

THE DEVELOPMENT OF A RESEARCH TEMPLATE
TO ASSIST MUSIC THERAPY CLINICIANS
IN EVIDENCE-BASED PRACTICE

BY

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Abstract

One of the most prevalent trends in healthcare today is the movement toward evidence-based practice. Evidence-based practice requires that health care providers base their treatment decisions not only on their own professional experiences and their client's needs and values, but also on current quality research outcomes. The American Music Therapy Association has been promoting evidence-based practice among its clinicians through a research initiative created to encourage the use of scholarly research within the profession.

The purpose of this study was to develop a research template to assist music therapy clinicians in accessing clinically relevant information from an individual research study and evaluating the quality of that study to participate in evidence-based practice. Development of the research template occurred in three steps. First, the researcher consulted current literature on the topic of evidence-based practice and research to determine content and design of the template. Next, a focus group of five individuals known for their clinical and research expertise in music therapy examined the template and provided suggestions for improvement, as well as validity for the need for such a template in the profession. Finally, a sample group of music therapists completed an Initial Questionnaire ($N=14$), the research template on an assigned article and two participant-selected articles ($n=12$), and a Follow-Up Questionnaire ($n=11$). Thirty templates were completed across five different research articles. Responses on the questionnaires and

completed research templates were analyzed to determine clarity of the individual items and the overall function of the template and were used to make necessary modifications to the template itself.

Results indicate that the designed research template is useful for clinicians consulting the research literature to inform their clinical practice decisions and to determine the level of quality of a study. Implications for the role of the template in educational and continuing music therapy education settings to promote evidence-based practice in the field of music therapy are discussed.

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Chapter 1

Introduction

One of the most unique features of music therapy is that it is beneficial in the treatment of most areas of human functioning. In fact, music therapy is often referred to as an “umbrella” therapy because of its ability to target multiple domains. Specifically, a music therapist may develop cognitive, communication, social, physical/motor, sensory, behavior, and/or emotional treatment goals for children and adults with special needs. The broad focus of treatment for a variety of needs makes music therapy attractive to many who are interested in becoming trained in the profession, as well as to those who seek treatment. This extensive nature of the discipline, however, can make research-informed practice both time consuming and tedious, as it requires the clinician to examine current research literature and implement related findings into treatment considerations. This same task becomes even more overwhelming for clinicians who provide treatment to multiple individuals with differing diagnoses and needs.

To inform one’s practice through current research, now referred to as “evidence-based practice,” a clinician must make a concerted effort to obtain and evaluate research literature and then to translate related research findings into treatment interventions. Although a topic of much debate among music therapists, research based practice is essential if the profession is to gain and maintain credibility within the healthcare setting. In fact, it is necessary simply to fulfill the

claim made in the definition of music therapy established by the American Music Therapy Association (AMTA) in 2005. This definition states, “Music therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program” (AMTA, n.d.). The use of the term “evidence-based” within this definition reflects the values and goals of the medical community over the past 20 years.

The profession of music therapy is not alone in touting the term “evidence-based” as a description of the care provided by its practitioners. In their 2005 article, Steinberg and Luce substantiated the common use of this term in stating, “If you are doing almost anything related to health care today, being ‘evidence-based’ is de rigueur. Even when it is not obligatory to do so, claiming to be ‘evidence-based’ conveys a measure of credibility nowadays that is valuable to have” (p. 80). Indeed, as health care consumers now have unlimited access to information via the internet, and as insurance companies and other third party payers restrict services deemed as reimbursable, it is necessary to establish through current research that the treatment provided is the most effective and efficient available.

The concept of evidence-based practice developed out of the movement toward establishing evidence-based medicine. Thus, to gain a full understanding of evidence-based practice (EBP), an awareness of the etiology and an

understanding of the principles of evidence-based medicine (EBM) are necessary. Although the term “evidence-based medicine” did not emerge in the literature until the 1990s, the introduction of its fundamental elements is often attributed to Dr. Archie Cochrane whose landmark text, *Effectiveness and Efficiency: Random Reflections on Health Services*, was published in 1971. It is in this document that Cochrane asserted the importance of research, specifically the randomized controlled trial (RCT), in determining the most effective and efficient treatment available for a particular ailment or health concern (Cochrane, 1971). Thus began the trend of conducting controlled trial studies and the task of evaluating the quality of RCTs, as well as numerous other studies utilizing a variety of research designs, in an endeavor toward applying evidence-based principles in practice. Often, the RCT is considered the highest quality of evidence available, second only to a systematic analysis of RCTs. In an effort to conduct the necessary systematic reviews to inform health care practice, several organizations have developed centers for the analysis, compilation, and distribution of research (Agency for Healthcare Research and Quality, November 2008; Cochrane Collaboration, n.d.). As a result, health care providers in a variety of fields can now access summaries of reviews that present evidence for treatments considered best practice.

Music therapists worldwide have recognized the importance of providing evidence of efficacy and, as a result, a handful of systematic studies on music

therapy as an effective treatment practice have been conducted (Gold, Heldal, Dahle, & Wigram, 2005; Gold, Wigram, & Elefant, 2006; Maratos, Gold, Wang, & Crawford, 2008; Standley, 1986). The outcomes of these systematic reviews have been mostly positive and have provided some support for music therapy in the treatment of autism, schizophrenia, and depression, as well as in other areas. However, music therapists have for years based their practice on the belief that music therapy treatment results in positive desired outcomes. Although beneficial to health care providers and individuals deciding whether to prescribe or utilize music therapy as a form of treatment, the results of these studies do little to benefit music therapy practitioners seeking to inform their practice decisions and treatment interventions through research.

A related topic familiar to music therapists concerns the accessibility of research to clinicians. A few attempts have been made to determine if and to what extent clinicians consult the research literature to inform their practice. Findings suggest that there is, indeed, a gap between research and practice and that one of the primary reasons for this gap is the reported inaccessibility of research to music therapy practitioners with a limited knowledge of statistics and academic research jargon (Chang, 2008; Vink & Bruinsma, 2003). If music therapy practitioners do not, in fact, access current research to inform their clinical decisions, the claim that music therapy is the use of “evidence-based” treatment interventions cannot

be entirely true, nor can it be substantiated within the circle of therapeutic disciplines.

The notorious gap between research and practice challenges the claim made by the AMTA that music therapy is the use of evidence-based interventions in treating symptoms from a variety of diagnoses. Two primary issues may be responsible for this predicament: (a) music therapy clinicians do not utilize current research to inform their music therapy practice and (b) music therapy researchers often write their research findings in a manner that is difficult for clinicians, who do not have the requisite research background, to understand and translate into practice. One approach to solving this impasse may revolve around implementing higher education standards for clinicians, including more research and statistics courses for students or requiring a master's level degree for entry-level music therapy practice. Another possible solution for the identified dilemma is the modification of the research literature that is published. Both of these solutions would take years to come to fruition, however, and the results of both would take even longer to perceive. It is certain that if the research were readily accessible to the music therapy clinician and if the clinician adapted treatment interventions accordingly, therapeutic outcomes achieved through informed practice would indeed result in the advancement of music therapy as an evidence-based profession.

The desired outcome for this study was the construction of a “bridge” for the gap between research and clinical practice that will yield results sooner than the aforementioned solutions. Thus, in an effort to promote evidence-based practice principles into music therapy treatment decisions, the purpose of this study was to develop a template to guide music therapy clinicians in accessing clinically relevant information from and evaluating related research to inform clinical practice. In addition, the template was evaluated by a focus group of music therapists with expertise in both research and clinical practice and tested by a sample group of music therapists with varying educational backgrounds and levels of experience.

Chapter 2

Review of Literature

The term “evidence-based” is, indeed, prevalent within the health care setting today. If there is any doubt, a quick glance at the current medical and allied health research literature would remove it. Medical doctors, physical therapists, occupational therapists, speech-language pathologists, music therapists, and many others, have begun to describe their treatment interventions as evidence-based. In fact, the term is so fashionable that it has now begun to influence techniques and strategies in non-health care settings such as education (Brozo & Flynt, 2008) and public management (Meier & O’Toole, 2009). But what does it really mean to say that the prescribed treatment interventions are evidence-based? To answer this question, it is necessary to review the origin and development of “evidence-based medicine” as it relates to current “evidence-based practice.”

The Origin and Development of Evidence-Based Medicine

As with most established theories and concepts, the thoughts and beliefs behind evidence-based medicine have been traced by some to practices of ancient cultures throughout history (“Evidence-based medicine,” 2008; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). However, most authors on the subject will credit Archie Cochrane, Scottish epidemiologist, with developing the modern concept behind evidence-based medicine, which was made popular

through his landmark text *Effectiveness and Efficiency: Random Reflections on Health Services* (“Evidence-based medicine,” 2008; White, 1997).

In the early to mid 1900s, it was generally accepted for medical decisions to be based upon the medical education, clinical experiences, and continuing education opportunities of the physician. A doctor would gather the necessary information about a patient, as well as related experiences and literature findings to determine the prescribed course of treatment (Eddy, 2005). It was not until the 1960s that this process was openly examined and criticized. It became evident that much of the published medical literature contained suggestions for treatment based upon expert opinion, which was determined primarily by “medical training, local custom and opinions, as well as their own clinical experience” (Steinberg & Luce, 2005, p. 81). Archie Cochrane was one who challenged this expert opinion as a means for providing evidence of treatment benefit and decisions, as it “varies in value with the ability of the clinician and the width of his experience” and “because there is no quantitative measurement, no attempt to discover what would have happened if the patients had had no treatment, and every possibility of bias affecting the assessment of the result” (Cochrane, 1971, p. 20-21).

It was out of his belief that expert opinion did not provide adequate evidence for the efficacy of accepted medical treatments that Cochrane encouraged the use of the randomized controlled trial (RCT) study. Cochrane asserted that, with two groups of participants, the RCT would make it possible to

accurately test a hypothesis and determine whether one treatment is, indeed, more effective than another. In addition, to eliminate the possibility of error due to human bias, he promoted the double-blind randomized controlled trial study (Cochrane, 1971).

In the 1970s and early 1980s, the medical profession as a whole encountered a variety of appeals for a revamping of the traditional medical decision making process. Along with Cochrane's appeal for physicians to place more emphasis on research when prescribing medical treatments, papers were being published that exposed common, but disturbing medical practices (Eddy, 2005). In 1973, Wennberg and Gittelsohn published a paper describing, among other issues, the variations in health services provided to patients in different areas, suggesting a lack of uniformity, as well as uncertainty of the effectiveness of interventions. This paper was followed by another which further discussed the noteworthy variations in patient care and presented a strong case for improving outcomes and decreasing uncertainty of treatments by examining medical procedures and determining and setting standards in medical care (Eddy, 1984). Finally, in 1987, a paper was published which discussed discrepancies concerning the conditions under which physicians were conducting a particular procedure. Seventeen percent of the cases in which this particular procedure was used were determined to be inappropriate uses of the procedure by an expert panel of physicians (Chassin, Kosecoff, Solomon, & Brook, 1987). These were just a few

of the papers published in the 1970s and 1980s, that, through exposing disturbing information on the inconsistencies in medical care, stimulated a desire for change and initiated progress toward more certain and systematic care within the medical field.

The 20 years of studies and publications that ensued after Archie Cochrane's appeal for medical decisions to be based less on expert opinion and more on evidence resulting from systematic and controlled studies resulted in a field ready for change. It was at this time, in 1990 and 1992 respectively that the actual terms "evidence-based" and "evidence-based medicine" emerged in the literature, although the fundamental concept remains attributed to Cochrane (Eddy, 2005; "Evidence-based medicine," 2008; Evidence-Based Medicine Working Group, 1992). Perhaps the most widely known and commonly quoted definition of evidence-based medicine was published in the *British Medical Journal* in 1996, by David L. Sackett et al. This definition, although altered and "improved upon" by numerous subsequent authors remains the standard for providing a clear explanation of evidence-based medicine. It states:

Evidence based medicine is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research. (p. 71)

It is this definition of evidence-based medicine, or some variant thereof, that both researchers and clinicians refer to when considering the meaning of the term “evidence-based” in their own practices. It sets forth the challenge for clinicians to examine the research literature and evaluate the evidence presented within that literature for the purpose of making the best possible evidence-based treatment decisions.

Evidence-Based Research in Medicine

Indeed, systematic analyses of RCTs, supporting the efficacy of treatment interventions, have been deemed the highest possible level of evidence upon which medical decisions might be made. The RCT has become the “gold standard” design for a research study because of its “rigorous scientific design and prespecified endpoints” (Claxton, Cohen, & Neumann, 2005, p. 94). It seems that, while evidence-based medicine evolved out of the need for more consistency in medical treatment approaches and outcomes, efforts have now been developed to establish some uniformity in determining the quality of evidence based upon the design of the study. In an attempt to determine what the “best available external clinical evidence” (Sackett et al, 1996, p. 71) truly is, the Centre for Evidence-Based Medicine (CEBM), based out of Oxford, published a set of specifications for evaluating the quality of evidence (CEBM, n.d.). While a detailed presentation and analysis of these levels is not necessary for this study, a brief introduction is beneficial to understanding the core components of evidence-based research,

medicine, and eventually practice. The information presented in the following table is adapted from the “therapy” component of the Oxford Centre for Evidence-Based Medicine Levels of Evidence (n.d.).

Table 1

Oxford Centre for Evidence-Based Medicine Levels of Evidence

Level	Information Source/Type of Study
1a	A systematic review of randomized controlled trial studies in which homogeneity of results among studies has been established.
1b	An individual randomized controlled trial study with a narrow confidence interval.
2a	A systematic review of cohort studies in which homogeneity of results among studies has been established.
2b	An individual cohort study; and a “low quality” randomized controlled trial study.
2c	“Outcomes” research; and ecological studies.
3a	A systematic review of case-control studies in which homogeneity of results among studies has been established.
3b	An individual case-control study.
4	Case series; and “poor quality” cohort and case-control studies.
5	“Expert opinion without explicit critical appraisal, or based on physiology, bench research, or ‘first principles’.”

Level 1a indicates the highest quality of evidence, while level 5 indicates the least influential source for evidence. The consensus appears to be that the highest level

of evidence possible comes from a systematic analysis of quality RCTs, followed by RCTs, followed by other studies with fewer participants and less control.

Over the past few years, a variety of organizations have undergone the challenge of evaluating the quality of research to determine when evidence is sufficient to inform medical decisions. The Cochrane Collaboration, established in 1993, named for Archie Cochrane, organizes systematic reviews of research studies and makes the results of these reviews available to physicians, as well as the general public (Cochrane Collaboration, n.d.). An initiative to improve the quality of and clarity in reporting the results of RCTs resulted in The Consolidated Standards of Reporting Trials (CONSORT) statement, developed by an international group of skilled clinicians and researchers (Moher, Schulz, & Altman, 2001). The CONSORT statement provides a checklist of items for researchers to consider while conducting RCT studies and reporting research outcomes. In addition, revisions to the original CONSORT statement have been made to clarify and to elaborate upon the elements of the original list of requirements for quality reporting of RCTs (Altman et al., 2001). Likewise, the Scottish Intercollegiate Guidelines Network (SIGN) was established for the purpose of improving health care for Scottish patients “by reducing variation in practice and outcome, through the development and dissemination of national clinical guidelines containing recommendations for effective practice based on current evidence” (SIGN, n.d., ¶ 1). In America, the Agency for Healthcare

Research and Quality (AHRQ) has established and oversees 12 evidence-based practice centers to assess and evaluate research and to develop and disseminate reports related to health care issues. The overall mission of the AHRQ is “to improve the quality, effectiveness, and appropriateness of health care by synthesizing the evidence and facilitating the translation of evidence-based research findings” into health care practice (AHRQ, 2008, “Overview”). A handful of national and international organizations have been developed for the purpose of establishing guidelines for quality systematic research and for disseminating that research to improve healthcare outcomes by decreasing variation in treatment outcomes. An extensive explanation of these organizations and each of their guidelines is beyond the scope of this paper; however, awareness of the many efforts toward establishing evidence-based medicine practices is essential for a complete understanding of the impact it has had on modern health care.

