Can music therapy in medical contexts ever be evidenced-based?¹

1. Parts of this paper were presented at the Symposium on Evidence Based Medicine at the EMTC conference, Finland, June, 2004. With thanks to Professor Tony Wigram for the invitation to present in that symposium.

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Abstract

This essay seeks to consider some of the issues around evidence that provide an ongoing challenge to the profession of music therapy to be vigilant and critical with regards the undertaking, but also the appropriation or application, of research in our allied health discipline. It is written in response to the statement that “medical music therapists need to continue to discuss and debate our views as to what constitutes knowledge, expertise and ‘evidence’ in our profession.” (Edwards, 2002, p. 33). A critical perspective to current demands for evidence is provided, and the use of quantitative method as the basis for trustworthy research in music therapy is discussed. The paediatric medical context is the main site of professional research of the author, however, some of the points made will have relevance for other fields of clinical service.
Introduction

There was a time, in the experience of this author, when music therapy posts in medical services could be justified through demonstrating that individual patients, in direct contact with the music therapy department’s services, had benefited from these interactions. This justification could be provided in the form of accounts of the benefits received by patients and, where appropriate their families, with additional support from the case material published in the international literature mixed in with music therapy and other practitioner’s testimony in the setting as to the role of music therapy in appropriate and professional care for medical patients. Evaluation of clinical service that was able to demonstrate positive results, sometimes through “tick and flick” style feedback sheets developed by the music therapist and distributed to staff, or completed by the music therapist, were often sufficient to allow the next round of funding to flow into the service, or to allow service expansion. Some hospital services could be persuaded to develop new posts based on practices elsewhere, especially (in this author’s previous experience in Australia) if it could be shown these happened in “big”, or “modern” countries such as the UK or USA.

Building site-specific services that are based on contextualised evaluation expressed in persuasive narrative is arguably becoming increasingly difficult, as the claims of benefit based on patient feedback in the local setting can be rejected by administrators, with the demand for “evidence” from research studies conducted in a much wider range of settings, and, in the main, approached using quantitative method (Edwards 2002; Vink & Bruinsma, 2003).

In a critique of some of the ways EBM has been implemented, Porta (2004) concluded that -
There is much that EBM can give to clinical medicine by its ability to organize complex data sets for the ultimate benefit of patients, but there is also much that can stifle practice by forcing a dogmatic implementation, rather than a flexible common sense approach, of its principles.

(Porta, 2004, p. 147)

While it is relatively easy to concur with these concerns, one distinction between the implementation of the principles of EBM in medicine and the same principles applied in music therapy is in the differences between the ways in which the professions themselves are treated in a medical context. No one would consider, for example, that a hospital could be run without doctors, but it is of course the case that many hospitals are run without qualified music therapists. It is therefore potentially far more threatening to have the principles of EBM applied to our field, since the number of studies conducted has been so relatively few, and also there is no statutory requirement for music therapy provision that protects our posts. The demand for evidence that is produced along the same lines as drug trials in the pharmaceutical industry, while seeming somewhat bizarre for a very small field with arguably a narrative tradition of explanation and inquiry, is nonetheless imposed as an anxiety inducing necessity, in order to continue to be funded to provide service.

**Ways of researching**

There has, however, been a long running argument in the field of music therapy that the application of quantitative methods, that are favoured by EBM, to music therapy investigations in the medical contexts where we work can be problematic, and therefore other alternatives to developing a rationale and ‘evidence’ for what we do, should continue to be promoted by the small number of music therapy researcher/practitioners in the field of medicine internationally.
The Randomised Controlled Trial (RCT) is described as the gold standard for medical research. This approach to research is borrowed directly from the research methods of the physical, or so called natural, sciences and is informed from the perspective that human activity can be investigated in the same way as the activity within the physical world. While in the initial stages of its introduction into the world of medical research the RCT was developed as a means to test pharmacological interventions, it has gradually emerged as the standard, acceptable method for investigations in all other dimensions of health care service from surgery to podiatry. The outcomes of single RCTs have now been somewhat diminished in status by the introduction of the meta-analysis, that is the findings of a statistical analysis of outcome of all relevant RCTs as one of the few means by which a service provider might be persuaded to change aspects of practice.

