



RESEARCH ARTICLE

CAN EVIDENCE-BASED PRACTICE REVOLUTIONISE THE PROFESSION OF NATUROPATHY

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ABSTRACT

During the last 40 years, the world has witnessed a significant change in the practice and delivery of health-care (Leach and Tucker, 2017). According to Leach and Tucker (2017), these changes are the result of advances in technology, and the exploration of new frontiers in the field of Health Science, thus expanding our understanding of the aetiology and mechanism of disease, along with the burgeoning complexity of patient illness. In addition to these contributing factors, however, the 'movement' that is now referred to as 'evidence-based practice' features as having a causative role in the changes observed. Moreover, there also exists a growing body of research on this topic which claims to demonstrate that if 'only the best available evidence' were to be applied to clinical practice, significant improvements in the quality of naturopathic health practice, its service delivery, and its safety would be conspicuously enhanced (Boaz, Baeza and Fraser, 2011; Dickersin, Straus and Bero, 2007; Leach, 2006). The purpose of our paper is to determine the extent to which the epistemological framework within which these presumptions are embedded prove to be adequately articulated.

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INTRODUCTION

According to Leach (2010) and others (Murphy, Schneider, Seaman, Perle and Nelson, 2008), the 'evidence-based practice' movement is placing considerable pressure on practitioners to deliver health care services that are built upon an epistemological framework of strong scientific evidence. In the context of Complementary and Alternative Medicine (CAM), there have been recent attempts to reduce the gap between 'scientific evidence' and clinical practice (Bussieres *et al.*, 2014; Schneider *et al.*, 2015). However, whilst some research progress has been made, several researchers contend that the 'best available evidence' is not satisfactorily being practiced in clinical settings (Leach and Gilham, 2013; Schneider *et al.*, 2015; Bussieres *et al.*, 2015). It is this disconnect between scientific research and clinical practice that is commonly referred to as the 'research-practice gap' (Agbedia, Okoroonkwo, Onokayeigho and Agbo, 2014; Lizarondo, Grimmer-Somers and Kumar, 2011). As noted by Chen and Boss (2014), 'evidence-based practice' is being touted as the benchmark by way of which all aspirant approaches to healthcare can be deemed safe, effective, patient-centred, timely, equitable, and systematically reliable.

Some researchers, however, such as Reid *et al.* (2016) argue that where 'evidence-based practice' facilitates the above outcomes for medical science, traditional naturopathic practice falls outside this prestigious enterprise, because its foundational perspectives are not informed by research which is empirically-based. This being so, it is argued by Wardle and Adams (2014) that naturopathic treatment has the potential to lead to precarious scenarios of unsatisfactory patient care, and the exacerbation of medical problems which require evidence-based practice. According to Laragy and Allen (2015), naturopaths working in primary care are faced with the increasing challenge of bridging the gap between research evidence and patient expectation, which in the context of traditional naturopathy is recurrently perceived as non-congruent. One argument supporting non-congruence is that the epistemological foundations of naturopathy and Western, conventional medicine differ greatly, and for this reason, bridging the gap between research and practice favours a more conventional medicine context. Nonetheless, Laragy and Allen (2015) point out that with the emergence of 'consumer directed care', consumers are becoming more involved in the design and delivery of the care they receive.

Given this innovative perspective, clinicians have the responsibility to meet patient expectation, and at the same time, ensure that such expectations reflect the ‘best available evidence’. It is assumed by some scholars that the majority of research undertaken in the field of naturopathy has a qualitative focus, and thus, despite rigorous and methodologically sound protocols, naturopathic services may not adequately capture the nature of complex patient symptomologies and treatment outcomes for clinical practice (Kumar and Roberts, 2017). An interesting concept put forward by Kumar and Roberts (2017) is that whilst researchers naturally focus on the “science” of practice, practitioners instinctively focus on the “art” of practice. The idea here is that practitioners acknowledge the need to demonstrate compassion, effective communication, professionalism, integrity and respect for patient autonomy (Kumar and Roberts, 2017). To address this issue the contention put forward by Kumar and Roberts (2017) is that there is a current need to cultivate an appropriate balance between what is termed the ‘science’ and ‘art’ of clinical practice. The notion of creating a balance between science and art is indeed an appropriate concern in the context of naturopathy, but when characterised as a pragmatic heuristic, the established evidence, regardless of its plausibility and scientific orientation is all too often compromised or ignored (Hinchey and Laura, 2018). However, it is salutary to remind ourselves that the research-practice gap is not an anomaly issue exclusive to CAM modalities such as naturopathy. For instance, Leach and Tucker (2017) acknowledge that the research-practice gap continues to remain a matter of concern for a number of disciplines, of particular note are: nursing, physiology, and allied health, where discourse on the issue remains a topic for debate. However, what Leach and Tucker (2017) aim to establish is the fact that unlike conventional health disciplines, CAM disciplines have been given very little attention in the scholarly literature. When it comes to analysing the problem of CAM and the extent of its research-practice gap, the absence of a critical discourse sufficiently developed to address these issues is itself a factor which by its very nature serves to increase the gap (Leach and Tucker, 2017). Given the recent emergence of CAM as an academic discipline in its own right, the importance of developing a discourse on the issue of CAM must be regarded as a priority, particularly if its research-practice ‘gap’ between ‘science’ and ‘art’ is ever to be bridged.