Evidence-Based Practice as it Relates to Evidence-Based Medicine

As the idea behind evidence-based medicine gained popularity, the need for a method for systematic analysis of research arose. Likewise, in the effort to analyze and evaluate the research, the need for research guidelines surfaced. Now, both physicians and other healthcare providers look for ways to connect the research to practice; hence, the term “evidence-based practice.” Greenhalgh

(2006) summarizes the relationship among these evidence-based elements nicely in this quote.

If you follow an evidence-based approach to clinical decision making, all sorts of issues relating to your patients ... will prompt you to ask questions about scientific evidence, seek answers to those questions in a systematic way and alter your practice accordingly. (p. 1)

As often occurs when old traditions and paradigms are challenged, responses to this “new” way of practicing medicine have been varied. Many have met the concept and challenge of evidence-based medicine with enthusiasm, while others have responded to it with criticism and trepidation. Some fear that embracing evidence-based medicine will result in what many refer to as “cookbook medicine” rather than the practice of medicine as an art (Sackett et al., 1996; Timmermans & Mauck, 2005). However, proponents of the concept continue to emphasize that consistent and judicious application of new evidence, along with clinical expertise will only serve to improve treatment outcomes.

Individual opinions aside, “the systematic translation of evidence-based research findings, tools, and information into practice is critical to improving the quality of our nation’s health” (Sussman, Valente, Rohrback, Skara, & Pentz, 2006, p. 7). At this point in the long journey toward evidence-based health care, the real challenge is the translation or implementation of research outcomes into everyday practice. It is possible that once outcomes of research are determined, it

might still take up to one or two decades for those findings to become evident in everyday patient care (Sussman et al., 2006). The reasons for this are difficult to pinpoint, however, a few of those commonly implicated are the increasing amount of time for a study to be reviewed, accepted, and then published, often after extensive wait time, the limited time that physicians and therapists have to review current research in the midst of busy treatment schedules, and limited knowledge of statistics and research terminology making it difficult for clinicians to access and evaluate the information in the research literature. Care providers in a variety of disciplines have acknowledged the desire to improve patient care through an approach toward evidence-based research and practice and have followed through by implementing the necessary elements within the facility (Rosenfeld et al., 2000). In addition, leaders of more specialized disciplines within the healthcare arena have acknowledged the need and desire for more evidence-based focused research and practice.

Proponents for the use of evidence-based research in complementary and alternative medicine assert that treatment interventions need to be “validated by stringent research before they can be reliably integrated into traditional Western medicine” (Chiappelli, Prolo, & Cajulis, 2005, p. 457). Although many complementary medicine disciplines often engage in scientific research to substantiate treatment interventions, the research is frequently viewed as inadequate or unreliable. Thus, to truly participate in evidence-based research and

practice within the healthcare setting, more emphasis ought to be placed on multiple scientific studies that provide evidence of efficacy as the result of systematic analyses of related studies (Chiappelli, Prolo, Rosenblum, et al., 2006).

The highest quality evidence available should be consulted when determining treatment decisions; however, other types of research contribute information to the treatment process as well. Perhaps the most common misunderstanding of evidence-based medicine and related excuse for not agreeing with its tenets is the concept that the only evidence upon which clinical decisions should be based is that which results from large RCTs or meta-analyses of RCTs. In reality, supporters of evidence-based medicine, and now evidence-based practice, generally agree that evidence for different aspects of treatment comes from a variety of sources. For example, cross-sectional studies provide the necessary evidence for determining the accuracy of diagnostic instruments and follow-up studies are helpful in estimating a prognosis for a particular treatment (Sackett, et al., 1996). “And if no randomized trial has been carried out for our patient’s predicament, we must follow the trail to the next best external evidence and work from there” (Sackett, et al., 1996, p. 72).

Evidence-Based Research and Practice in Music Therapy

The American Music Therapy Association (AMTA) has clearly demonstrated knowledge of and belief in the importance of research for improving treatment outcomes, as well as providing validation of efficacy within

the healthcare arena. The association maintains a research committee that encourages scholarly research within the discipline, oversees advances in the area of research, and educates members through research poster sessions and general sessions at national and regional conferences. It also encourages research activity through the allocation of funds from the Arthur Flagler Fultz Research Fund to music therapists wishing to conduct clinical research. In addition, the association's research initiative has been a focal point of the past few national conferences. Finally, membership in the association guarantees delivery of each published issue of the profession's two peer-reviewed research journals, *Journal of Music Therapy* and *Music Therapy Perspectives*. Indeed, for years music therapists have devoted their time and talents to researching the effects of music therapy in treating individuals with a variety of diagnoses and needs.

Music therapists have recognized not only the importance of research in confirming the benefit of music therapy treatment to many with special needs, but have also recognized the importance of being evidence-based in today's healthcare system. The 2005 definition of music therapy states that "music therapy is the clinical and evidence-based use of music interventions to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program" (AMTA, n.d.). If music therapists, however, are to authenticate this statement in the same manner expected of professionals in other disciplines, much

work is still to be done. To be sure, positive strides are being made as some systematic analyses of music therapy in the treatment of individuals with autism, depression, schizophrenia, as well as other disorders, have been conducted (Gold, Heldal, Dahle, & Wigram, 2005; Gold, Wigram, & Elefant, 2006; Maratos, Gold, Wang, & Crawford, 2008). Nickel et al. (2005) presented the positive results of three RCT studies on the efficacy of music treatment in the reduction of chronic pain, treatment of children with migraine headaches, and patients with tinnitus. They presented these well-designed studies as a small step toward music therapy as an evidence-based intervention, but also purport that “more outcome studies of effectiveness and efficacy of treatment are necessary” (Nickel et al., 2005, p. 291). These studies were three of many that were conducted at the German Center for Music Therapy Research where “efforts of the last ten years have centered around clinical effectiveness and efficacy studies, in which manualized music therapy concepts for defined patient populations have been evaluated” (Hillecke et al., 2005, p. 284). Simply stated, even with these research accomplishments there is need for more controlled studies with larger samples to further the profession through research outcomes informing the clinical decision making process.

The conclusions of many studies that investigate the impact of music therapy continue to expose the fact that there simply are not enough experimental studies to corroborate the findings in a manner that make them valid in today’s

healthcare system. Hilliard (2005) asserts that music therapy in palliative care is expanding and that there are numerous qualitative studies reporting its benefit.

However, he also states,

Although music therapy is an established allied health profession and is used with increasing frequency in the treatment of those with a terminal illness, there is a real dearth of empirical research literature supporting the use of music therapy in end-of-life care. (Hilliard, 2005, p. 173)

In addition, Accordino, Comer, and Heller (2007) identified many shortcomings in the research they reviewed on music therapy in the treatment of individuals with autism. They found that there are many case studies; however, many of these case studies report no formal analysis of the results. Other identified problems in many of the studies on music therapy and autism include the lack of control, poor research design, and the absence of a control group. They suggest that future researchers on the topic consider designing comparative outcome studies, which would provide a comparative analysis of outcomes in music therapy treatment to outcomes of treatment with no music therapy. So even though there seems to be adequate music therapy research for making initial assertions as to the efficacy of music therapy, the profession is lacking in the types and numbers of studies necessary to boast evidence-based status, except in a few select areas of music therapy practice.

At this point, it is clear that there is disagreement about whether music therapy can really lay claim to the “evidence-based treatment” designation. Steinberg and Luce (2005) call for the judicious use of the term evidence-based as currently “there is much variation in the validity of health care-related decisions, judgments, and recommendations that claim to be ‘evidence-based’” (p. 91). Unfortunately, the popularity of the term has resulted in its overuse and misuse to the detriment of true evidence-based practice. It is necessary to keep in mind the definition of evidence-based medicine as the “conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett et al., 1996, p. 71). The “fundamental ... core idea” behind evidence-based medicine is “that what happens to patients should be based, to the greatest extent possible, on evidence” (Eddy, 2005, p. 9).

One of the greatest challenges to maintaining the integrity of evidence-based practice as it was originally conceived is the evaluation of research. The presence of a study within a research journal, even a refereed journal, does not mean, unfortunately, that the study was methodologically sound, nor that it was well-conducted or that the data were accurately analyzed (Steinberg & Luce, 2005). Thus, before awarding credibility to the article, a reader must critically review it to determine the quality of both the study and the results (Steinberg &

Luce, 2005). The evidence-based practice center located at the RTI International-University of North Carolina recently conducted a study to evaluate the guidelines or approaches used to evaluate the quality of the evidence presented in individual studies. This study found 121 different methods for determining the quality of evidence; however, only 19 of those methods met the standards previously set by the evidence-based practice center (Lohr, 2004). Although there is consensus on the general hierarchy of the quality of evidence based on the design of a study, it cannot be assumed that because a study's design is a randomized controlled trial it provides quality evidence. Rather, a study that is well-designed and carefully implemented will provide a higher quality of evidence than one that is not carefully designed, regardless of the type of design (Steinberg & Luce, 2005). Thus, in keeping with the original concept behind evidence-based medicine, all health care decisions ought to be based on evidence provided by the highest quality studies available, clinician experience, and patient values and needs.

In general, music therapy clinicians do rely upon their clinical experiences, and they do consider their patients' values and needs when making treatment related decisions. The challenge in achieving evidence-based practice becomes evident in the area of accessing the research literature. There exists today a "gap between theory, research, and practice" (Hillecke, 2005, p. 277) that hinders the advancement of, not only the profession of music therapy, but also a variety of disciplines (Eddy, 2005). Research findings confirm that there is,

indeed a disconnect between research and practice and results suggest that one of the primary reasons for this gap is the reported inaccessibility of research to music therapy practitioners with a limited knowledge of statistics and academic research jargon (Chang, 2008; Vink & Bruinsma, 2003).

One possible solution to closing the gap between research and clinical music therapy practice is to require more coursework in research and statistics in the degree programs. Another is to establish the graduate degree as the entry level requirement for practice in music therapy. Finally, a solution may be found in setting additional guidelines for researchers to insure that the articles they publish are written in a manner that directly informs clinical practice. All of these solutions are possibilities; however, they would take years to come to fruition in the music therapy treatment setting.

Each healthcare field has its own concerns related to the best strategy for evaluating and implementing current research into clinical practice (“Evaluating evidence,” 2005). The most effective long-term solution for the field of music therapy may be the slight modification or expansion of how researchers report their findings. At the World Congress of Music Therapy in Brisbane, Australia, Tony Wigram (2005) discussed the fact that only two of thirteen articles published in the *British Journal of Music Therapy* and two of thirty-one articles published in *Music Therapy Perspectives* between the years of 2001 and 2004, “described clinical method in detail.” Although studies generally include a

detailed method for the research design, rarely is such care taken in outlining the clinical techniques employed within the study. This information is critical, however, for clinicians who desire to provide evidence-based treatment within their practices. Thus, this is one element that may be considered by researchers for the advancement of evidence-based treatment decisions in music therapy practice. Moreover, the demand for evidence-based practice must also be met by music therapy practitioners (Hillecke et al., 2005).

In his appeal for a “new research” and a new approach to research within the field of music therapy, in which the research might have clinical relevance, Aigen (1991) described the traditional research of the time as a “fledgling discipline’s attempts to seek validation in the external society” (p. 106). Today, in 2009, almost 60 years after the establishment of music therapy as a profession, much has been accomplished in the research arena to assist in the advancement of music therapy in the healthcare setting. However, in direct contrast to Aigen’s statement, this researcher maintains that if the profession is to continue to excel as an allied health profession, music therapists must be involved in high quality research that will benefit those with whom they work and that will achieve “validation in the external society,” including other health care providers and reimbursement agencies.

One might argue that modeling music therapy research and practice after medical research and practice is not feasible, or even desirable, since music

therapists generally seek to provide treatment for complex behaviors and skills rather than specific physical illnesses and diseases. However, the application of evidence-based principles has been embraced by a variety of “non-medical” healthcare disciplines. Therefore, it is prudent for the profession of music therapy to move forward within the healthcare arena by meeting the challenge of providing evidence-based treatment.

In light of this, it is wise for the profession of music therapy to examine the successes of other therapeutic disciplines in regard to evidence-based research and practice. Many of the “therapeutic” disciplines, including physical therapy and occupational therapy, have demonstrated the incorporation of evidence-based principles and concepts into their research literature. In addition, the discipline of speech-language pathology has demonstrated through its literature the desire for clinicians to consider the research when making treatment decisions. The profession of music therapy is similar to speech-language pathology in that both disciplines focus on the treatment of complex behaviors and skills; speech-language pathology in the area of communication skills and music therapy in multiple areas of functioning. Therefore, it is reasonable to investigate the many ways the professional organization of speech-language pathology responded to the demand for evidence-based practice and to explore how clinicians were informed about and encouraged to provide evidence-based treatment.

Evidence-Based Research and Practice in Speech-Language Pathology

The professional organization for the treatment of communication disorders, the American Speech-Language-Hearing Association (ASHA), has recognized the importance of the healthcare trend toward evidence-based practice and has made important strides toward meeting that challenge. A brief history of the founding of the profession of speech-language pathology will provide both background information and illuminate similarities to the profession of music therapy.

Speech therapy was first explored in America in the mid to late 1800s when individual professionals, educators, and doctors began to take a particular interest in treating speech disorders. *The Voice*, which may have been the first professional speech journal in America, was published as early as 1879 and continued through 1892. In the early 1900s, special interest groups began to form and in 1914, the first graduate program was developed at the University of Wisconsin (Duchan, 2002). Speech therapy was declared a profession in 1925, with the formation of the American Academy of Speech Correction, by a group of 25 individuals who had been a part of a special interest group within another professional organization. The American Academy of Speech Correction (AASC) established criteria for membership within the organization and began to develop diagnostic tools and tests for speech disorders. Eventually, after several name changes, the AASC became the American Speech-Language-Hearing Association

(ASHA) that currently governs the profession (Duchan, 2002). Demographics of the profession at the end of 2007, just 82 years later, indicated more than 115,000 speech-language pathologists providing services in the United States to individuals with communication disorders (ASHA, 2007), and in 2009, that number had already increased to 135,000 (J. Wegner, personal communication, April 2009).

In view of today's healthcare trends, the American Speech-Language-Hearing Association (ASHA) has recognized that the term evidence-based is quickly becoming a key concept in the healthcare community. In response, ASHA has demonstrated its commitment to advancing the profession through updating its approach to quality care and maintaining its standing within the medical community by staying informed of these important initiatives in healthcare. Further, members of the Research and Scientific Affairs Committee, developed by ASHA, recognize that clinicians need to be educated in making evidence-based decisions in their practices to continue providing quality services to clients, maintaining and "increasing accountability" to other health professionals, and providing service rationales to reimbursement and funding agencies (ASHA, 2004, p. 7). These leaders in the association have researched available literature on evidence-based tenets and proposed research guidelines for analyzing and conducting research to its clinicians. These guidelines detail the concepts behind evidence-based practice, quality research, and provide opportunities for further

education in the profession (ASHA, 2004). It supports the idea that the opinion of the expert no longer suffices as the best judgment for treatment as oftentimes, recommendations not supported by current research in the field do not yield the most positive results. The Scottish Intercollegiate Guideline Network (SIGN) has developed and made available a detailed handbook suggesting the scientific evaluation of research studies for determining the quality of and ranking their resulting evidence. It proposes that there are five levels, ranging from level 1a (highest/most credible) to level 4 (lowest/least credible), on which to rank research (SIGN, n.d.). After examination of these and other guidelines, ASHA formulated five major categories within the evidence-based literature that speech-language pathologists can use to rate the quality of research in determining best evidence: (1) Independent confirmation and converging evidence, (2) Experimental control, (3) Avoidance of subjectivity and bias, (4) Effect sizes and confidence intervals, and (5) Relevance and feasibility (ASHA, 2004). Brief descriptions of these five themes, summarized from the 2004 ASHA publication follow:

1. Independent Confirmation and Converging Evidence

Although it is possible for a single research study to be extremely controlled and well-executed, as well as provide evidence of effective treatment, it is unusual for one “study to provide the definitive answer to a scientific or clinical question” (ASHA, 2004, p. 2). “When the question concerns treatment

efficacy, the highest evidence ranking goes to well-designed meta-analyses that summarize results across a number of scientifically rigorous studies” (ASHA, 2004, p. 2). It is suggested that a number of well-designed quality studies be conducted so that the evidence of all of these studies can be compiled to provide sufficient evidence of the best possible course of treatment.

