promote a more professional and equitable approach to the selection and induction of staff, but would also place global health and inequalities in the conscience of health organisations themselves”. [22] Such links would mean the ‘quality threshold’ for research would not need to be lowered.

The International Dialogue on Evidence-informed Action to Achieve Health Goals in Developing Countries (IDEAHealth) is a forum that focuses on a small number of important health goals, bringing together health policy-makers, researchers and citizens-consumers to share experiences and evidence in a bid to formulate solutions on how to respond to challenges like health human resources, maternal and child health and health financing.

Conclusion

As for evidence formulating policy, it is a naïve researcher who believes this will happen or that it always should. Reality shows well-documented and significant gaps between ‘what is known’ and ‘what is done’. [23] Health differentials between social groups, or between poor and rich countries, are not primarily generated by medical causes and require solutions at a different level.

When approaching the evidence for a low and middle income perspective, researchers need to be aware of context where it comes from, particularly assessing whether the evidence is relevant to their own setting. A true evidence-based approach towards global international health requires that the research and academic community from low and middle income settings have a major say in the shaping of interventions that address their own needs.

Acknowledgments

JJM is supported by a Wellcome Trust Research Training Fellowship (GR074833MA). MJZ is supported by a British Heart Foundation Clinical PhD Studentship (FS/04/062). The authors are very grateful to friends and colleagues that provided comments to earlier versions, including Andres (Willy) Lescano, David Moore, Vikram Patel, Marina Piazza, Ian Roberts, Mike Rowson, Cesar Victora and, last but not least, Gavin Yamey.

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