**How Evidence can Revolutionise a Profession:** According to Amin-Tabish (2008) and others (Polich, Dole and Kaptchuk, 2010), a considerable literature has accumulated which professes that there is no acceptable alternative to conventional medicine. The traditional rationale for this position is sponsored on the presumption that the criterion for assuring that a health discipline can be considered as an authentic form of ‘medicine’ only if the discipline itself can be supported by scientifically proven, solid data, for which no evidence is lacking (Amin-Tabish, 2008; Polich, Dole and Kaptchuk, 2010). According to this empirically-based epistemological perspective, modalities of health practice such as naturopathy are judged to be unreliable ‘alternates’, not necessarily by way of their approach to practice, but rather as a consequence of its lack of scientific data to support its claims (Hinchey and Laura, 2018). From this it follows that modalities of Health Practice regarded as ‘unconventional’ by mainstream medicine, become ideologically incarcerated within a stereotypically cultural construct which severely restricts

professional opportunities to achieve legitimacy in the context of conventional medical practice (Hinchey and Laura 2018). However, Amin-Tabish, (2008) and others (Polich, Dole and Kaptchuk, 2010) champion the point that although certain modalities of health practice may not be supported by the same level of evidence claimed by health disciplines such as nursing, allied health and medicine, the wider community should remain free to choose whatever method of healthcare they prefer, with the stipulation that individuals accessing such services are appropriately informed as to the safety and efficacy of whatever method they choose. This is a point of paramount importance, since without an opportunity to exercise their right in the principle of ‘informed consent’, individuals who choose ‘alternatives’ may think they are choosing a safe and effective medicine which in reality may represent an ineffective array of alleged remedies or interventions at best (Amin-Tabish, 2008; Polich, Dole and Kaptchuk, 2010).

According to Amin-Tabish (2008), it is understood that a number of complementary and alternative medicine practices, naturopathy included, are often precluded by conventional medicine because the efficacy of treatments has not been demonstrated through the so-called ‘gold standard’ methods of research evidence, involving randomised, double-blind, and placebo-controlled trials. This issue has now become embedded in the politics of epistemological ideology within the context of medicine which disavow ‘alternate’ therapies as a whole, inasmuch as it is reckoned that they will not achieve the same level of rigorous standards which are requisite within the aegis of conventional medicine (Wardle and Adams, 2014). If an individual claims to experience symptomatic relief through ‘alternate’ naturopathic interventions, the conventional response to marginalise the success of the practice is taken up by reference to a small host of factors including:

- The placebo effect (*mind over matter*)
- The natural recovery from, or the cyclical nature of illness: otherwise known as the *regression fallacy*
- the possibility that the person was a hypochondriac and never actually presented with a genuine physiological illness, rather than a psychological projection of illness (Linde *et al.* 1997)

Regarding the above point, proponents of CAM suggest that that such events could be attributed to cases in which conventional medicine has also been used (Amin-Tabish, 2008; Wardle and Adams, 2014). However, to this retort, opponents of CAM note that such an argument cannot account for conventional medical success in double-blind, placebo-controlled clinical trials (Lake, 2017). Nonetheless, there is an acceptance by proponents of CAM that there is a need for more research to be undertaken to demonstrate the effectiveness of complementary therapies before they can be incorporated within a conventional medicine framework.