2. Experimental Control

The element of experimental control is of utmost importance in rating the quality of a single study. The various types of research designs and elements of research studies are listed below from the highest quality and most controlled, to the lowest quality.

1. Randomized controlled trial – Experimental studies
 - a. prospective design more desirable than retrospective
 - b. random assignment of patients improves reliability and validity of study results
2. Quasi-experimental studies - Lack random assignment
 - a. cohort studies
 - b. case-control designed studies
3. Non-experimental designs
 - a. correlational studies
 - b. case studies (one subject/patient only)
 - c. case series

4. Expert opinion and statements of belief

It is important to understand, however, that even non-experimental studies, such as well-designed quasi-experimental and case studies can be of value in the beginning stages of researching clinical treatment outcomes. Information from non-experimental studies should be considered as important in laying the foundation for studies with larger groups. That said, the greatest form of evidence in evidence-based practice and clinical decision making is that which results from the systematic analysis of several well-designed scientific studies.

3. Avoidance of Subjectivity and Bias

Subjectivity and bias in research can be avoided through incorporating techniques into a well-designed study to ensure that investigators, patients, observers, and others involved in the research project are kept from information that could result in unintentionally influencing the results of the study. This may be difficult in research that involves clinician-patient interactions in behavioral treatments.

However, even in such studies a number of steps can be taken to minimize the potential for bias, such as ensuring that treatment effects (positive or negative) are measured not by the clinician, the investigator, or a family member but rather by independent examiners who rate patients without knowing their treatment assignments. (ASHA, 2004, p. 4)

It is also important to include all patients, whether they completed the study or not, and whether their results were positive or not, in the final analysis of their group. This is to avoid overly positive outcomes due to exclusion of those who do not finish the course of treatment for any reason.

4. Effect Sizes and Confidence Intervals

Each study conducted and published ought to report not only the statistical significance of the results, but also the effect size and confidence intervals. The larger the sample, the better the confidence interval.

5. Relevance and Feasibility

How relevant research truly is and how feasible it is in common treatment settings also influence the quality of scientific evidence. In other words, the most relevant research outcomes will be those that were conducted with patients for whom the treatment is designed and the most feasible evidence will be that which is the most time and cost efficient.

ASHA does emphasize that although the concept of evidence-based practice is not perfect and may be difficult to maintain in light of more “complex behavioral conditions such as communication disorders” (2004, p. 6), the exercise of applying its principles might still yield improved clinical outcomes. In fact, awareness of the principles of EBP by researchers and practitioners in speech-language pathology and audiology seems likely to improve substantially the quality of evidence available to support clinical decisions,

one step in ongoing efforts to provide optimal care to people with communication disorders. (ASHA, 2004, p. 6)

The research committee for the American Speech-Language-Hearing Association has examined, summarized, and disseminated information on the topic of evidence-based practice to clinicians in the profession. The information has been reported in an easy to access format and made available via the internet through the ASHA website. In addition, researchers have published studies on how to determine the questions for a literature search, locate the necessary research studies via databases on the internet, and obtain the necessary information within a specified amount of time to inform clinical practice (Brackenbury, Burroughs, & Hewitt, 2008; Ratner, 2006). These guidelines and suggestions, specific to the ASHA, serve as a positive example to other disciplines for educating clinicians on the basics of evidence-based research and practice.

Conclusion

To date, much literature has been published on the topic of evidence-based practice and the evaluation of evidence presented in research. Information has been presented in hard copy, electronic format, and professional workshops. Literature has provided explanations of and rationales for evidence-based practice, descriptions and summaries of the levels of evidence assigned to studies,

guidelines for determining the quality of evidence within a study, and suggestions for consulting the research in the few spare moments between client sessions.

In addition to the presentation of this information, it is necessary to provide clinicians with the tools to begin developing skills for the practical application of their new knowledge. Some have published books on the topic with forms or checklists to guide the clinician in evaluating research and in designing quality studies (Dollaghan, 2007; Greenhalgh, 2006). This researcher suggests that much of the published research literature and many of the professional articles and books on the topic, although informative, may be overwhelming to many clinicians. They require time, determination, and a fundamental knowledge of research jargon to understand and certainly to incorporate into their own clinical practice. However, presently there are no available tools known by the researcher designed to assist busy clinicians in the process of promptly accessing and evaluating the research to inform their clinical decisions.

The purpose of this study was to develop a tool that can be used by clinicians, who may have minimal research knowledge, to access and evaluate related research literature and to make informed and appropriate treatment decisions based on that literature. With such a tool, music therapists might be able to consult the literature when making clinical decisions and present their findings in a manner that maintains the integrity of the concept of evidence-based practice. The accurate and discriminating use of this term by music therapists and the

professional organization will serve to maintain the integrity of the music therapy profession within the healthcare setting.

The primary intended outcome of this study was a template to guide clinicians, without an extensive background in research, in:

1. Identifying clinically relevant information within a research study necessary for informing clinical practice and
2. Evaluating the level of quality of the evidence presented in the article based upon the design of the study.

Upon completing the template on a particular research study, the intention is for the clinician to be able to make informed clinical decisions and to potentially understand that study's individual role in providing adequate evidence for participating in evidence-based practice.

In order to assist in developing a template that meets specific needs within the profession and ensuring that clinicians will benefit from it, the template was initially evaluated by a focus group of music therapists known for their expertise in clinical work and research in music therapy. Responses and suggestions by members of the focus group were used to modify and improve the designed template. To test the efficacy of the template itself, a sample group of music therapists with varying levels of experience and education were then asked to complete the template on three clinical research articles. Data obtained from the completed templates and associated questionnaires were used to guide the

researcher in modifying the template as necessary. The final outcome was a revised research template designed to guide clinicians in accessing and evaluating the research, making informed clinical decisions, and subsequently participating in evidence-based practice.

Research Questions

Through the responses provided by a focus group on the initial template and from the completed questionnaires and research templates completed by a sample group of music therapists, this study sought to answer the following questions:

Focus Group.

1. Is there a need within the profession of music therapy for a template or tool to assist clinicians in accessing the research literature to inform their clinical practice?
2. Is there a need within the profession of music therapy for a template or tool to assist clinicians in evaluating the quality of the research literature they consult?
3. What modifications, including additions or deletions, should be made to the initial template to better serve music therapy clinicians in participating in evidence-based practice?
4. Is the initial template a tool that may be perceived as helpful and be used by music therapy clinicians to participate in evidence-based

practice?

Initial Questionnaire.

5. Do practicing music therapists currently base their clinical decisions on the research literature, as determined by citing specific influential studies?
6. If so, in what way has the information obtained from the research literature informed or changed their clinical practice?
7. If not, what are the reasons for not consulting the research literature to inform clinical practice decisions?

Completed Research Templates.

8. Does the designed research template assist music therapists in identifying accurate and important information necessary to inform clinical practice within a research study?
9. Does the designed research template guide music therapists in evaluating a research study, as determined through the assignment of a level of quality to the study?

Follow-Up Questionnaire.

10. What changes should be made to the designed research template to improve clarity or ease of use?
11. Based upon their experience using the designed research template, would music therapists employ such a template in the future to access

and evaluate the research literature to participate in evidence-based practice?

Chapter 3

Method

In an effort to promote evidence-based practice in the profession of music therapy, the purpose of this study was to develop a template to assist music therapy clinicians in accessing essential data from related research, evaluating the quality of the research, and determining how the research informs clinical practice. The process for developing the final research template occurred in three steps. The first step consisted of the development of the template using the most current research on evidence-based practice. Second, the template was sent to a focus group comprised of five music therapists with expertise in the areas of research and practice to ensure that the template is both necessary and useful for clinicians in the profession of music therapy, as well as to provide suggestions for improvement of the template itself. Finally, the template was tested on and evaluated by a sample of music therapists with varying educational backgrounds and levels of experience who completed the template on three research articles.

Materials

Development of the Research Template.

To help bridge the notorious “gap” between research and clinical practice, the template was designed to guide the clinician through the process of identifying clinically relevant information and evaluating the quality of a research study to inform clinical decisions.

The researcher began initial development of the template by compiling a list of items or elements in a research study necessary to inform clinical practice. Many of these elements were detailed in the books *The Handbook for Evidence-Based Practice in Communication Disorders*, by Dollaghan (2007) and Greenhalgh's (2006) *How to Read a Paper: The Basics of Evidence-Based Medicine*. Elements in the list included: the purpose of the study, the clinical question addressed, participants in the study, desired outcomes, and how those outcomes were measured. Other specifics important to making decisions about the study included items such as the design of the study, controls (such as randomization of participants), significance of the results, and generalizability of the outcomes. After a comprehensive list was created, the researcher categorized the items into four sections. These sections were then labeled "steps" within the template document and were created to guide a clinician through the template in a logical progression. Each step focuses on the analysis of a particular aspect of a clinical study. The steps were numbered and given the following descriptions:

Step 1: Determine what the present study is about and whether it holds information relevant to your clinical practice.

Step 2: Identify clinically relevant elements presented in this study.

Step 3: Evaluate the level or quality of evidence produced by this study.

Step 4: Make appropriate decisions based on this evidence regarding the translation of findings into your own clinical practice.

Once the categories were created and the fundamental elements appropriately assigned to a category, items within each category were carefully worded and provided with a brief suggestion as to where in a research article a particular piece of information might be found. Refer to Appendix E for a revised version of this template.

Step 3 of the template required more extensive consideration as it was created to help clinicians without extensive knowledge in research to evaluate a single study. This step is composed of three parts or stages. The researcher utilized the Oxford Centre for Evidence-based Medicine Levels of Evidence (CEBM, n.d.) and the handbook for evaluating evidence produced by the Scottish Intercollegiate Guidelines Network (SIGN, n.d.), as well as the *Guide to Evidence-Based Practice* (LinguiSystems, 2006) to develop the most accurate rating system that would be both reflective of the levels of evidence in other health care professions and appropriate to the profession of music therapy.

For the first stage of Step 3, the researcher developed a comprehensive list of the typically accepted levels of evidence as determined by the quality and design of an individual study. As the template was purposed for clinicians who may not have an extensive background in research, it was clear that the presentation of the levels of evidence needed to be accurate, but streamlined. Therefore, the researcher removed references to study designs not typical to the field of music therapy, such as cohort studies. Six levels of evidence were

established based on the design of the study and a simple description of each type of study was provided to help an individual without extensive research knowledge determine the design of a particular study (Cochrane Childhood Cancer Group, n.d.). The six levels of study designs developed were:

1. Systematic Review or a Meta-Analysis (Multiple studies with similar purposes analyzed together to determine an overall effect of treatment or outcomes.)
2. Randomized Controlled Trial Study (Single experimental study. Participants are randomly assigned to a treatment condition or control condition.)
3. Non-Randomized Controlled Trial Study/Quasi-Experimental Design (Single experimental study with at least two groups. Participants are assigned to different conditions using methods that are not random.)
4. Case Series/Prospective One-Group Study/Well-Designed Non-Experimental Study (Report of observations of a series or group of individuals receiving the same treatment/intervention. Comparisons are made before and after intervention, but with no control group.)
5. Case Report (Report on the treatment outcomes of a single individual, generally an outcome of interest.)
6. Expert Opinion based primarily on anecdotal evidence rather than research/ Description of treatment program not based on research.

Although the design of a study has a considerable impact on the level of evidence contributed by the study, elements of control within the study, number of participants, true randomization to experimental and control groups, and a variety of other factors also contribute to the overall quality of the study. Thus, in the first stage of Step 3, the researcher designed the template so that a clinician could determine the initial level of evidence produced by an individual study based on the design of the study. In the second stage of Step 3, four questions were added to assist the clinician in further evaluation of the study. These questions were:

1. Do the final analyses of results include all participants who started regardless of those who dropped out for any reason?
2. Does the researcher report statistical significance values (i.e. “*p* value”)?
3. Is the “sample size” adequate for the design of the study?
4. Does the researcher report confidence intervals in the results of the study (generally indicated by CI and a percentage)?

Certainly these four elements are not all inclusive of the many quality measures of a study; however, due to the desire to create a template accessible to any clinician, the researcher selected several important factors that do not necessarily require extensive knowledge of research, yet help to provide evaluation beyond the study’s design.

Stage one of Step 3 on the template yields a number (1 through 6) associated with the design of a study. In stage two, the clinician is instructed to answer the four questions with a “yes” or “no.” If one or two questions in stage two are answered with a “no,” 1 point is added to the number associated with the design of the study. If three or four questions in stage two are answered with a “no,” 2 points are added to the number associated with the design of the study. The number associated with the design of the study plus any points added as a result of the findings in stage two is then used to provide the clinician with a description in stage three.

The third and final stage of Step 3 provides the clinician with a final description of the level of evidence that a particular study produces. This step was developed to help guide music therapy clinicians through the process of determining the overall level of evidence yielded by the study, as well as a way to articulate, in terms of evidence-based practice, the ultimate influence a study has on practice decisions. There is no standardized wording within the evidence-based literature pertaining to the overall level or quality of evidence provided by a study (Bernstein, 2004; Dollaghan, 2007; Wright, n.d.). Thus, while considering a variety of terms in the evidence-based literature, the researcher devised a simple hierarchy of evidence using the terms, “excellent,” “good,” “fair,” and “emerging” evidence. These descriptions allow clinicians to discuss the impact of

a study on their own practice within the confines of the level or quality of evidence that clinical decisions are based upon.

The final step of the template, Step 4, was developed to walk a clinician through the process of determining whether the quality of a study and the outcomes presented by the study warrant translation into his or her own clinical practice. Questions are phrased so that the clinician goes through the process of determining how the information presented within the study might actually change or influence current practice decisions or behaviors and the necessary actions to do so. This section concludes with this statement to be completed by the clinician: “This study provides (excellent, good, fair, emerging) evidence to support the efficacy of (treatment intervention(s)) in treating clients with (diagnosis, symptom(s), behavior(s)).” It is then followed by the opportunity to determine whether or not the clinician will implement study findings into his or her own practice. The final statement on the template encourages practitioners to find more studies on the topic and/or conduct research on the topic to corroborate the evidence of the study.

Initial Questionnaire.

The researcher created an initial questionnaire for each participant to complete prior to completing the research template (see Appendix C). The questionnaire was developed to obtain demographic information on each participant pertaining to his or her educational background, professional

credentialing, years of experience, and area(s) of practice. In addition, responses on the initial questionnaire indicated whether the participant had consulted the research literature to inform his or her own clinical practice and if not, why. Demographic information obtained on the initial questionnaire was used to categorize and analyze responses on the completed research templates to determine trends specific to level of education or experience in the field.

Follow-Up Questionnaire.

A follow-up questionnaire was developed to obtain participants' views pertaining to ease of use and clarity of the research template (see Appendix D). It provided opportunities for participants to provide suggestions related to how the template might be improved. The follow-up questionnaire was developed in conjunction with the template as the items on the template informed the wording and ordering of questions on the follow-up questionnaire.

Clinical Research Articles.

The researcher selected six clinical research articles from professional journals for inclusion in this study. Each participant was asked to complete a research template on three of the six articles: one assigned by the researcher, one chosen by the participant from a list of three music therapy articles, and one selected by the participant from a list of two non-music therapy articles.

Inclusion criteria for all of the articles in the study were: a recent publication date (2008 for music therapy articles and 2007-2008 for non-music

therapy articles), a clinical focus relating to treatment interventions, strategies, or protocols, and the inclusion of the traditional parts of a research study, specifically, the literature review, methods, results, and discussion sections. In an attempt to maintain a reasonable amount of time requested by the participants, only articles under 20 pages in length were considered.