As the welcomed professionalisation of music therapy has occurred, and also in line with the elevation of the profession to a place alongside allied health within medical services, music therapy faces the same demands that it be accountable as these other professions to deliver verified and reliable outcomes for everything that takes place in the music therapy encounter. It seems to the author that the RCT and consequently the meta-analysis is gaining ground as the prime means for gathering information to demonstrate that music therapy does what it says it is doing.

While there certainly are a large number of RCTs to substantiate a role for music therapy in aspects of medical care, it has been proposed that the RCT is not always a method appropriate for use in music therapy research with adults receiving palliative care services within a medical context (O’Callaghan, 2003). O’Callaghan stated that the reasons the RCT is difficult if not inappropriate to develop as a means to test hypotheses about the effects of music therapy in her work are:
1. Diverse characteristics of the source population. The range of therapies simultaneously being used with patients, their highly fluctuating physical and emotional responses to those treatments, and their diverse psychosocial and musical backgrounds, means that randomization is likely to be ineffective in distributing confounders evenly between groups.

2. Music therapists tailor their approach according to patients’ responses, that is, the MT process does not allow for a standardized treatment.

3. Measurement of outcome. The use of quality of life and associated scales may measure criteria important to the researcher, but they do not necessarily capture respondents’ idiosyncratic voices reflecting whether the experience was important to them. (O’Callaghan, 2003, p. 1045)

Applying the RCT in research work with hospitalised children has also been suggested as problematic as follows:

In experimental clinical research, it is understood that in order to measure the effect of a phenomenon, the presentation of the stimuli…must be consistent for each subject involved in the experiment. A difficulty however, is that music therapy in practice does not simply consist of the administration of a consistent protocol, such as three minutes of one type of music followed by four minutes of another (Edwards, 2002, p. 31).

The resultant research, with its prescribed “dosage” of music runs the risk that it is not relevant to the real-world context in which music therapy is practiced.

The humanities, alongside which music therapy is theoretically nested, has a long running argument with science as to the ways in which knowledge about a particular phenomenon can be achieved, as exemplified in the following statement:

Human action is one of the subjects which divides the humanities from the physical sciences. The humanities study human expressions and actions, implicitly accepting the notion that human beings are free to choose to do various things and they will, at times, freely produce exceptional and creative expressions. The
Ways of researching


sciences, on the other hand assume that the universe is ordered and that events are causally related.

(Polkinghorne, 1983, p. 169)

What exactly is the problem?

It can be argued that there are a number of problems with the ways that traditional medical research approaches require music therapy to be researched in order to meet criteria for trustworthiness. These problems involve such difficulties as how to operationalise music as a variable in studies, and ethical issues that arise in considering the use of intrusive measures such as blood and saliva samples that are considered indicative of change in studies of medical patients, especially when it is proposed that these tests be carried out on children.

Davis & Thaut (1989) discussed a range of theories from as long ago as the 1950's that have proposed that physical responses to music are best conceptualised as highly individual. That is they are “consistent but idiosyncratic” (Davis & Thaut, 1989, p. 170). It has been argued that earlier research in music response was hindered by the expectation that the study of human response to music was intended to reveal “a consistent, generalizable stimulus-response relationship.” (Davis & Thaut, 1989, p. 171). While music therapy research studies arguably increasingly include measures of physical response in studies of music’s effects whether with non-clinical populations (e.g. Davis & Thaut, 1989), or clinical populations (e.g. Robb et al, 1995), these research outcomes provide conflicting views as to the reliability of physical response as a measure of change attributable to the music listening experience.

One of the problems with the suggestion that if more and more studies are produced that demonstrate positive physiological responses to music, it will help us to improve our funding and posts, is that in the regular
domain of clinical practice, the music therapist rarely, if ever, has access to indicators of physical change or the expertise to interpret changes in the measures that may be routinely taken from the patient by clinical staff, or available from bedside monitors. Many times, in presenting talks to physicians and medical researchers the lack of these measurements in the author’s research with children has been challenged. While these findings from laboratory and physiological work have been used to support music therapy interventions, these are not measures available to the clinical practitioner, and therefore I propose it is problematic to continue to use these measures in studies to bolster the idea of the worthiness of music therapy interventions while information as to the moment-by-moment experience of therapy work is overlooked.