**The Importance of Evidence in the Context of Use:** According to Leach, Hofmeyer and Bobridge (2016), it is understood that approximately 43 percent of Australian adults use some form of CAM therapy. Statistical analysis on specific conditions such as cancer suggests that up to 91 percent of patients diagnosed utilise CAM therapies in conjunction with conventional medicine (Bishop, Prescott, Chan, Saville, von Elm and Lewith, 2010).

Table 1. Research in Complementary and Alternative Medicine

Treatment	Evidence	Comments	Rating of Evidence
<i>Zingiber Spp. (ginger)</i> (Ryan, Heckler & Dakhil, 2009)	In this study, the use of <i>Zingiber spp. (ginger)</i> was shown to significantly reduce the nausea experienced by individual's undertaking chemotherapy. The study followed 644 patients diagnosed with chemotherapy-induced nausea and vomiting, finding that a dose of 0.5-1.0 g daily significantly reduced symptoms.	The study on ginger in patients with chemotherapy-induced nausea, and vomiting, include over 600 participants, and not only demonstrated efficacy but also determined the dose response relationship and side effect profile. It is therefore the position Holt (2011) to acknowledge that such research is of equivalent standard to some of the best clinical trials undertaken by pharmaceuticals.	A
<i>Medicinal Honey</i> (Wijesinghe, Weatherall, Perrin & Beasley, 2009)	A meta-analysis that examined the effect of medical honey on burns found a markedly greater efficacy for the intervention of honey when compared to alternate dressing treatments for superficial or partial thickness burns.		A
Coenzyme Q10 (Rosenfeldt, Haas & Krum, 2007)	A meta-analysis which examined the effect of Coenzyme Q10 on hypertension demonstrated that Coenzyme Q10 effectively lowered a patient's systolic blood pressure by up to 17mmHg and diastolic pressure by up to 10mmHg, without significant side-effects.		A
Treatment	Evidence	Comments	Rating of Evidence
<i>Hypericum perforatum</i> (St John's Wort) (Whiskey, Werneke & Taylor, 2001)	A met-analysis that examined the effects of the herbal, <i>Hypericum perforatum</i> in depression, including 22 RCT's, clearly demonstrated that <i>Hypericum perforatum</i> is significantly more effective than placebo, and moreover demonstrates an efficacy similar to that of pharmaceutical antidepressants.		A
<i>Omega-3 Fish Oil</i> (Jazayeri, Tehrani-Doost & Keshavarz, 2008)	A large RCT which compared the effects of omega-3 fish oil to the antidepressant fluoxetine, in people with major depression, demonstrated that high dose fish oil, and/or, fluoxetine had approximately equal therapeutic effects in major depressive disorder.		B
<i>Capsaicin</i> (Mason, Moore & Derry, 2004)	A review of six clinical studies, examining the efficacy of capsaicin on joint pain found that capsaicin can be useful for some patients who are unresponsive to, or intolerant of, other treatments.		B

However, despite the pervasiveness of CAM therapies, Lake (2017) points out that little is known about the effectiveness of such therapies on patient health. Nevertheless, Lake (2017) is quick to acknowledge that the reason little is known about the effectiveness of CAM therapies stems from the regulatory standards in which CAM therapies are evaluated. For instance, Lake (2017) points out that the majority of CAM therapies are regulated (and at times, non-regulated) completely separately from conventional medicine. This line of discourse has been previously mentioned by Amin-Tabish (2008) who notes that CAM therapies are often marketed and used by patients without being held to the same clinical standards and testing as is conventional medicine, particularly for efficacy and safety. Supporting the above claim, and championing the importance of closing the research-practice gap, is Linde *et al.* (2001) and others (Wardle and Adams, 2014), who recognize that although a small percentage of CAM research shows good scientific rigour, a large majority of the research is fraught with methodological shortcomings. For example, the work of Nahin and Strauss (2001), and others (Lake, 2017) highlight that one significant, and common, shortcoming to clinical CAM research is a lack of comparison to a placebo-or control-group.

On this point, Lake (2017) argues that there is a difficulty which presents when a study relies solely on a single treatment group, such as the utter neglect of effects which may arise from not receiving the treatment at all. For instance, such effects include improvement without intervention, regression artefact, and the placebo effect - a physiological improvement arising from simply going through the motions of being treated. For this reason, Polich, Dole and Kaptchuk (2010) put forward the prerogative, that unless CAM research is to employ baseline and post-treatment measures to evaluate effect, including the measures of treatment and control, the research itself we fail to capture the benefits gained, and whether they specifically relate to the treatment itself. Unfortunately, previous findings attest to the fact that even in cases where CAM randomised controlled trials exist, the validity of the study continues to be called in to question (Rutten and Stopler, 2005). For example, a Lancet review by Rutten and Stopler (2005) acknowledged, that after controlling for bias for both CAM and conventional RCTs, there was robust confirmation to support weak evidence for a specific effect attributed to CAM therapies, whereas conventional medical interventions were supported by strong evidence.