The first article was assigned by the researcher and evaluated by all participants to provide an opportunity for a comparison of responses across participants to a common article. This served to provide a baseline level of information regarding differences in individual responses, as well as differences due to years of experience or level of education. Specifically, the researcher compared the responses of each of the participants on all items to determine whether differences exist and, if so, if the differences in responses were specific to level of education or clinical experience. The assigned article, “Effects of live music therapy sessions on quality of life indicators, medications administered and hospital length of stay for patients undergoing elective surgical procedures for brain,” by Walworth, Rumana, Nguyen, and Jarred (2008), was randomly selected from articles meeting inclusion criteria. Specifically, the first three issues of the most recently published volume of the *Journal of Music Therapy* were examined for articles meeting the previously detailed inclusion criteria. Of the three articles that met the criteria, the Walworth et al. (2008) article was randomly selected to be the assigned article for this study.

As it was anticipated that participation in this study would potentially demand three to four hours of the participants' time, participants were provided with options for the remaining two articles from the five that were preselected by the researcher. Participants were instructed to select one article from the music therapy literature and one article from the non-music therapy literature, based on their own clinical work setting or areas of interest.

To ensure that the articles met inclusion requirements, the researcher read the title and abstract and briefly overviewed each article. However, to avoid influencing the outcome of the study no attempt was made by the researcher to evaluate the studies or to determine their quality in advance. It was not the intention of the researcher to select "high quality" or "low quality" studies for use in this study. The template was developed to guide the clinician in accessing and evaluating the research and determining whether it informs their clinical practice. Thus, the quality of the studies was left to chance so that the template might, indeed, guide the participants in evaluating the study and determining whether the necessary elements were included in the study and results to inform practice decisions. Overall, two articles from the *Journal of Music Therapy*, two articles from *Music Therapy Perspectives*, and two from non-music therapy journals were selected for inclusion in the study.

Music therapy research articles.

One article from the *Journal of Music Therapy*, in addition to the assigned article by Walworth et al. (2008), was randomly selected as an option for participants. This article was randomly selected from those that met inclusion criteria.

Four articles published in *Music Therapy Perspectives* in 2008 met inclusion criteria. The researcher randomly selected two of the four for inclusion in the study.

To avoid infringing on copyright laws, the executive director of the American Music Therapy Association was contacted and granted permission to electronically send the four music therapy articles in PDF format to study participants. The articles selected for inclusion in the study were:

1. Ziv, N., Rotem, T., Arnon, Z., & Haimov, I. (2008). The effect of music relaxation versus progressive muscular relaxation on insomnia in older people and their relationship to personality traits. *Journal of Music Therapy*, 45(3), 360-380. [Older Adults with Insomnia]
2. Kennedy, R. (2008). Music therapy as a supplemental teaching strategy for kindergarten ESL students. *Music Therapy Perspectives*, 26(2), 97-101. [Young Children in Public School Setting]
3. Hamburg, J., & Clair, A. A. (2008). The effects of a Laban/Bartenieff-based movement program with music on physical function measures in

older adults. *Music Therapy Perspectives*, 26(1), 30-37. [Well Older Adults in Senior Center]

Non-music therapy research articles.

To avoid violation of copyright laws on the non-music therapy articles, the researcher chose articles available to the general public through the world wide web. To locate these articles, the researcher employed the search engine, Google Scholar, which conducts a search of the available academic databases and yields references to research articles related to the search topic. Only a small percentage of these articles are available to the general public without paying a fee.

Therefore, the researcher selected two articles that met all inclusion criteria and were available free of charge via the world wide web. Participants were asked to select one of the two non-music therapy related articles. The two non-music therapy articles chosen for inclusion in the study were:

1. Hoare, B. J., Wasiak, J., Imms, C., & Carey, L. (2007). Constraint-induced movement therapy in the treatment of the upper limb in children with hemiplegic cerebral palsy. *Cochrane Database of Systematic Reviews*, Issue 2. <http://www.mrw.interscience.wiley.com/Cochrane/clsysrev/articles/CD004149/frame.html> [Movement Therapy for Children with CP]
2. Gallo, J. J., Bogner, H. R., Morales, K. H., Post, E. P., Lin, J. Y., & Bruce, M. L. (2007). The effect of a primary care practice-based

depression intervention on mortality in older adults. *Annals of Internal Medicine*, 146, 689-698. Retrieved January 16, 2008, from <http://www.annals.org/cgi/reprint/146/10/689.pdf> [Older Adults with Depression in Primary Care Setting]

Participants

Focus Group.

After the template was developed by the researcher using extant literature on the topic, it was sent to a focus group of five music therapists with expertise in clinical work and research in music therapy for initial analysis. These five music therapists were selected by the researcher to participate in the initial evaluation of the research template based upon their clinical work and research within the profession of music therapy. They were asked to examine the research template and to answer four questions related to the role of such a template in the profession of music therapy, including a request for suggestions to improve the template. Responses given by the members of the focus group assisted the researcher in modifying the initial draft of the template.

Sample Group of Music Therapists.

The modified research template was then sent to a sample group of music therapists to test the function of the template and to determine ease of use. The researcher solicited participants from a regional music therapy association membership. The template was designed to assist primarily entry level music

therapists in accessing and evaluating related research to inform clinical practice. However, the researcher hoped for individuals with varying levels of education, years of experience, and knowledge of research to agree to participate in the study for a more comprehensive analysis of the usability of the template.

The researcher petitioned members of a regional music therapy association to participate in the study. An electronic message stating the purpose of the study and requesting participants was sent to 214 individuals. Of those, 27 were returned as undeliverable or expired accounts; therefore 187 individuals received the initial message. Of those, 18 music therapists initially agreed to participate in the study. Fourteen participants returned the completed Initial Questionnaire and 12 returned a completed template on the assigned study.

Participants were contacted via electronic mail with a request for participation in the study as well as the “Internet Information and Statement of Consent” form. Upon receiving a return message granting consent, the sample group of music therapists was asked to complete the initial questionnaire, and then to complete the research template on three research studies. In addition, the participants were asked to complete the follow-up questionnaire, allowing for comments on ease of use, practicality, and clarity of the template, as well as suggestions for improvements. Participants were allotted two weeks from the initial message to complete and electronically return the requested items.

Procedure

After the researcher developed the initial draft of the research template using current evidence-based practice literature, evaluation of the template was conducted by the members of the focus group. The researcher sent an electronic message with a description of the study, request for participation, and the “Internet Information and Statement of Consent” form (see Appendix A). In addition, the research template and related questions pertaining to the research template were attached to the message. The contacted individuals who agreed to participate in the study were asked to read through the research template and to consider the attached questions. They were informed that if they replied to the initial message with the requested responses, they indicated consent to participate in the study. The researcher compiled the responses of the focus group members and made necessary modifications and clarifications to the research template.

The final step in developing the research template was to test the overall function and ease of use of the template on a sample group of music therapists. The researcher sent an electronic message to all members of a music therapy regional association stating the purpose of the study, describing the responsibilities for participation in the study, and clarifying the requirements for participation in the study (i.e. current board certification or eligible with intent to sit for the board certification exam within one year). The “Internet Information and Statement of Consent” form was attached to the message (see Appendix B).

Contacted music therapists were asked to return the message indicating that they agreed to the guidelines of the study and to the informed consent statement. Upon receipt of the returned message, the researcher sent a second electronic message containing specific instructions for completing the study, as well as attachments of the initial questionnaire, research template, and follow-up questionnaire. Additionally, the researcher provided each participant with a PDF formatted copy of the assigned research article and five research article options. Participants were allotted two weeks from the initial message to complete the questionnaires and three research templates and to return the completed materials to the researcher via electronic mail. To maintain confidentiality of each participant, completed templates and questionnaires, which did not include personally identifying information, were printed and assigned a number. The electronic message was then deleted, erasing all identifying information.

Data Collection

When all completed materials were received, the researcher compiled and evaluated the responses of the participants. Completed templates were first filed according to their particular research article. The templates completed on the same study were compared with one another. For example, responses on the templates completed on the assigned article, “Effects of live music therapy sessions on quality of life indicators, medications administered and hospital length of stay for patients undergoing elective surgical procedures for brain”

(Walworth et al., 2008), were compared with one another to determine similarity of responses across participants. Items on the template were designed to guide clinicians in identifying specific elements of a study, such as participant population, dependent variables, and treatment outcomes, as well as other objective items. After templates completed on the same study were compared with one another, results of all completed templates were compiled to provide an overall representation of responses on the template. Descriptive statistics, primarily percentages, were calculated on the various items on the template to provide a numeric representation of how many participants correctly identified the requested information. These percentages served to inform the researcher of any items that were not worded clearly, or in which not enough guidance was provided. Likewise, the template was designed to help the clinician to assign a level of quality to the study. The participants' responses on this item were compared to determine similarities or differences in their responses, which also assisted in determining clarity of the template.

The primary purpose for the assessment of responses on the template was to inform the researcher of needed changes or modifications to the template for improving clarity of the items or directions given for accessing the necessary information and evaluating the quality of the study. Responses on the initial questionnaire were used to provide background information regarding each participant's level of education and years of experience. This information served

to inform the researcher of how the template functioned for music therapists with different research and clinical experience. Responses on the follow-up questionnaire assisted in making necessary modifications to the template to improve clarity or ease of use.

Chapter 4

Results

The purpose of this study was to develop a research template to assist music therapy clinicians in accessing clinically relevant information from a research study and evaluating that study to participate in evidence-based practice. After the researcher developed the initial draft of the template, the template and a set of four questions were sent to a focus group of five music therapists with expertise in both research and clinical practice. The focus group consisted of three music therapy faculty members teaching at three different universities, one doctoral student/graduate teaching assistant at another university, and one master's level music therapist currently working in the clinical setting.

Focus Group Responses

The focus group members were asked to review the research template and then to respond to the following four research questions:

1. Is there a need within the profession of music therapy for a template or tool to assist clinicians in accessing the research literature to inform their clinical practice?
2. Is there a need within the profession of music therapy for a template or tool to assist clinicians in evaluating the quality of the research literature they consult?
3. What modifications, including additions or deletions, should be made to

the initial template to better serve music therapy clinicians in participating in evidence-based practice?

4. Is the initial template a tool that may be perceived as helpful and be used by music therapy clinicians to participate in evidence-based practice?

These research questions were designed not only to elicit suggestions for improving the format and content of the research template, but also to determine whether there is a perceived need for such a tool within the profession of music therapy.

All five individuals making up the focus group responded affirmatively to the first question, “Is there a need within the profession of music therapy for a template or tool to assist clinicians in accessing the research literature to inform their clinical practice?” Comments from the focus group reinforced the idea that a template would, indeed, be beneficial to clinicians by supporting the process of transferring information from research to the clinical setting. One individual responded that a tool such as the template would help music therapy clinicians “tease out relevant parts of the study” to determine the value of the research in terms of its contribution to clinical practice. In addition, two individuals commented that the template might not only guide the examination of the literature, but assist a clinician in justifying or articulating why an article would or would not be considered in the clinical decision making process. Finally, two

individuals suggested the use of such a template in the education of music therapy students who are “less familiar with how to read research.”

All of the focus group members also answered the second question, “Is there a need within the profession of music therapy for a template or tool to assist clinicians in evaluating the quality of the research literature they consult?” with a “yes.” Focus group responses corroborated the assertion that many music therapists are limited in both time and research knowledge, making it difficult to accurately evaluate the quality of studies. In addition, many music therapy studies lack some of the elements that increase level of quality, such as large sample size and randomization of participants, which makes generalization to populations in the clinical setting tenuous. However, responses affirmed that the ability to evaluate the quality of the research will benefit the profession by helping to “create a high level of integrity, objective and healthy criticism, and progressive practice.” These comments can be summed up with one respondent’s statement, “For many clinicians who have not had extensive education in research design and statistical analysis, this template may provide a time-efficient tool for forming a more educated conclusion about the strength of the study and the reported outcomes.”

The third question posed to focus group members was “What modifications, including additions or deletions, should be made to the initial template to better serve music therapy clinicians in participating in evidence-

based practice?” Responses to this question were carefully considered by the researcher and the template was modified accordingly.

In response to suggestions made by the focus group, the following changes were made. Under Step 1 of the initial research template, a prompt was added for the clinician to record the number of participants in a study, as there is reference to sample size later on in the template. Under Step 2, the researcher re-ordered the two phrases “What skills or behaviors are being measured? (What are the dependent variables?)” so that the phrase “What are the dependent variables?” would read first and the description would follow. This was, as a focus group member suggested, to maintain continuity throughout the template by placing the actual research term first, followed by the explanation. Also under Step 2, originally a prompt to identify any “surrogate” outcomes was included on the template; however, this item was completely removed from the template due to two comments about the possibility for confusion of the term itself and reference to the term in the following statement. Finally, under Step 2, the researcher added the term “related population” to the question about the possibility for generalization to the larger population.

Two individuals commented that the question under Step 3, “Is the ‘sample size’ adequate for the design of this study?” would be difficult for someone unfamiliar with research to determine. Although it is difficult to generalize to all studies a standard or “norm” for sample size, the researcher

added a statement to provide clinicians with a “norm” reference (Madsen & Madsen, 1978). This statement now reads, “ $N=30$ or greater is often assumed adequate in experimental studies in music; sometimes fewer is okay if population is unique.” Under Step 4, one question referred to the term “clinical significance,” which was identified as needing a “clearer definition.” Therefore, the explanation, “the observable or functional difference due to treatment,” was added. Finally, under Step 4, two original statements that were phrased to require a “yes” or “no” response only, were supplemented with another prompt for the clinician to indicate exactly how changes will be implemented in his practice. See Appendix E for the revised initial research template.

Two suggestions made by focus group members that were intently considered by the researcher were not ultimately incorporated into the revised template. One individual raised the issue that, under Step 2, the item asking the clinician to “describe the treatment intervention(s)/protocol(s)” disregards important, and often useful, outcomes from studies including PET scans, CNS studies, and the like that do not implement actual treatment conditions. The researcher acknowledges that this statement may limit some clinicians from accessing certain information from non-treatment focused research studies, but that the template was designed primarily to assist clinicians in identifying research supported treatment interventions. In light of this, most of the items on the template ask related questions specific to a treatment oriented study, making it

difficult to change just one item without altering many others, which could result in complicating or lengthening the tool. The second comment that the researcher considered, but did not incorporate into the revised template called for more detail on each item. For example, under “population,” clarification or prompts such as, “name of a disease or detailed description of disease” to help guide responses was suggested. The researcher resolved, however, that such suggestions would have to be extensive on each item to cover all the possibilities that might be encountered within a study, possibly making the template more confusing rather than clearer. In addition, this change would make the tool longer than it was. The researcher wanted to maintain the length of the tool as two comments were made indicating that the form was long, but that all items appeared necessary.

Overall, comments from focus group members about the research template were positive. Two such statements were, “I like the rating scale and the question that directly asks whether the study will influence the clinical practice” and “I really like how you have the ‘level of evidence’ section – an excellent way to help people discern the strength of the study.”

The final question posed to the focus group was, “Is the initial template a tool that may be perceived as helpful and be used by music therapy clinicians to participate in evidence-based practice?” Once again, the responses were a unanimous “yes.” Three remarks were made about the possibility of using this in the education setting with students to teach them the process of reviewing and

evaluating articles. These focus group members also made comments regarding the concern that many music therapists do not read research studies, and that a template like this would only be beneficial for clinicians who do read the research. The comment was made that presenting this template as a way to build CMTE credits for practitioners who utilize the template might result in clinicians “being inspired to learn more” and “taking a more in-depth look at research.” In addition, it was stated that once a clinician was familiar with the tool, the process of evaluating a study and making clinical transfers would become easier and that “after working with the tool for awhile one should be able to ‘eyeball’ a study and gain a sense of its credibility as evidence-based.”