Children’s self-report, the interpretation of the music therapist and any observable behavioural changes, such as the cessation of whimpering, the child or falling asleep, are the primary dimensions through which responses can be directly observed in the therapeutic setting at the children’s hospital, and it continues to be of concern that these type of observations in the real-life clinical context seem to be considered less important as indicators of change than physiological measures taken in controlled studies with non-clinical populations.

In real life clinical practice, many uncertainties confound what is able to be known about the patient’s experience and, in response, what one should best do to be available therapeutically for patients. The music therapist’s training enables them to be patient and responsive in difficult and stressful situations for the patient and indeed for themselves. The music therapist must at times wait uncertainly for the next stage of a therapeutic relationship to unfold, or to allow a patient to be angry and ‘unreasonable’, and even loud without blocking the patient’s needs or in fact interpreting these responses as indicating music therapy has not been
successful. Music therapy interactions do not always fit a neat package of treatment protocol and clinical result. The music therapist is not necessarily seeking an instant and observable positive response from a client or patient and this expectation of short-term changes in the medical setting can be unrealistic to the therapist’s goal for their work with the patient.

...and the dilemma

There is something then of a dilemma as to how to manage the information that is available to support the work of music therapists, especially in presenting it to administrators who are looking for evidence that they should continue to fund programmes. This author would be the first to admit that while continuing to critically examine and comment upon the means by which the information to support music therapy is produced, she consistently produces documents for music therapy employers that use the EBM framework as the starting point for elaborating the role and effectiveness of music therapy in a range of settings.

However it is not time to panic yet. The work of music therapists in medical contexts has continued to be described and delineated, and a role shaped has been out for us probably in part by virtue of this emerging body of somewhat problematic research that uses the RCT. There is perhaps one further salient point to convey to some of our administrators, and that is, they cannot expect such a small group of practitioners internationally to be undertaking regular expensive research studies in the ways large pharmaceutical companies are able. At the same time one does sense a rising panic in response to observations that what could be called the EBM industry is starting to have a lifeblood, of its own making, that potentially drains away the capacity for clinical responses that are creative, spontaneous and uniquely helpful to individuals in difficult
situations. As Aldridge (2003) has proposed, “Emphasising one authoritative base for music therapy research is suspicious. The quest for one superior model for empirical evaluation is the quest for disciplinary power and an attempt to marginalise other opinions.”

Further critique

One of the founders of EBM has written a commentary about the development of EBM since its introduction in the early 1990s (Haynes, 2002). In this paper, he reminds us that the first experimental study in medicine using randomisation was published in 1948, and this puts the author to mind of the fact that the field of science as we know it today is only some 200 years old. The point being made is; we should not get carried away by the idea that these approaches are real, and hold some truth that is better than another truth or better than the truth of our own or our patient’s experience. We could argue that it may be the case sooner rather than later that EBM will be considered old hat; a fad or a phase that health care systems adopted that was considered good in principle but cumbersome, expensive and time wasting in practice. We must remember that EBM is not based on immutable natural laws, it is a constructed, potentially helpful framework that is being incorporated, in the opinion of the author, clumsily and ill-advisedly to attempt to cut and rationalise expensive health services, rather than necessarily improve patient choice and care.

Further points made by Haynes (2002) are worthy of note and are summarised below:

- “EBM has long since evolved beyond its initial (mis)conception, that EBM might replace traditional medicine. EBM is now attempting to augment rather than replace individual clinical experience and understanding of basic disease mechanisms” (Haynes, 2002, p. 1)
• There is currently no convincing evidence to support the presumption that practitioners who use EBM will provide superior patient care to those who do not practice EBM (Haynes, 2002).