Continuing the conversation on evidence and validity, Holt (2011), suggests that the field of CAM research is rife with pilot studies, epidemiological research, in-vivo experiments, animal studies, case reports and non-controlled studies. However, Holt (2011) makes the point that such research is, at best, a starting point for well-designed, controlled clinical trials. Benevolently, Holt (2011) recognises that the research undertaken to date on CAM therapies is a condition of the funding specified for CAM therapy, resulting in a lack of funds for expensive clinical trials. However, Holt (2011) responds to this point by stating that such a challenge does not entitle researchers of CAM to produce inferior studies with methodological drawbacks. It is therefore, the point of Holt (2011) to ensure that quality studies are undertaken before such therapies can be recommended. Despite the lack of evidence and/or methodological shortcomings in CAM research highlighted here, it is important to acknowledge that evidence in the field of CAM continues to emerge which reflects arguments that have been voiced in this paper. For example, the following table highlights several quality studies that undoubtedly constitute a very high level of evidence (Table 1). Moreover, ratings of evidence (Levy and Hyman, 2015) have been included, with a rating of 'A' indicating a high quality study with consistent results.

## DISCUSSION

According to Holt (2011), the studies described above are either large RCT's, systematic reviews or meta-analyses of RCT's – which on reflection of the points discussed earlier, demonstrate the highest level of evidence in medical research. Moreover, the therapies outlined in Table 1 can be defined as sole CAM therapies according to Levy and Hyman (2015) and Steel *et al.* (2015). Interestingly, Holt (2011) expresses the point that despite these therapies being acknowledged as CAM therapies, the fact that such interventions prove effective may mean that such therapies 'graduate' into routine clinical, medical practice. It can also be argued that future studies on the topics addressed in Table 1 will almost certainly demonstrate that CAM therapies can be safe and effective and, perhaps importantly, could even help with some of the most difficult problems in modern medicine today. Admittedly, CAM therapies that demonstrate strong evidence can be hard to find, which according to Holt (2011 p. 7) means that they can often be hidden in a "sea of nonsensical therapies and poor quality research". However, put simply, if we are to dismiss all CAM therapies, and products, as lacking evidence, it may result in patients not receiving effective and safe adjuncts to treatment.

## Conclusion

In the context of naturopathy, recent studies have started to focus on safety and efficacy of medicinal plants, investigating the pharmacology of plants and mechanisms of action (Steel *et al.*, 2015; Wardle and Adams, 2014). However, according to Sibbritt (2015) the undertaking of this research has led to a general neglect of other forms of research, research which Sibbritt (2015) suggests would specifically identify the clinical effects of naturopathic intervention. It is understood that for the profession of naturopath to demonstrate value it must work towards increasing its confidence for both the consumer and other health professionals, of particular note general medical practitioners (Sibbritt, 2015). Reinforcing the point made by Sibbritt (2015), is Kirby *et al.* (2016), who found that

consumers decide to use a particular CAM therapy based more so on their knowledge and understanding of the treatment rather than its perceived effectiveness. This being so, Kirby *et al.* (2016) make the suggestion that the imperative of research is to improve the current lack of knowledge that consumers have in regard to the specific therapies touted as evidence-based therapies. Kirby *et al.* (2016) points out that researchers can accomplish this by comprehensively charting the diagnostic tools and treatment activities utilised in clinical settings. Moreover, research which clearly highlights variables specific to treatment such as: safety issues for the administration of particular herbal medicines and/or supplements, and demonstrates sound validity, will provide consumers with a much needed knowledge that may deter them from purchasing herbal medicine and supplements at retail stores or online without the guidance of a qualified health professional. Clearly there is a need for strengthening the research base for CAM therapies, including the modality of naturopathy. To date, the strength of CAM therapies remains an ongoing debate. However, it is clear that an acknowledgment has been made to the current depth of research available, despite its limitations. Future discourse on this topic is likely to reduce these limitations and fortify the scope for CAM research into the future.

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