Responses by the members of the focus group provided validation that a template such as this within the field of music therapy is, indeed, necessary if the profession is to advance within the healthcare arena. This comment by a focus group member clearly reinforces the purpose of this study: “As a side note, I do think this is necessary for our field. We like to throw around the term ‘evidence-based’ even where there is no evidence. We base our ‘evidence’ on observation or small studies, which would never be accepted in the medical field. Until we take a hard look at the research we are producing we should be cautious about using EB as a catch-phrase that is unfounded.”

Sample Group of Music Therapists

Once necessary revisions to the template were complete, the researcher sent the request for participants to members of a regional music therapy association. As indicated in the method section, 18 music therapists responded to the initial request indicating that they agreed to the Internet Information and Statement of Consent and would participate in the study. An electronic message containing instructions for completing the materials, as well as the attached materials and articles, was sent to all 18 participants. Four of these 18 did not return any completed materials. Fourteen participants completed the Initial Questionnaire.

Demographics.

The Initial Questionnaire was designed to obtain information regarding the participants' level of education, board-certification status, and years of experience in music therapy. Five participants indicated a Bachelor's degree in music therapy, three indicated a graduate equivalency and Master's degree in music therapy (or all coursework toward the Master's, lacking only completion of the thesis), two reported that they had earned their Bachelor's degree and Master's degree in music therapy (or all coursework toward the Master's, lacking only completion of the thesis), two indicated completion of the Ph.D. (or ABD), and one participant indicated completion of undergraduate certification. One participant indicated completion of the Bachelor's degree in music therapy and

Master's degree in therapeutic recreation. For the purpose of this study, the researcher included this individual in the category of Bachelor's and Master's degrees earned (as seen in Table 2), since it is assumed that most Master's level degrees require similar research requirements. Thirteen of the participants indicated that they were currently board-certified music therapists and one reported eligibility and intention to sit for the board certification exam within the year.

Table 2

Degree earned, MT-BC status, and Years of Experience of Participants

Degree Achieved	MT-BC Status	1-5yrs	6-10yrs	11-15yrs	16-20yrs	>20yrs
Bachelor's	MT-BC	3	1	1		
Graduate Equivalency & Master's (or ABT)	MT-BC	1		1		
	Eligible	1				
Bachelor's & Master's (or ABT)	MT-BC	2				1
Ph.D. (or ABD)	MT-BC	1	1			
Other	MT-BC			1		
Total		8	2	3	0	1

Finally, eight participants indicated 1-5 years of experience in the field, two reported 6-10 years of experience, three had 11-15 years of experience, and one had more than 20 years of experience in the field of music therapy. These demographics are reported in Table 2.

Three participants indicated that they had worked as music educators before entering the field of music therapy. Finally, participants were asked about the population(s) they most frequently served. Many individuals reported working with more than one age group and client population. Five reported working with older adults/geriatrics, four with children, three with adults, one with preschool, and one reported working with adolescents. In terms of disability/diagnosis, five reported working with individuals with autism, five reported working with individuals with developmental disorders, five worked in the mental health setting. The following disorders or settings were mentioned only one time by participants: physical rehabilitation, hospice, stroke, brain disorders, and Alzheimer's disease.

Initial Questionnaire Responses.

In addition to the demographic information that the Initial Questionnaire was designed to obtain, the questionnaire was also developed to provide answers to the following research questions:

1. Do practicing music therapists currently base their clinical decisions on the research literature, as determined by citing specific influential

studies?

2. If so, in what way has the information obtained from the research literature informed or changed their clinical practice?
3. If not, what are the reasons for not consulting the research literature to inform clinical practice decisions?

To determine the answers to these questions, the Initial Questionnaire included the question: “What article published in (*Journal Title*) has influenced or impacted the way you practice music therapy or provide treatment to your clients?” This question was asked three times, referring each time to a different journal: *Music Therapy Perspectives*, *Journal of Music Therapy*, and another profession’s journal. The researcher used this strategy to determine whether the participants were currently using the research literature to inform clinical practice decisions. In evidence-based practice, one would need to be able to provide an explanation of how a treatment decision was made, and, if based on current literature, to be able to provide the source for the information influencing the decision. Thus, the researcher asserts that if a clinician cannot recall a specific article that has influenced or informed her practice, then, while there may be articles that have provided general information, the clinician may not read or apply the literature in a way that truly impacts her practice and clinical decisions. If an article did impact treatment decisions, the researcher maintains that, in order

to provide an explanation of the evidence behind a treatment decision, the clinician would need to be able to cite the source or describe the article.

Only one of the 14 participants reported an article from *Music Therapy Perspectives* that has influenced her own clinical practice. She specified how the information in the article helped her to make recommendations to the team concerning transition songs with young children in the classroom setting. The remaining 13 participants indicated that they could not recall an article in *Music Therapy Perspectives* that has influenced their own clinical practice. The reasons they indicated, from a list of possible reasons included in the questionnaire, are presented in Table 3. The individual who indicated “other” as a reason reported, “I often feel that *MTP* articles have nice things to say about MT but these articles do not usually have the quantitative info I am looking for.” One participant simply elaborated that she could not indicate just one article as there were several articles that have contributed to her clinical work.

Two participants specified an article in the *Journal of Music Therapy* that influenced their clinical practice. One of these reported that, although the article she read did not provide specific interventions to implement, it did provide a “foundation of knowledge about what other music therapists work on in mental health” settings. The other participant indicated that the article that influenced her practice provided several concepts that she incorporated into her work in the pediatric setting. The other twelve participants reported that they could not recall

an article in *JMT* that influenced their practice, as presented in Table 3. One of these individuals indicated two reasons from the provided list as indicated in Table 3.

Four participants indicated an article from another profession's journal that had an influence in their own clinical practice. All of these participants articulated exactly how the research article influenced practice decisions they were making within their clinical settings. The remaining ten participants indicated they could not recall an article in another profession's journal that specifically influenced their practice. In reference to another profession's journal, two of the three participants who indicated that they "don't often read the research literature" further remarked that research from other journals was not available or accessible to them in their present situations. One participant who indicated that she "couldn't remember one right now" elaborated that she has often read articles in other journals to learn more about a population she was working with "in order to learn and get to know what characteristics/symptoms the person would have/exhibit and what would help him/her improve his/her ability and skills." In addition, another participant indicated that, although she could not indicate just one article from another profession's journal, many articles from psychology journals have been helpful in providing approaches to use in her clinical practice. Reasons participants indicated for not being able to recall an article in another profession's journal are reported in Table 3.

Table 3

Reasons participants reported for not recalling an article that influenced their clinical practice

Reason:	MTP	JMT	Another Profession's Journal
I don't often read the research literature	2	1	3
I don't understand the research literature	0	0	0
I haven't found a study directly related to my own practice needs	1	2	1
I read some of the studies, but they don't really tell me how to do the techniques or procedures	2	2	0
I just can't remember one right now	6	7	5
Other	2	1	1

Each of the 14 participants had three opportunities to list one article that influenced her clinical practice. Five participants reported a total of seven articles, out of a total of 42 opportunities (16.7%), that influenced their own clinical practice. Thirty-five of those opportunities (83.3%) participants indicated that they could not recall an article that had influenced their practice. In addition, only five of the 14 participants reported on the seven articles that influenced their clinical practices. Although, it is not possible to generalize results from this sample to the entire population of music therapists, the researcher would answer the research question “Do practicing music therapists currently base their clinical

decisions on the research literature, as determined by citing specific influential studies?” by stating that only a small percentage of clinicians do. This researcher would suggest that the percentage of music therapists who do not base clinical decisions on current literature is actually higher than what is represented in this sample, as this sample of music therapists is more representative of those who are interested in, or at least supportive of, research as demonstrated by their participation in this study.

The five participants who reported a study that had impacted their clinical practice provided a variety of descriptions of how that research influenced their practice. Thus, the answer to the research question, “in what way has the information obtained from the research literature informed or changed their clinical practice?” is diverse. Of the reasons indicated, participants reported that the research study: influenced decisions about who to treat, provided new treatment interventions/techniques/procedures to incorporate into therapy, or provided a basis of knowledge or contextual support for making other clinical decisions.

The third research question, “...what are the reasons for not consulting the research literature to inform clinical practice decisions?” can be partially answered by responses to the item on the questionnaire allowing participants to indicate why they could not recall a study. The researcher provided possible reasons for the participants, including: “I don’t often read the research literature,”

“I don’t understand the research literature,” “I haven’t found a study directly related to my own practice needs,” “I read some of the studies, but they don’t really tell me how to do the techniques or procedures mentioned,” and “I just can’t remember one right now.” These options were provided for two reasons, first, to provide a couple of choices that might have had an impact, but that clinicians may not be cognizant of, and second, to help minimize the amount of time necessary to complete the template. The number of times a reason was used by a participant is recorded in Table 3. The researcher asserts that most of the provided options were beneficial to participants and to the study; however, the reason, “I just can’t remember one right now,” was overused. Therefore, it is difficult to say whether participants who selected this rationale may have had a study that directly influenced their practice that they simply could not remember at the time or if this statement was used in place of determining an actual reason for not being able to recall or describe a study of influence. It is also a possibility that participants did not want to reveal that they do not consult the literature on a regular basis or that they do not understand it. It is feasible that some participants may have felt embarrassed, for whatever reason, to admit one of these options. Finally, some of the participants reported that they could not indicate just one study because many studies had influenced their clinical practice.

Completed Research Templates

Participants were asked to complete the research template on three different studies: one assigned study, one from a choice of three music therapy studies, and one from a choice two non-music therapy studies. The researcher analyzed the responses on all templates to determine the answers to the research questions, “Does the designed research template assist music therapists in identifying accurate and important information necessary to inform clinical practice within a research study?” and “Does the designed research template guide music therapists in evaluating a research study, as determined through the assignment of a level of quality to the study?”

Twelve participants read and completed the research template on the assigned article, “Effects of live music therapy sessions on quality of life indicators, medications administered and hospital length of stay for patients undergoing elective surgical procedures for brain” (Walworth et al., 2008). Responses to specific items on the template that relate to this article are detailed below to provide an example of how all templates on the various articles were analyzed and how results were determined. Although the reader can refer to Appendix E to view the template in its entirety, figures consisting of the actual items on the research template are included within the body of this paper for the convenience of the reader.

Step 1: Determine what the present study is about and whether it holds information relevant to your clinical practice

Title:
 Author(s):
 Journal (Vol/Issue):
 Date of Publication:

Population of interest (Who are the participants in this study?) [*Abstract or "Participants" in Method section*]:

How many participants are there?

Purpose of the study (What clinical question(s) does this study address?) [*Abstract or last ¶ before Method section*]:

Research Question(s) (if different from Purpose) [*Last ¶ before Method section*]:

Figure 1. Step 1 of the Research Template completed by participants.

All of the participants recorded essentially the same answers on the items in Step 1 of the template. No one indicated “research questions” different from the purpose of the study. Information reported in this step of the template provides the basic reference information for the article, as well as the fundamental purpose of the study.

Under Step 2, each participant accurately identified the “dependent variables” and “how they were measured,” although some recorded them in more detail than others. Only five participants responded to the item, “Describe the treatment intervention(s)/protocol(s)” with a description or listing of the actual music therapy techniques mentioned in the article. The seven others reported on the methodology of the study rather than the actual treatment interventions.

Step 2: Identify clinically relevant elements presented in this study

What are the dependent variables? (What skills or behaviors are being measured?) *[Method section]:*

How are they being measured? *[Method section under "Measures" or "Equipment"]:*

Describe the treatment intervention(s)/protocol(s) *[Method section]:*

Are the treatment protocols described in enough detail that you could integrate them into your own clinical practice?

What were the true results/treatment outcomes (related to the purpose/goal) *[Results section]?*

Were the results statistically significant *[Results section]?*

What conclusions were drawn about the efficacy of the treatment *[Results or Discussion sections]?*

Are the conclusions of the researcher justifiable based on the results of the study?

Can you generalize the findings of this study to the larger population or a related population? *[Discussion section]:*

Figure 2. Step 2 of the Research Template completed by participants.

Only four of the participants responded to the question, “Are the treatment protocols described in enough detail that you could integrate them into your own practice?” as the researcher would have. These individuals were able to identify that “no specific protocols were given, just general music therapy techniques” and that “they provided vague explanations of interventions at best.” However, eight participants indicated that enough information about treatment interventions was provided to be able to integrate them into their own practice. Of these, four

reported on the methodology of the study rather than on the treatment interventions employed, indicating that they did not clearly understand the prompt, “Describe the treatment intervention(s)/protocol(s).” Therefore, their responses to the follow up question concerning the possibility of integrating protocols into clinical practice were reasonable, although not what the researcher intended.

Eleven of the 12 participants provided correct responses to the question, “what were the true results/treatment outcomes?” However, eight of these participants indicated results in very vague terms. Only one recorded inaccurately the author’s statement regarding the fact that differences were not between control and experimental groups, but between pre and post music therapy sessions for experimental groups only. All 12 participants, however, were able to correctly identify which variables “were statistically significant?” Eleven participants recorded the “conclusions drawn about the efficacy of the treatment” that the authors indicated (one participant recorded difficulties reported during the study) and eight participants indicated that “the conclusions of the researcher were justifiable based on the results of the study.” The four remaining participants indicated that the conclusions were not or were only “somewhat” justifiable. Two of the four reported that the sample size was too small to make such conclusions; and one suggested that the authors were misleading in the discussion based on their results.

Finally, seven participants responded to the question “can you generalize the findings of this study to the larger population or a related population?” positively, reporting that study results could be generalized to other surgery patients, as well as other populations for improving quality of life measures. Four participants responded negatively or tentatively and indicated that a larger sample size and study replication was necessary to generalize results. One participant did not answer the question with a related statement.

<p>Step 3: Evaluate the level or quality of evidence produced by this study</p> <p>I. Determine the design of this study <i>[May be stated in Abstract or Method sections. If not clearly stated, make determination based on the following short descriptions.]</i>:</p> <ol style="list-style-type: none">1. Systematic Review or a Meta-Analysis (Multiple studies with similar purposes analyzed together to determine an overall effect of treatment or outcomes.)2. Randomized Controlled Trial Study (Single experimental study with at least two groups. Participants are randomly assigned to a treatment condition or control condition.)3. Non-Randomized Controlled Trial Study/Quasi-Experimental Design (Single experimental study with at least two groups. Participants are assigned to different conditions using methods that are not random.)4. Case Series/Prospective One-Group Study/Well-Designed Non-Experimental Study (Report of observations of a series or group of individuals receiving the same treatment/intervention. Comparisons are made before and after intervention, but with no control group.)5. Case Report (Report on the treatment outcomes of a single individual, generally an outcome of interest.)6. Expert Opinion based primarily on anecdotal evidence rather than research/Description of treatment program not based on research <p>Please Note: The number (1-6) associated with the design of this study will now be referred to as the study’s assigned “level of evidence.”</p>

Figure 3. Stage one of Step 3 of the Template completed by participants.

As described in the method section, Step 3 of the template was designed in three stages to help clinicians evaluate the quality of a study. All 12 participants identified this study as a randomized controlled trial study in the first stage. The second stage presented questions pertaining to additional quality measures.

II. Additional Quality Measures:

If the design of the study achieved a 1, 2, or 3 rating, please determine quality measures 'a' through 'd' below (indicate with a 'yes' or 'no').

If the study achieved a 4, 5, or 6 rating, please go directly to Roman numeral III.

a) Do the final analyses of results include all participants who started regardless of those who dropped out for any reason (is the N at the end of the study the same N as at the beginning)?

b) Does the researcher report statistical significance values (i.e. " p value")?

c) Is the "sample size" adequate for the design of the study ($N=30$ or greater is often assumed adequate in experimental studies in music; sometimes fewer is okay if population is unique)?

d) Does the researcher report confidence intervals in the results of the study (generally indicated by CI and a percentage)?

If you answered "no" to any 1 or 2 of these questions, add 1 point to the assigned "level of evidence" for your study design.

If you answered "no" to 3 or all of these questions, add 2 points to the assigned "level of evidence" for your study design.

Figure 4. Stage two of Step 3 of the Research Template completed by participants.