• The research methods of medical science are pluralistic and expanding – “different methods, observational and experimental are needed for exploring different questions” (Haynes, 2002, p. 6)

• “…it is difficult to be smug about the superiority of the research methods advocated by EBM when the results of studies that are similar methodologically not infrequently disagree with each other.” (Haynes, 2004, p. 11)

• “…full implementation [of EBM] would cost much more than the resources currently available for health care.” (Haynes, 2002, p. 12)

While Haynes’ view shows a tempered, and somewhat balanced approach to the implementation of EBM in decision making about clinical service provision in practice there is a view that some types of research are good and more trustworthy than other types of research. A recent paper on Evidence Based music therapy (Vink & Bruinsma, 2003), presented a table of types of evidence that showed a ‘thumbs up’ and ‘thumbs down’ symbol against different types of evidence, with the meta-analysis and the RCT getting the ‘thumbs up’. This suggests that some types of evidence are better than others. Shepherd, however, has proposed that in Evidence Based practice these different types of evidence could be viewed as fruits, with different types representing different shapes and flavours rather than, as he has put it, these research types being like a banana, with larger bananas being better than smaller bananas.¹ It could be argued we are better to stand alongside Haynes’ statement above about the types of questions we ask needing different ways of researching, rather than taking on the dominant model of EBM without some consideration and critique.

¹. This comment was made at a paper “What is mental health?” – a manager’s view, presented on July 7th, 2004 in the seminar series “What is mental health” hosted by the Arts Therapies Department at Fulbourn Hospital, Cambridge.
Practical suggestions

When approached to provide evidence, practitioners might consider whether the administrator requires:

- A service evaluation?
- A report of a single well designed RCT?
- A report of a meta-analysis/Cochrane style review?

It is not possible to undertake either an RCT, or a review, without substantial funding and other research support, however it may be possible to indicate how the music therapy programme is meeting needs of service recipients through an evaluation. In responding to such requests, the practitioner must decide whether they have been given adequate time by the employer to take on this responsibility. Presenting evidence can take a lot of preparation time and the employer must be prepared to fund this time. Unfortunately, it may be the case that the administrator is just looking for a way to cut the budget, and if this is the situation then other strategies than just preparing a literature review of evidence or undertaking a service review might be called for.

In deciding what to present, it is possible to:

- Find existing work (such as published research and/or evaluations) and present it
- Find existing work and adapt it
- Find related work and copy its ‘frame’ - Example: [http://www.nelh.nhs.uk/](http://www.nelh.nhs.uk/) This web link shows reports giving 3 grades of evidence and some reviews are described as ‘evidence-linked’ rather than ‘evidence-based’. This might be helpful terminology when there are no RCTs or meta-analyses in your area of practice.

How can you best be prepared for such a request?

- Be prepared to read as many articles in your field as you can (that is, other music therapy journals than the one in your own country)¹
- Learn the distinction between different levels of evidence
• Undertake database searches
• Approach people like the author for assistance
• Take responsibility to be an ‘evidence-generator’ in your field
• Challenge others who say/publish that we have ‘no evidence’ in music therapy
• Remember that evidence has many levels of trustworthiness and many other areas of health care continue in spite of only meeting some of the levels (see Edwards, 2002 for further information on levels)

**Conclusion**

Vink & Bruinsma (2003) suggested that when presenting evidence, some practitioners choose not to ‘distinguish qualitative research (patient series and case studies) from quantitative research’ and they suggested this could be problematic because of the ‘worry about…controlled trials in their area of specialisation’ (p. 26). They suggested that if work is presented which ‘lacks the scientific standard that is widely appreciated’ then problems with ‘communication with other disciplines’ (p. 26) might arise. This worry might be lessened, it could be argued, if we preface our presentations of evidence with caveats that enable the most productive communication to occur. One of these, for example, is the fact that even in the most elegantly designed RCT in music therapy the placebo is rarely used. This is because in pharmacological studies it is imperative that a cost-effectiveness balance be examined following comparison between the wonderful human capacity to make oneself better through the belief that treatment is being received (placebo) and the treatment effects of an expensive and possibly side effect inducing drug. Where the

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1. In the author’s own field of music therapy with hospitalised children a recent search conducted with Jeanette Kennelly for refereed papers that were published from 1994-2003 found 48 in total. If one’s first year of service commenced today, this would only require reading one paper per week to be considered up-to-date on refereed studies and reports in this area.
differences in the benefits achieved between placebo and treatment groups are inconsequential, then the drug may not be issued, in spite of the changes being significant against a non-treatment control group.

