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Editorials

Closing the evidence gap in integrative medicine

A variety of methods of evaluating complex interventions should be considered

Integrative medicine was recently defined as "medicine that reaffirms the importance of the relationship between practitioner and patient, focuses on the whole person, is informed by evidence, and makes use of all appropriate therapeutic approaches, healthcare professionals and disciplines (conventional and complementary) to achieve optimal health and healing" (www.imconsortium.org). Such complex approaches are especially relevant in the management and prevention of chronic health problems, which are the main cause of disability and account for 78% of health expenditure.[1] A session at the recent US Institute of Medicine summit on integrative medicine in Washington, DC was devoted to the science behind the integrative medicine approach to health care,[2] and the subject has been debated at a recent Prince's Foundation for Integrated Health conference at the King's Fund, London (www.fih.org.uk).

Since the 1990s, attempts have been made to make integrative approaches more available in mainstream care. The experience of patients and clinicians might support their wider use, yet frustration is growing about the limited evidence base for integrative medicine. During the past 20 years, considerable efforts have been made to increase this evidence base. Despite the ongoing lack of research funding, the Cochrane Library currently lists 7679 clinical trials of complementary medicine and 674 systematic reviews. Yet when it comes to deciding whether an intervention, and which type of intervention, might be helpful for a particular patient, a worrying gap exists between the perceived potential for using integrative approaches in areas of poorly met clinical need and the availability of supporting evidence derived from good research.

What can be done to close this gap? More randomised controlled trials might seem the obvious answer, but when evaluating integrative approaches, randomised controlled trials may not always be the method of choice. Although randomised controlled trials are the gold standard when judging the average effect of a standardised intervention on a homogeneous population with a single condition, applying the results of such trials in the context of real clinical practice is far from straightforward, even when it comes to prescribing a drug. This mismatch between classic experimental research and the needs of "real world" decision making is not unique to health care—it has been well debated in the translational research movement across different disciplines within and beyond health.[3] [4] However, many

features of integrative medicine make these methodological problems especially pertinent.

Integrative interventions tend to involve potentially synergistic, multimodal, and complex interactions that are often dependent on the relationship between practitioner and patient, and on patients' preferences, expectations, and motivations.[5 6] For example, the motivation, compliance, and response of a patient undertaking dietary or other lifestyle changes, or practising relaxation exercises, will depend greatly on how they feel about their practitioner. Consequently, a randomised placebo controlled trial aiming to study components of integrative interventions in isolation may actually distort the very thing it is investigating.[7] Moreover, many patients who seek integrative medicine in routine care would often be excluded from entry into a trial because they have chronic diseases, multiple pathologies, strong preferences, or are using concurrent treatments. Therefore, the extent to which findings from randomised controlled trials can be generalised to these patients is far from clear.

The limitations of making systematic reviews and meta-analyses of randomised double blind placebo controlled trials the pinnacle of an evidence hierarchy were recently stressed by Sir Michael Rawlins, who expressed his concern that, "Hierarchies attempt to replace judgment with an over-simplistic, pseudo-quantitative, assessment of the quality of the available evidence" and that "hierarchies of evidence should be replaced by accepting—indeed embracing—a diversity of approaches."[8] Similarly, the translational research movement suggests using a "multiplicity of tactics."[3]

What sort of diversity or multiplicity might better reflect the complex causality of the real world?[9] To give some examples, pragmatic randomised controlled trials are increasingly used to collect evidence from typical populations receiving treatment in ways that reflect normal practice.[10] Within pragmatic trials it is possible to optimise rather than constrain patient-practitioner interactions, and by incorporating patient preferences into trial design, the effects of synergies between treatment and choice can be captured.[5] Observational studies might help target treatments and frame future research questions more effectively. More basic science research could help identify mechanisms of action, and meta-regression could better explain variability in response. Evidence from different sources can be combined using decision-analytical modelling and can be used for economic evaluations.[11] Overall, research should aim to serve both practice and policy development.[12]

We do not currently have enough evidence to close the door on research into integrative medicine and pronounce it ineffective. However, we will not be serving the best interests of evidence informed choice simply by undertaking more, and expensive, placebo controlled trials with non-typical patients and artificially standardised interventions, and ever more systematic reviews of existing heterogeneous, underpowered, and low quality studies. Rather, we should work

towards closing the evidence gap by broadening the range of evidence we use to evaluate the complex interventions that are characteristic of, although not exclusive to, integrative medicine.

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