On item ‘a’ in the second stage, eight participants said “yes,” three reported “no,” and one was unsure about the authors reporting the same number of participants at the beginning and end of the study. This particular study does mention a drop-out from the study even though the number of participants reported at the beginning and the end was the same, making it difficult to determine the answer to this question. All 12 participants correctly identified that the authors of the study did include p values in the results. In response to question ‘c’ pertaining to sample size, six participants indicated that the sample size was adequate for the study and six reported that the sample size was not adequate for the study. Eleven participants correctly identified that no confidence interval values were included in the study; one participant reported that they were.

The third stage of Step 3 guides clinicians in combining results achieved in the first and second stages of Step 3 to provide an overall “level of evidence” description earned by the study. Eight of the 12 participants reported that this study provided “Good Evidence” upon which to make clinical decisions. Three participants, who indicated “no” to three of the four quality measure questions, followed the instructions correctly and determined that the study provided “Fair Evidence.” One participant did not correctly identify the quality measures; therefore, although she followed the directions, her calculations did not result in an accurate description of the level of evidence.

III. Assign this study's "Level of Evidence" (Indicate which of the following descriptions matches with your final 'level of evidence' score.):

1 or 2	Excellent Evidence	This study provides excellent evidence upon which to make clinical decisions.
3	Good Evidence	This study provides good evidence upon which to make clinical decisions.
4	Fair Evidence	This study provides fair evidence for informing clinical practice. More evidence is necessary to improve confidence in treatment efficacy.
5 or 6	Emerging Evidence	Initial work in the area suggests possible benefit of treatment intervention. High quality research needs to be cited or conducted to validate and corroborate the evidence.

Figure 5. The third stage of Step 3 on the template completed by participants.

Step 4 of the research template was designed to guide music therapy clinicians through the process of determining whether the results of an individual study should influence their own clinical decisions and if so, how. Due to the various work settings of the participants, this study did not relate to all of them, therefore, it is difficult to make comparisons between participants' responses in this step of the study.

Step 4: Make appropriate decisions based on this evidence regarding the translation of findings into your own clinical practice.

Do the treatment goals and outcomes described in this study relate to the treatment needs of your own client(s)?

If so, how?

Was there enough of a “clinical” difference (the observable or functional difference due to treatment) for you to change what you are currently doing in your own practice?

If so, what will you change, modify, or implement?

Does this study provide enough information that you can make a “prognostic” statement about the expected outcomes of treatment, including, duration and frequency of treatment and expected outcomes?

Figure 6. Step 4 of the Research Template completed by participants.

Seven participants did report that the “treatment goals and outcomes described in this study relate to the treatment needs” of their own clients and answered, “if so, how,” by relating positive results in the study regarding quality of life indicators to their own client population. Interestingly, one of these participants also indicated earlier that the results were not generalizable because further research was required. Five participants reported that the treatment outcomes in the study did not relate to their own clients’ needs. In response to the question, “Was there enough of a ‘clinical’ difference for you to change what you are currently doing in your own practice?”, only one participant responded “yes,” four said “no,” one said “not sure,” two reported that they already do the techniques in the study and would not have to change anything, and four indicated that the study did not relate to their circumstances. Six participants were able to

correctly identify (as determined by this researcher) that this study did not “provide enough information that you can make a ‘prognostic’ statement about the expected outcomes of treatment.” Five participants reported that there was enough information to make a prognostic statement and one participant indicated only “somewhat.”

Final Decision Statement(s): Using the information and “level of evidence” determined above to complete the following statement.

This study provides (excellent, good, fair, emerging) evidence to support the efficacy of (treatment intervention(s)) in treating clients with (diagnosis, symptom(s), behavior(s)).

Choose one of the following:

I will use the information reported in this study to inform my own clinical practice in the following way(s):

I will not use the information reported in this study to inform my own clinical practice because:

Figure 7. The Final Decisions Statement at the end of Step 4 completed by participants.

Seven participants were able to correctly complete the Final Decision Statement using the information they had previously determined in Step 3 of the template. Two did not complete the statement. Three participants did not complete the statement using the information they had previously determined in Step 3 pertaining to the level of evidence of the study. Finally, five participants indicated that they “will use” the information reported in this study to inform their

own clinical practice. Of the seven who indicated that they “will not use” the information in the study to inform their clinical practice, four reported that this is not their area of practice, one provided the rationale that the research is not strong enough, one reported that she already uses similar techniques in her practice, and one indicated a difference in practice styles.

As all of the participants completed the research template on the assigned study (Walworth et al., 2008), the researcher provided descriptive results on an item-by-item basis to provide the reader with a clear understanding of the types of responses possible on the template and the process that the researcher went through to determine overall outcomes. Additionally, the completed templates on all five of the studies were analyzed together to provide an overall numerical view of many of the individual items and how each step on the template functions as a whole. Thirty research templates were completed across five studies. Twelve participants completed templates on the Walworth et al. (2008) study, seven participants completed templates on the study by Gallo et al. (2007), five participants completed templates on the article by Hamburg and Clair (2008), four participants chose to complete a template on the study by Ziv et al. (2008), only two participants selected the article by Hoare et al. (2007), and no templates were completed on the article by Kennedy (2008). Responses on all 30 templates were compiled and are presented below. Refer to Appendix E to view the template in

its entirety or refer back to Figures 1 through 6 to view related steps of the template.

Step 1 of the template was designed such that reference information and the fundamental elements of a study (population description, number of participants, and purpose of the study) would be identified at the onset of reading an article. This information is necessary for one to determine whether it is a study of interest, as well as to set the stage for all other information to follow. All five items under Step 1 of the template were correctly identified by the participants across the 30 completed templates, except for one participant who recorded an incorrect number of participants in one of the studies. Participants all recorded the “purpose of the study,” and only on six (20%) templates did individuals indicate a “research question” different from, but still related to, the purpose of the study.

Table 4

Raw data and percentage of correctly identified information under Step 1

30 Templates x 5 Items	Correctly Identified	Incorrectly Identified	Percentage Correct
Total of 150 Items	149	1	99%

Step 2 on the research template was developed to help clinicians “identify clinically relevant elements presented in the study.” Answers to the items were judged by the researcher as correct unless the response was clearly inaccurate. Therefore, some responses that lacked specificity were calculated as correct, even

though they were not written with enough detail that they could be replicated from the template. Compiled results from Step 2 of the template are presented in Table 5.

Of the 30 completed templates, 90% presented correctly identified dependent variables and 97% accurately reported how they were measured. In response to the item specifying, “Describe the treatment intervention(s)/protocol(s),” on only 16 (53%) of the templates did participants describe the treatment intervention. Rather, participants described the methodology/procedure of the study on 14 of the templates. Eleven of the templates presenting methodology rather than treatment intervention were completed by 5 of the participants, suggesting that fewer than half of the participants misunderstood the prompt or the terminology. This response, however, suggests that clinicians may not be familiar with the concept of reading a study for the actual treatment interventions, but rather for methodology of the study itself when reading a research article or that the terminology used on the template was not understood by participants. The researcher did not evaluate whether participants were correct or incorrect in their responses to the question “Are the treatment protocols described in enough detail that you could integrate them into your own clinical practice,” as this is somewhat of a subjective question. However, this researcher suggests that only three of the studies (represented by a total of 11 templates) actually presented enough information

that clinicians might be able to integrate elements into their own practice. Of the remaining 19 templates covering two studies, 53% indicated that there was enough information to integrate treatment interventions into one's clinical practice. The researcher would maintain these studies do not include enough information for transfer to one's own clinical setting.

Participants demonstrated the ability, overall, to correctly identify the results of a study (93%), whether or not there was statistical significance (100%), and the conclusions made by the researchers (90%). Two answers that were recorded as incorrect in the results appear to actually be misplaced responses to other questions as the type of answer did not relate to the type of prompt or question. The final two items under Step 2 of the template prompt the clinician to indicate whether conclusions made by the author are justifiable based on results and whether findings can be generalized to the larger population or related population. Answers to both of these questions must be based, at least partially, on the clinician's own opinions of the study. Therefore, although the researcher evaluated the responses to determine whether clinicians responded appropriately to the questions, no attempt was made to classify these responses as correct or incorrect. Participants' responses to these two questions were appropriate as demonstrated by their answers and although two participants indicated that they did not know for sure, the researcher asserts that these concepts are important for

clinicians to consider when evaluating the quality of a study and its possible influence on one’s practice.

Table 5

Raw Data and Percentage of Templates with Correctly Identified Information from Items Under Step 2

Item	Correctly Identified	Incorrectly Identified	Percentage Correct
Dependent Variables	27	3	90%
DV Measures	29	1	97%
Description of TX Interventions/Protocol	16	14	53%
Results	28	2	93%
Statistics	30	0	100%
Conclusions	27	3	90%

Step 3 of the template was developed to help music therapy clinicians “evaluate the level or quality of evidence produced by a study.” It is comprised of three stages that walk the clinician through determining the design of the study, establishing additional quality measures, and ascertaining the study’s final “level of evidence.”

Of the 30 research templates, participants correctly identified the design of the study 25 times. Five participants did not correctly identify the design of the study. Four of these were possibly due to lack of clarity on the research template.

The article read by these four participants presented a study design that was quasi-experimental in nature; however, the description provided for a quasi-experimental study on the template did not pertain directly to the study design of this article. None of the four participants who completed the template on this article correctly identified the design; therefore, the researcher revised the template accordingly for final presentation in this document.

The second stage of Step 3 on the research template assists clinicians in determining additional quality measures. Although the measures included on the template are by no means exhaustive, they do impact the quality of a study and are important for music therapy clinicians to consider. The percentage of templates with accurate answers to these questions is recorded on Table 6. Participants provided correct responses to item 'a' 96% of the time, to item 'b' 100% of the time, and to item 'd' 85% of the time. The researcher did not determine whether answers to question 'c' were correct or incorrect, however, as it is up to the reader of a study to determine whether the sample size in a study was adequate. The guide of $N=30$ as an adequate sample size was provided on the template, however, clinicians must make the final decision about what number they believe to be adequate for an individual study. In addition, stage two of Step 3 is not to be completed if the design of the study falls under the final three categories (case series et al., case report, expert opinion), therefore, the evaluation

of whether responses were correct on items ‘a,’ ‘b,’ and ‘d,’ is out of only 26 templates.

Stage three of the template was analyzed by the researcher in two different ways. First, the researcher evaluated Step 3 of all of the completed research templates to determine whether the instructions on the template clearly guided the clinicians through the process of evaluating the study. The researcher simply examined whether the clinician indicated the correct final “level of evidence” achieved by a study based on responses to the items in stages one and two. If the clinician identified the design of the study as a level four, five, or six, yet responded to questions in stage two, the researcher recorded the response as incorrect. Eighty-seven percent of the final “level of quality” reported on the templates was accurate based on the responses within stage three. These results are reported in Table 6.

Finally, the researcher evaluated the responses in Step 3, stage three in relation to the outcomes determined by the researcher. The researcher determined the final “level of quality” that each study would achieve on the template if all the parts were completed correctly and then compared the participants’ answers to that standard. Results indicate that 67% of the templates reported a “level of quality” that agreed with the researcher’s. These outcomes serve to inform the researcher that many clinicians may need further training in deciphering study designs and/or other elements specific to experimental and clinical research.

Table 6

Raw Data and Percentage of Correctly Identified Information on Items in the Three Stages of Step 3

Item	Correctly Identified	Incorrectly Identified	Percentage Correct
Stage I: Study Design	25	5	83%
Stage II: Additional Quality Measures (of 26 Templates)			
a) All participants reported at end?	25	1	96%
b) Statistical Significance?	26	0	100%
d) Confidence Intervals?	22	4	85%
Stage III: Participant Determined	26	4	87%
Stage III: Researcher Determined	20	10	67%

Step 4 of the research template was designed to help clinicians “make appropriate decisions based on this evidence regarding the translation of findings into their own clinical practice.” Responses to the items on this part of the template could not necessarily be determined as correct or incorrect. Rather, responses should result from what a clinician has learned about the study up to this stage on the template and how that knowledge matches up with her own clinical experiences and needs. Therefore, the researcher evaluated this section of the template as a whole. Responses on the individual items were not evaluated; rather, the researcher evaluated whether a clinician demonstrated a logical

progression of decision making based on previous responses. For example, if a clinician responded to the question, “Was there enough of a ‘clinical’ difference for you to change what you are currently doing in your own practice?” with a “no,” then the researcher expected that her response on the final decision statement would reflect that response. If the clinician, however, indicated the statement, “I will use the information reported in this study to inform my own clinical practice,” the researcher determined that she did not understand the interconnectedness of the previous items and their influence in the final decision on the template.

Responses on the final step of the 30 templates were all appropriate according to each participant’s previous responses. However, it is necessary to note that participants indicated on 11 of the templates that they do not work in a related population. Therefore, they indicated that the information from the study either would not be applicable or would be incorporated only if they worked with a related client population in the future. In addition, responses on six of the templates required close scrutiny to determine that their answers did, indeed, flow logically. These participants responded in the negative to the question “Was there enough of a ‘clinical’ difference for you to change what you are currently doing in your own practice?” however, they indicated that they would use the information in future practice. In their elaborations to these responses, the participants indicated that they already incorporate techniques presented in the study in their

own clinical practice. Thus, their seemingly illogical conclusions on the surface were a response to the wording in the question, would you “change what you are currently doing in your own practice?” The researcher concluded that the question should be re-phrased and modified the question by eliminating the word “change” and adding the phrase “to incorporate” within the question. Refer to Appendix F for the fully revised research template.

The answer to the final question under Step 4, “Does this study provide enough information that you can make a ‘prognostic’ statement about the expected outcomes of treatment, including, duration and frequency of treatment and expected outcomes?” was determined on all five studies by this researcher. Therefore, participants’ responses on the templates were compared to the researcher’s answer. Participants did correctly identify (as determined by this researcher) whether a study provided enough information to make a ‘prognostic’ statement on 21 (70%) of the templates. An incorrect answer was reported on eight (27%) templates and one participant indicated only “somewhat,” which was not determined as correct or incorrect. These results suggest that the majority of clinicians are able to identify the information that make a prognostic statement possible, but that further education in this area is needed. No changes were made to the template on this item.

The “Final Decision Statement” was to be completed using the information previously determined on the template. It reads, “This study provides

(excellent, good, fair, emerging) evidence to support the efficacy of (treatment intervention(s)) in treating clients with (diagnosis, symptom(s), behavior(s)).”

This statement was completed correctly with the level of evidence previously determined in Step 3, on 24 (80%) of the templates. This statement on three templates was not completed. This statement on the final three templates was completed with a level of evidence unrelated to that already determined on the template, suggesting that these three individuals did not understand the task.

It is interesting to note that level of education and years of experience were tracked through evaluation of the results. A visual analysis of the data indicate no trends related to participants' years of experience or level of education on correctly or incorrectly identified responses throughout the template. Five of the participants were found to have recorded incorrect responses more than the others; however, their reported levels of education and years of experience vary by person.

The compiled results were utilized to determine the answer to the researcher question, “Does the designed research template assist music therapists in identifying accurate and important information necessary to inform clinical practice within a research study?” The researcher concludes that this template does indeed assist music therapists in identifying the necessary information in a study to inform clinical practice. However, based on the results, it is evident that the template assisted participants to correctly identify and describe the treatment

interventions/protocols employed in the studies on just over 50 percent of the templates. The researcher suggests that re-wording and clarifying this item on the template, as well as future education of music therapy clinicians regarding the use of this template, may help to increase this percentage.

The second research question, “Does the designed research template guide music therapists in evaluating a research study, as determined through the assignment of a level of quality to the study?” can be answered by looking at overall responses on Step 3 of the template. Results indicate that the template assisted participants to accurately determine the design of a study on 83% of the templates, as well as the final “level of evidence” on 87% of the templates. However, if the researcher’s evaluation of the studies was accurate, the template was able to assist clinicians in accurately evaluating the quality of a study in only 67% of cases. This was partially due to four participants having difficulty determining the design of one of the studies, which would hopefully be resolved through improvements to the description provided on the template by the researcher. Once again, ongoing education in this area for music therapy clinicians, including utilizing a template such as this, may help clinicians to be able to accurately and efficiently evaluate the quality of studies they consult.

