

The case for practice-based evidence to support evidence-based practice

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Evidence-based practice is well established as an expected professional approach to intervention in our health services. In medicine, the primary source of evidence is from large-sample double-blind studies using randomised assignment to control and experimental groups. This approach is considered to be the 'gold standard' for evidential acceptability. Often, data from a number of studies are combined through meta-analysis, meaning that reviews of extensive research studies and the effect sizes of interventions are made accessible to health professionals through sites such as the Cochrane Collaboration, enhancing the ease with which evidence-based medicine can be practised.

tutes 'evidence' between the different disciplines within the field. Given that RCG studies are often held up as the 'gold standard', there is a degree of superiority expressed amongst those who identify as belonging to what they deem to be the most methodologically rigorous approach. While there are undeniable benefits from RCG studies in some respects, their problematic characteristics are often not topics of discussion, although, historically, there has been debate over the costs and benefits of heavy reliance on the methodology. For example, in psychology, the role of chance as a variable,¹ the paucity of direct replication^{1,2} and the distortions in the published record that can follow from editorial exclusion

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Other fields of health care, such as nursing, clinical psychology, psychotherapy, counselling, physiotherapy and occupational therapy do not necessarily rely on randomised control group (RCG) studies as their primary source of research evidence. The approaches used range through quantitative, qualitative and quasi-experimental methodologies and the numbers sampled in any given instance typically are relatively small by comparison with the large-scale projects that often occur in medical research.

due to a study's failure to achieve statistical significance³ all present challenges that increase the risk of Type-1 errors. Further, the 'law of large numbers' suggests that data from large sample studies may generate a number of statistically significant but clinically meaningless results.⁴

Regardless of the methodology, further problems for the practitioner occur in translating research findings into day-to-day practice, including determining their relevance to the individual patient who may differ in many ways from the persons who constituted the research populations in terms of lifestyle, diet, general health status and in a range of unique physiological and psychological variables. Despite this likely

As a consequence, what is accepted as evidence-based practice is likely to vary across the health field, and there is often a discourse around what is or is not 'good science' and just what consti-

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variation in patient populations, there seems to be no real focus on the other side of the evidence-based practice coin, namely, practice-based evidence.

Typically, patients have their condition diagnosed, they are given some information regarding their health status and treatment options, advice about possible side-effects of about-to-be prescribed medication, and left to come back for a further consultation if there is no change or a deterioration in their symptoms. The expectation appears to be that the evidence supporting the selected intervention means it will be efficacious for this patient because the research says it should be. If the patient does return, complaining of 'side effects' or less than expected change, the treatment may be changed or increased in intensity, but with no planned follow-up in place. Thus, in many fields of health care there seems to be an absence of systematic methodology when it comes to applying the findings from larger-sample studies to the single individuals who present as clients. In other words, there appears to be no functional approach to practice-based evidence gathering.

Perhaps it is time for a systematic evaluation of alternative methodologies applicable to small samples or to single individuals which could then complement the large studies used to generate the evidence bases for practical application. Such small-sample methods may well then not only create a basis for practice-based evidence but could, in a cumulative sense, feed back into the research much-needed evidence on the generality and applicability of the interventions in the 'real life' context.

One potential small-sample method, single-case replication designs, is well established in one field of psychology—behaviour analysis.^{1,5,6} The single-case replication designs offer a systematic, quantified and powerful means of evaluating the changes between pre-intervention baseline and post-intervention findings which can be used with single patients or small samples of patients. For example, a series of pre-treatment blood pressure readings could effectively serve as a baseline against which to measure changes following prescription of hypertensive medica-

tion. If necessary, variations in dosage could be measured against blood pressure readings to titrate the dose. Perhaps it would be a useful adjunct to the training of health professionals to introduce them to applications of single-case designs so that they could evaluate their utility in providing practice-based evidence on the efficacy of evidence-based practice.

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