It is a challenge to consider how to further develop research work that substantiates music therapy, but does not undermine or trivialise it. It is imperative to find ways to speak to administrators about the work of music therapy in contributing to total patient care, and to argue that some of the ways in which music therapy will benefit patients may not have yet been proven because, in fact, they have not yet been researched. It could be argued that the cost of researching ‘properly’ some of what music therapists do would take far more than the budget to develop useful programmes of service in hospitals. Common sense must prevail in regards to this, and administrators who use ‘inadequate evidence’ when they mean ‘need to curtail expenditure in the next financial year’ must expect to be challenged.

It is worth considering ways that we can put more resources of our professional associations into developing research and writing ‘evidence’ reviews, (remembering that this might cost all of us more money in our professional subscriptions). A challenge to full-time University academics such as myself who have research responsibilities is to ensure that the research and inquiry we undertake is of use to practitioners in the field and perhaps, also, helps to guide and build the field. Perhaps we need also to encourage more of our doctoral students to take on review studies as the focus of their research.

To answer the query posed in the title, I suggest it is questionable whether music therapy can or should ever be completely evidence-based as determined by research outcomes that fit within the various levels of evidence that EBM proponents have produced, however music therapy’s
contribution to a debate on this question could possibly lead to opening up other areas of therapeutic practice where evidence from the international literature is hardly the most reliable source of information about what one should do next with this particular patient, or this particular difficult moment. The skilled music therapy clinician relies on common sense and an informed clinical judgement. Evidence gained from case series and clinical studies is only one foundation of clinical knowledge and must be integrated with other types of knowledge and certainty.\(^1\)

**References**


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1. Lars Ole Bonde pointed out during the discussion at the EBM symposium chaired by Professor Tony Wigram in Finland (during the EMTC conference) that many of the research presentations at the conference employed mixed method designs. In order to help music therapy present its ‘evidence’, he suggested that the criteria for evidence should be broadened to include outcomes of such studies. As he stated, it is not possible in a mixed method design to just ‘pull out’ and present only the quantitative components; rather, each part of the study is interdependent on the other parts in contributing to the findings.


RECEIVED AND ACCEPTED 8TH JULY 2004

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Dr Jane Edwards was granted a year of sabbatical leave in 2003/4; spending part of the year as a guest professor at the Universität der Künste in Berlin, and then as a visiting member of the Faculty of Music, University of Cambridge, UK, where she was also a By-Fellow of Churchill College. Dr Edwards holds a full-time senior academic post as Director of the two year coursework Master of Arts programme in Music Therapy at the Irish World Music Centre (www.iwmc.ie); the only programme in Ireland that provides a professional qualification in music therapy. She was the inaugural lecturer and co-ordinator for the music therapy undergraduate and postgraduate courses at the University of Queensland from 1993-1999, which are now co-ordinated by Dr Felicity Baker, and she established the music therapy programme at the Royal Children’s Hospital in Brisbane in 1993, which continues under the direction of Jeanette Kennelly. She co-authored the original submission for the Sing & Grow project at Playgroup Queensland, directed by Vicky Abad since 2001, and continues to serve as a consultant to that programme. She is co-editor of the Country of the Month column for Voices (www.voices.no), and assistant editor of the Australian Journal of Music Therapy, and also serves on the Editorial Board of Music Therapy Perspectives. She is Chair of the Commission for Government Accreditation with the World Federation of Music Therapy. Music therapy articles authored by Dr Edwards have appeared in a number of journals including the Australian Journal of Music Therapy, New Zealand Journal of Music Therapy, British Journal of Music Therapy, Music Therapy Perspectives and Arts in Psychotherapy. She also has a paper forthcoming in Nordic Journal of Music Therapy.