Follow-Up Questionnaire Responses.

The final document that participants were asked to complete was the Follow-Up Questionnaire. It was designed to obtain information pertaining to

participants' experiences with the research template and specifically, to help answer the research questions: "What changes should be made to the designed research template to improve clarity or ease of use?" and "Based upon their experience using the designed research template, would music therapists employ such a template in the future to access and evaluate the research literature to participate in evidence-based practice?" In addition, the Follow-Up Questionnaire also sought to determine the amount of time necessary to complete the template on an individual study.

Eleven participants completed the Follow-Up Questionnaire. Question one on the questionnaire was phrased to learn how long it took for participants to complete one template on a study. Two participants reported completing each template in under 30 minutes, seven participants reported taking between 30 to 60 minutes to complete a template, one reported 90 minutes, and one reported well over 90 minutes to complete each template. Thus, the majority of individuals were able to complete the template in 30 to 60 minutes. As clinicians must find time within their busy treatment schedules to read current research, it is necessary that the template not extensively increase the time necessary to read and evaluate an article. Additionally, the researcher speculates that with practice, clinicians would become familiar with the template and it would begin to assist them in accessing the necessary information and evaluating the article within a shorter amount of time.

Question two was included to allow for participants to indicate items on the template that they found difficult to understand or to use. Three of 11 participants reported that there were no parts of the template that they found difficult to understand or use. One participant indicated that “Research Questions” under Step 1 was confusing and another participant reported that parts two and three of Step 3, evaluating the quality of a study, was difficult, but neither participant elaborated a reason. Five participants indicated that Step 4, translation of research findings into clinical practice, presented more of a challenge than the other parts of the template. One participant simply indicated that “Step 4 took the most time (had to think and not just answer facts).” One reported that “Step 4 and the Final Decision Statements seemed redundant.” Two indicated that Step 4 was difficult to complete because the information in the studies were not directly applicable to their current situations. Finally, one participant indicated that the question, “Was there enough of a ‘clinical’ difference for you to change what you are currently doing in your own practice?” was confusing, but elaborated, “maybe because none of the articles provided new information to me that would cause me to change my own practice.” In addition, two participants did not indicate a part of the template that was difficult, but that understanding the designs of the various studies and reported statistics was a challenge.

The next question on the Follow-Up Questionnaire, “What questions or parts of the template were particularly helpful to you?” provided a clear indication

that Step 3, evaluating the level of evidence produced by the study, was considered one of the most beneficial aspects of the template. Seven of the 11 participants reported that Step 3 was particularly helpful. Reasons provided by the participants included, “never thought about those,” and “Step 3 helped me to step back and examine the article more efficiently.” Three participants reported that Step 2 was helpful, and one elaborated, “it helped lay out the basic yet important aspects of the study.” Only one participant reported the inability to think of something beneficial about the template.

Eight participants indicated that “yes” they would and two indicated that they “possibly” would use a template such as this in the future to assist in participating in evidence-based practice. Two participants elaborated that a template such as this might be useful for students (and professionals) in learning how to really read and understand the research literature. One of these individuals went on to say, however, that “honestly, I am not sure if people would use it unless it’s required since it takes time to fill it out.” Another participant mentioned that it would be interesting to be able to read other people’s responses on the template for a particular study. One individual described the views of the researcher when she said, “It would be a good idea to use this type of template until I could get used to evaluating the level of evidence when reading a research article or planning for a study. Once I get used to it, I’d be able to evaluate without a template.” Once again, only one participant indicated “not likely” that

she would use such a template as she “found completing the template a tedious task at times and not an efficient use of time.” Overall, however 91% of respondents indicated that they would or might use this template to read and evaluate research literature in the future, providing support for a template such as this within the profession of music therapy.

The final item on the Follow-Up Questionnaire allowed for any other comments or suggestions pertaining to the template. One participant suggesting omitting the grey boxes designated for typed responses as they “limit typing” and “don’t allow for spell check.” Another participant said, “because I’m working on my master’s thesis ... evaluating other studies was helpful to evaluate the design of my own study.” She went on to indicate that the template was not difficult to understand, but that for some who have not had coursework in research methods, “it might have been hard to understand the articles, especially the results section such as *p*-value and CI, and answer questions on this template.” One participant stated, “I could have used this during my Master’s thesis research,” and another reported, “It was interesting to know how much the information provided in the research study is reliable.” Finally, one participant nicely summarized, “I think it is difficult for music therapy studies to achieve a very high level of evidence, due to difficulty finding enough participants, uniqueness of population characteristics, lack of systematic/standardized measurement tools, etc. But, because of that, it is

essential to develop a way to evaluate quality of research studies so that we might provide evidence-based practice. Thank you for conducting this study!”

Final Modifications to the Research Template

The purpose of this study was to develop a research template to assist music therapy clinicians in identifying clinically relevant information in and evaluating a research study. The template was initially designed by the researcher using the extant literature on evidence-based research. After the template was evaluated by a focus group and suggestions for improvement were made, the researcher made the necessary revisions to the template. Next, a sample group of music therapists completed the template on five different research articles. Responses on the template were evaluated by the researcher to determine whether items on the template were necessary and to determine clarity and overall function of the template. Finally, the same sample group of music therapists responded to questions on a Follow-Up questionnaire pertaining to ease of use and providing opportunities for making suggestions regarding the research template. The researcher considered responses to both the completed templates and the Follow-Up Questionnaires in making final revisions to the research template. A description of revisions follows.

The items under Step 1 of the template were not altered, except that the prompt to report the “research questions” was removed, as it was utilized on only

6 of 30 templates. The researcher determined that indicating the “purpose of the study” would be adequate.

All items under Step 2, except for the prompt to “describe the treatment intervention(s)/protocol(s),” remain the same. As only 53% of the completed templates presented the information requested, the prompt was clarified and now reads: “Describe the **treatment** intervention(s)/protocol(s) (i.e. Independent variables/Types of therapy used to achieve positive treatment results).”

Under Step 3 of the template, instructions directing the clinician to answer stage two or go on to stage three were moved ahead of the section to help clarify responses. Based on incorrect responses of four participants regarding the design of a study, the researcher modified the description of “Non-Randomized Controlled Trial Study/Quasi-Experimental Study” to include a broader definition of quasi-experimental. Finally, the statement, “Was there enough ‘clinical’ difference for you to change what you are currently doing in your own practice?” was modified to read, “Was there enough ‘clinical’ difference for you to incorporate these treatment interventions into your own clinical practice?”

Only two specific items were mentioned by the participants on the Follow-Up Questionnaire as particularly confusing. These two items, “research questions” and “was there enough clinical difference to change what you are currently doing” were modified, as reported above, as responses on the completed templates reflected these same issues. In response to one suggestion on the

Follow-Up Questionnaire, the “grey boxes” were removed so that those completing the template might not have space restrictions while typing answers. Statements pertaining to some of the items on the template being redundant or tedious to complete were considered, but changes to the template were not made in response to these as all items on the template are viewed as necessary by the researcher. Parts of the template may be used in isolation for the purpose of some clinicians. These possibilities will be discussed in chapter five. Finally, after reviewing all of the responses on the templates, the researcher modified all questions on the template so that they prompt more personal answers, in hopes that clinicians would take more ownership of their responses rather than answering questions as if they were required for a graded assignment. Specifically, all questions with the word “you” were changed to read “I” or “my” to guide clinicians through asking the questions directly of themselves. See Appendix F for the Final Research Template.

Chapter 5

Discussion

The purpose of this study was to develop a research template to assist music therapy clinicians in accessing clinically relevant information from and evaluating the quality of a research study to participate in evidence-based practice. Development of the template occurred in three stages. First, the researcher consulted the evidence-based literature to determine necessary elements for the template and designed it so that it might be easy for clinicians to use. Next, the template was evaluated by five members of a focus group who provided suggestions for greater clarity or accuracy. Finally, a sample group of music therapists utilized the template to evaluate a variety of research studies and to determine clinically relevant information from those studies. Responses on the completed templates were evaluated and modifications were made as determined necessary based upon those responses, as well as suggestions made by the participants on the Follow-Up Questionnaire.

Future Applications for the Research Template

The research template developed during this study can benefit music therapy clinicians and students in a variety of settings. Current trends in healthcare require that therapists consult current research in making evidence-based clinical treatment decisions. It is necessary for clinicians to read and be able to understand and evaluate the literature so that they might make appropriate

treatment decisions and be able to articulate those decisions to others. This researcher, and several of the focus group members, suggests that this template would be useful within the education setting, particularly when students are learning to read and understand the research literature. This template may help to guide students through the process of deciphering clinically relevant information and help them through the process of making decisions about elements regarding treatment interventions. Additionally, the template provides the opportunity for students to practice evaluating the quality of the studies they read within the classroom setting. As students utilize the template and receive feedback from their instructors, they should be prepared to continue reading and evaluating research in the future to inform their practice decisions.

In addition, the template can serve to assist practicing clinicians, especially those with limited research knowledge, in accessing clinically relevant information from and evaluating current studies. The concept of evidence-based practice in the profession of music therapy is relatively new, as well as misunderstood. Many music therapists would benefit from a course on what evidence-based practice is and a refresher on how to read and evaluate the research literature. This researcher suggests, as did a member of the focus group, that clinicians would benefit from a continuing music therapy education course on how to efficiently use this template. Although many of the items on the template are not new concepts to practicing music therapists, putting these concepts into

the evidence-based framework may be necessary. While clinicians could use this template with no further explanation, the researcher asserts that an introduction to the tenets of evidence-based practice and how to use the template with an evidence-based mindset would yield better results.

Although this template was developed to assist music therapy clinicians in evidence-based practice, it is only the first step toward that goal. Literature on evidence-based practice makes it clear that the highest quality of evidence results from a meta-analysis or systematic review of multiple high quality studies; however, this template was designed to help a clinician evaluate a single study. The researcher posits that this is a necessary starting point for the profession of music therapy. Often, studies published in the field of music therapy are case studies or experimental or quasi-experimental studies with small sample sizes. It is not common for multiple studies on the same topic to exist, therefore, it is difficult, if not impossible, to start this process with systematic reviews.

The researcher suggests that this template may help to encourage this process toward larger, more controlled studies and eventual larger systematic reviews and meta-analyses. If clinicians begin to evaluate single studies with this template, they may begin to seek out other studies that corroborate the evidence presented in a study or conduct their own studies to provide corroborating evidence. As three or more templates are completed on studies with similar outcomes, clinicians may be able to start writing summaries of the research

literature related to particular treatment interventions or clinical questions. These summaries, known as Clinically Appraised Topics (CATs), provide the means for disseminating clinically relevant research information to other clinicians, clients, parents, and administrators resulting in improved practice (Fetters, Figueiredo, Keane-Miller, McSweeney, & Tsao, 2004; Wendt, 2006). Eventually, professionals in the field of music therapy will be able to conduct and access systematic analyses of studies pertaining to individual treatment interventions that will inform clinical decisions within the context of evidence-based practice.

Limitations of this Study

Probably the most notable limitation of this study is the sample of music therapists who agreed to participate in the study. In the profession of music therapy, there is likely a geographic representation of practice philosophy, influenced in part by where clinicians were trained. As there is a regional influence in practices of music therapists, the members of the regional association contacted for participation in this study may be more likely to have an interest in evidence-based practice and research in general. In addition, as previously mentioned, the researcher suggests that music therapists who would agree to participate in a study such as this likely view research as an important part of music therapy practice. In other words, it is not likely that an individual who does not see the value of research would agree to participate in this study. Thus, the sample of music therapists in this study and their responses regarding research on

the Initial Questionnaire may not be representative of the entire population of music therapists. It is likely, however, that this research template will only appeal to music therapists who are interested in evidence-based practice and what that means in terms of being familiar with current research.

The wording of questions or items may have influenced responses on the questionnaires and research template. Responses to the question on the Initial Questionnaire, “What article published in (*Journal Title*) has influenced or impacted the way you practice music therapy or provide treatment to your clients?” may have been limited or discouraged by the phrasing of the question itself. Results indicate that only five participants were able to recall one or more articles, for a total of seven identified articles, out of 42 opportunities across participants. The researcher’s interpretation of these results was that very few music therapists consult the literature to inform their clinical practice. However, it is feasible that had the question been worded differently, or if an extension to the question had been included, such as “or describe how your own clinical practice has been influenced by a research article,” more participants would have been able to respond. It is probable that many clinicians would not be able to recall the title of an article, but would be able to describe elements of previously read research that influenced their practice. Thus, if the researcher used this questionnaire again, such modifications would be made to the questionnaire to elicit more representative responses.

Furthermore, the wording or terminology presented on the template may be unfamiliar to some music therapists yielding results that do not accurately represent the participants' knowledge base. For example, 47% of responses to the prompt, "Describe the treatment intervention(s)/protocol(s)," were descriptions of the study design rather than treatment interventions. It is possible that unfamiliarity with the terms "intervention" or "protocol" may have been perceived by some participants to be related to study design or methodology, whereas other terms commonly used by music therapists, such as task analysis, session plan, or activity, may have yielded more responses related to treatment intervention. If the template is introduced in educational sessions in the future, this terminology can be explained and clarified for desired responses on the template.

The participant sample size may be another limitation to this study. Fourteen music therapists completed the Initial Questionnaire, 12 individuals completed the template on one or more studies, and 11 completed the Follow-Up Questionnaire. Thus, the sample size for the study was relatively small. It is possible that with a larger sample size, years of experience or level of education achieved by participants may have become evident as related factors in percentages of correctly or incorrectly identified information. Thus, these trends would have provided the researcher with a clearer view of the type of music therapist that might benefit the most from the template or education related to the

template. Although the sample size is small, the researcher is confident that modifications made to the template were necessary and will be beneficial to those who use it in the future.

Another possible limitation to this study is that participants did not receive an introduction to evidence-based practice or how to use the template before completing the template on the research studies. The researcher asserts that the best presentation of this template in the future is within the educational context of the classroom or conference training setting in which the function of the template is presented within the context of evidence-based practice. Training prior to completion of the template may have influenced how participants responded to the various items on the template. However, as the purpose was to identify any parts of the template that were not clear or easily understood, this “limitation” most likely served overall to strengthen the outcomes of the study.

Music Therapy Research Literature

Of particular interest to this researcher is the inclusion, or omission, of descriptions of the specific treatment interventions employed in the music therapy studies that are published. The four music therapy articles included in this study were randomly selected from those published in the 2008 issues of *Music Therapy Perspectives* and *Journal of Music Therapy*. They were randomly selected so that they might be a representative sample of the clinical articles published in these journals and so that the quality of the individual studies would not be an

influential factor in their inclusion in the study. It was the intention of the researcher that the quality of the individual studies be left to chance so that the function and effectiveness of the template itself could be determined. Only two of these four studies provided adequate information that a clinician might be able to integrate treatment interventions into their own practice. Although the authors of the other articles may have listed the name or type of interventions they incorporated, however, as one participant said, “no specific protocols were given, just general music therapy techniques.” To truly participate in evidence-based practice, clinicians need to be privy to information regarding exactly how treatment procedures were conducted so that they might know what was or was not found to be most effective. This researcher would encourage researchers and authors to provide detailed descriptions of the treatment interventions they utilized in their studies so that music therapy clinicians might better determine how they can incorporate such information into their own clinical treatment practices.

Conclusion

This study resulted in the development of a research template that can be used by music therapy students and clinicians to access clinically relevant information from a study and evaluate the quality of that study. The researcher suggests that the template will be most effective when presented in educational classroom or conference settings within the context of evidence-based practice.

When the role of research in evidence-based practice is fully understood and valued, music therapists will begin to view the items on the template as important elements in making research-informed clinical decisions. The template is intended as an educational tool. Once clinicians become familiar with the template and using it to evaluate the research literature, it is likely that they will no longer need to use the template to guide them through an article and they will be able to effectively and efficiently read and evaluate a research article.

The researcher asserts that this template will, indeed, be a contribution to the profession of music therapy. It is anticipated that as music therapy students and clinicians are provided with information about evidence-based practice and its role in providing the best possible treatment for our clients, they will seek out research to inform their practice decisions. This template will assist music therapists in evaluating that research and making informed decisions about the role of research in their own clinical practice. With increased attention to research and its role in evidence-based practice, the profession of music therapy will continue to excel in providing quality care to all those who are served.

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Approved by the Human Subjects Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 2/23/2009. HSCL#17854

Appendix A

Internet Information and Statement of Consent

The Department of Music Education and Music Therapy at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

I am conducting this study to better understand the current use of research by music therapy clinicians to inform their own clinical practices. Specifically, I would like to determine whether a Research Template, designed by this researcher, might guide clinicians through the process of accessing and evaluating the research to inform treatment decisions. I would like you to examine the designed research template and to provide your expert opinion on its use within the profession of music therapy, as well as suggestions for improvement. This should take no more than one hour of your time.

Examining the Research Template should cause no more discomfort to you than you experience in your everyday life. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the role of a Research Template in helping music therapy clinicians participate in evidence-based practice. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your responses.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone, mail, or email.

A return email to the sender of this message, the researcher, indicates your willingness to participate in this project and that you are at least age eighteen. If you have any additional questions about your rights as a research participant, you

may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email dhann@ku.edu.

Sincerely,

Robin Edwards
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Approved by the Human Subjects Committee University of Kansas, Lawrence Campus (HSCL). Approval expires one year from 2/23/2009. HSCL#17854

Appendix B

Internet Information and Statement of Consent

The Department of Music Education and Music Therapy at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

I am conducting this study to better understand the current use of research by music therapy clinicians to inform their own clinical practices. Specifically, I would like to determine whether a Research Template, designed by this researcher, might guide clinicians through the process of accessing and evaluating the research to inform treatment decisions. The Initial Questionnaire, completion of the Research Template on three articles, and Follow-up Questionnaire may take up to 3-4 hours of your time, depending on your own level of expertise in reading and evaluating a research study.

The content of the questionnaires and Research Template should cause no more discomfort than you would experience in your everyday life. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of the role of a Research Template in helping music therapy clinicians participate in evidence-based practice. Your participation is solicited, although strictly voluntary. Your name will not be associated in any way with the research findings. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your responses.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone, mail, or email.

A return email to the sender of this message, the researcher, indicates your willingness to participate in this project and that you are at least age eighteen. If you have any additional questions about your rights as a research participant, you

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Sincerely,

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Appendix C

Initial Questionnaire

Please check all that apply. Place your cursor at the front of the box. Then hit the right arrow key one time. Your cursor should be inside the box and your comments will appear in the box!

1) I currently hold a:

Bachelor's Degree in Music Therapy

Graduate Equivalency in Music Therapy

Graduate Equivalency and Master's Degree in Music Therapy

Bachelor's and Master's Degree in Music Therapy (or have completed all coursework toward the Master's Degree, lacking only the thesis)

Doctorate of Philosophy Degree with Emphasis in Music Therapy (or ABD)

Other: _____

2) I am:

Board-Certified Music Therapist

Eligible to sit for the Board Certification in Music Therapy exam and plan to do so within the year

Other: _____

3) I have worked as a clinical music therapist (collectively) for:

1 to 5 years

6 to 10 years

11 to 15 years

16 to 20 years

More than 20 years

*** Please indicate if you worked in another profession before entering the field of music therapy and how many years you worked in that position.

4) I primarily provide music therapy services to the following population(s):

5) Please answer the following questions (a through c) as thoroughly and accurately as possible.

a.) What article published in *Music Therapy Perspectives* has influenced or impacted the way you practice music therapy or provide treatment to your clients?

- a. Title:
- b. Author:
- c. Date:
- d. How did the information presented in this article change how you practice music therapy or directly influence your music therapy treatment techniques? Please specify exactly what you did in your practice in response to this article.

OR

- e. Check here if you cannot recall an article in *MTP* that has influenced your clinical practice. Please indicate the reason below:

I don't often read the research literature

I don't understand the research literature

I haven't found a study directly related to my own practice needs

I read some of the studies, but they don't really tell me how to do the techniques or procedures mentioned

I just can't remember one right now

Other:

Elaborate your reason here if you'd like:

b.) What article published in the *Journal of Music Therapy* has influenced or impacted the way you practice music therapy or provide treatment to your clients?

- a. Title:
- b. Author:
- c. Date:
- d. How did the information presented in this article change how you practice music therapy or directly influence your music therapy treatment techniques? Please specify exactly what you did in your practice in response to this article.

OR

- e. Check here if you cannot recall an article in *JMT* that has influenced your clinical practice. Please indicate the reason below:

I don't often read the research literature

I don't understand the research literature

I haven't found a study directly related to my own practice needs

I read some of the studies, but they don't really tell me how to do the techniques or procedures mentioned

I just can't remember one right now

Other:

Elaborate your reason here:

c.) What article published in **another profession**'s research journal has influenced or impacted the way you practice music therapy or provide treatment to your clients?

- a. Title:
- b. Author:
- c. Date:
- d. How did the information presented in this article change how you practice music therapy or directly influence your music therapy treatment techniques? Please specify exactly what you did in your practice in response to this article.

OR

- e. Check here if you cannot recall an article in *another profession's journal* that has influenced your clinical practice. If you checked 'e,' please indicate the reason below:

I don't often read the research literature

I don't understand the research literature

I haven't found a study directly related to my own practice needs

I read some of the studies, but they don't really tell me how to do the techniques or procedures mentioned

I just can't remember one right now

Other:

Elaborate your reason here:

Appendix D

Follow-Up Questionnaire

1. Approximately how long did it take to complete the research template on an individual study?
2. What questions or parts of the template were difficult to understand or use?
3. What questions or parts of the template were particularly helpful to you?
4. Would you use a template such as this in the future to assist you in participating in evidence-based practice?
5. If you have any other comments or suggestions, please write them here.

***** Thank you for participating in this study. The time and effort you put into completing the questionnaires and templates is invaluable to this study. Thank you!!!**

Appendix E

Initial Research Template for the Evidence-Based Practice of Music Therapy

The concept of evidence-based practice is growing in popularity within health care professions. It is accomplished through considering: 1) current research, 2) clinical experience, and 3) the needs and values of the client before making treatment decisions. This template is designed to help music therapy clinicians identify important and clinically relevant information within a research study and to evaluate the quality of the study itself.

Directions for completing the Template:

1. Read each prompt/question carefully and answer as accurately and thoroughly as possible.
2. Proceed from beginning to end in a systematic manner, try not to “jump around” within the document.
3. To respond to a question or prompt, place your cursor at the front of the grey box, then hit the right arrow key one time. The cursor should now be one space inside the box and typed material will be recorded within the specified area.

**Statements in this font provide suggestions for locating information within the study.*

Step 1: Determine what the present study is about and whether it holds information relevant to your clinical practice

Title:

Author(s):

Journal (Vol/Issue):

Date of Publication:

Population of interest (Who are the participants in this study?) *[Abstract or “Participants” in Method section]:*

How many participants are there?

Purpose of the study (What clinical question(s) does this study address?)
[Abstract or last ¶ before Method section]:

Research Question(s) (if different from Purpose) *[Last ¶ before Method section]:*

Step 2: Identify clinically relevant elements presented in this study

What are the dependent variables? (What skills or behaviors are being measured?)
[Method section]:

How are they being measured? *[Method section under “Measures” or “Equipment”]:*

Describe the treatment intervention(s)/protocol(s) *[Method section]:*

Are the treatment protocols described in enough detail that you could integrate them into your own clinical practice?

What were the true results/treatment outcomes (related to the purpose/goal) *[Results section]?*

Were the results statistically significant *[Results section]?*

What conclusions were drawn about the efficacy of the treatment *[Results or Discussion sections]?*

Are the conclusions of the researcher justifiable based on the results of the study?

Can you generalize the findings of this study to the larger population or a related population? *[Discussion section]:*

Step 3: Evaluate the level or quality of evidence produced by this study

I. Determine the design of this study *[May be stated in Abstract or Method sections. If not clearly stated, make determination based on the following short descriptions.]:*

1. Systematic Review or a Meta-Analysis (Multiple studies with similar purposes analyzed together to determine an overall effect of treatment or outcomes.)
2. Randomized Controlled Trial Study (Single **experimental** study with at least two groups. Participants are **randomly** assigned to a treatment condition or control condition.)

3. Non-Randomized Controlled Trial Study/Quasi-Experimental Design (Single **experimental** study with at least two groups. Participants are assigned to different conditions using methods that are **not** random.)
4. Case Series/Prospective One-Group Study/Well-Designed Non-Experimental Study (Report of observations of a series or group of individuals receiving the same treatment/intervention. Comparisons are made before and after intervention, but with no control group.)
5. Case Report (Report on the treatment outcomes of a single individual, generally an outcome of interest.)
6. Expert Opinion based primarily on anecdotal evidence rather than research/Description of treatment program not based on research

Please Note: The number (1-6) associated with the design of this study will now be referred to as the study's assigned "level of evidence."

II. Additional Quality Measures:

If the design of the study achieved a 1, 2, or 3 rating, please determine quality measures 'a' through 'd' below (indicate with a 'yes' or 'no').

If the study achieved a 4, 5, or 6 rating, please go directly to Roman numeral III.

- a) Do the final analyses of results include all participants who started regardless of those who dropped out for any reason (is the N at the end of the study the same N as at the beginning)?
- b) Does the researcher report statistical significance values (i.e. " p value")?
- c) Is the "sample size" adequate for the design of the study ($N=30$ or greater is often assumed adequate in experimental studies in music; sometimes fewer is okay if population is unique)?
- d) Does the researcher report confidence intervals in the results of the study (generally indicated by CI and a percentage)?

If you answered "no" to any 1 or 2 of these questions, add 1 point to the assigned "level of evidence" for your study design.

If you answered “no” to 3 or all of these questions, add 2 points to the assigned “level of evidence” for your study design.

III. Assign this study’s “Level of Evidence” (Indicate which of the following descriptions matches with your final ‘level of evidence’ score.):

- | | | |
|---------------|---------------------------|--|
| 1 or 2 | Excellent Evidence | This study provides excellent evidence upon which to make clinical decisions. |
| 3 | Good Evidence | This study provides good evidence upon which to make clinical decisions. |
| 4 | Fair Evidence | This study provides fair evidence for informing clinical practice. More evidence is necessary to improve confidence in treatment efficacy. |
| 5 or 6 | Emerging Evidence | Initial work in the area suggests possible benefit of treatment intervention. High quality research needs to be cited or conducted to validate and corroborate the evidence. |

Step 4: Make appropriate decisions based on this evidence regarding the translation of findings into your own clinical practice.

Do the treatment goals and outcomes described in this study relate to the treatment needs of your own client(s)?

If so, how?

Was there enough of a “clinical” difference (the observable or functional difference due to treatment) for you to change what you are currently doing in your own practice?

If so, what will you change, modify, or implement?

Does this study provide enough information that you can make a “prognostic” statement about the expected outcomes of treatment, including, duration and frequency of treatment and expected outcomes?

Final Decision Statement(s): Using the information and “level of evidence” determined above to complete the following statement.

This study provides (excellent, good, fair, emerging) evidence to support the efficacy of (treatment intervention(s)) in treating clients with (diagnosis, symptom(s), behavior(s)).

Choose one of the following:

I will use the information reported in this study to inform my own clinical practice in the following way(s):

I will not use the information reported in this study to inform my own clinical practice because:

Finally, remember that the strongest evidence comes from multiple studies with corroborating outcomes. Continue to look for more studies on this topic to enhance the evidence on which you are basing treatment decisions and consider designing and implementing your own quality study!

Appendix F

Research Template for the Evidence-Based Practice of Music Therapy

The concept of evidence-based practice is growing in popularity within health care professions. It is accomplished through considering: 1) current research, 2) clinical experience, and 3) the needs and values of the client before making treatment decisions. This template is designed to help music therapy clinicians identify important and clinically relevant information within a research study and to evaluate the quality of the study itself.

Directions for completing the Template:

1. Read each prompt/question carefully and answer as accurately and thoroughly as possible.
2. Proceed from beginning to end in a systematic manner, try not to “jump around” within the document.

**Statements in this font provide suggestions for locating information within the study.*

Step 1: Determine what the present study is about and whether it holds information relevant to your clinical practice

Title:

Author(s):

Journal (Vol/Issue):

Date of Publication:

Population of interest (Who are the participants in this study?) *[Abstract or “Participants” in Method section]:*

How many participants are there?

Purpose of the study (What clinical question(s) does this study address?)

[Abstract or last ¶ before Method section]:

Step 2: Identify clinically relevant elements presented in this study

What are the dependent variables? (What skills or behaviors are being measured?)

[Method section]:

How are they being measured? *[Method section under “Measures” or “Equipment”]:*

Describe the **treatment** intervention(s)/protocol(s) (i.e. Independent variables/Types of therapy used to achieve positive treatment results) *[Method section]:*

Are the treatment interventions described in enough detail that I could integrate them into my own clinical practice?

What were the results/treatment outcomes (related to the purpose/goal) *[Results section]?*

Were the results statistically significant *[Results section]?*

What conclusions were drawn about the efficacy of the treatment *[Results or Discussion sections]?*

Are the conclusions of the researcher justifiable based on the results of the study?

Can I generalize the findings of this study to the larger population or a related population? *[Discussion section]:*

Step 3: Evaluate the level or quality of evidence produced by this study

I. Determine the design of this study [*May be stated in Abstract or Method sections. If not clearly stated, make determination based on the following short descriptions.*]:

1= ___ Systematic Review or a Meta-Analysis (Multiple studies with similar purposes analyzed together to determine an overall effect of treatment or outcomes.)

2= ___ Randomized Controlled Trial Study (Single **experimental** study with at least two groups. Participants are **randomly** assigned to a treatment condition or control condition.)

3= ___ Non-Randomized Controlled Trial Study/Quasi-Experimental Design (Single **experimental** study with at least two groups. Participants are assigned to different conditions using methods that are **not** random. Quasi-Experimental design is not a pure experimental study; methods may or may not be random.)

4= ___ Case Series/Prospective One-Group Study/Well-Designed Non-Experimental Study (Report of observations of a series or group of individuals receiving the same treatment/intervention. Comparisons are made before and after intervention, but with no control group.)

5= ___ Case Report (Report on the treatment outcomes of a single individual, generally an outcome of interest.)

6= ___ Expert Opinion based primarily on anecdotal evidence rather than research/Description of treatment program not based on research

Please Note: The number (1-6) associated with the design of this study will now be referred to as the study's assigned "level of evidence."

Before Going On:

If the design of the study achieved a 1, 2, or 3 rating, please determine quality measures (indicate with a 'yes' or 'no') in section II.

If the study achieved a 4, 5, or 6 rating, please skip II and go directly to Roman numeral III.

II. Additional Quality Measures:

a) Do the final analyses of results include all participants who started regardless of those who dropped out for any reason (is the N at the end of the study the same N as at the beginning)?

b) Does the researcher report statistical significance values (i.e. “ p value”)?

c) Is the “sample size” adequate for the design of the study ($N=30$ or greater is often assumed adequate in experimental studies in music; sometimes fewer is okay if population is unique)?

d) Does the researcher report confidence intervals in the results of the study (generally indicated by CI and a percentage)?

If you answered “no” to any 1 or 2 of these questions, add 1 point to the assigned “level of evidence” for your study design.

If you answered “no” to 3 or all of these questions, add 2 points to the assigned “level of evidence” for your study design.

III. Assign this study’s “Level of Evidence” (Indicate which of the following descriptions matches with your final ‘level of evidence’ score.):

- | | | |
|------------|---------------------------|--|
| ___ 1 or 2 | Excellent Evidence | This study provides excellent evidence upon which to make clinical decisions. |
| ___ 3 | Good Evidence | This study provides good evidence upon which to make clinical decisions. |
| ___ 4 | Fair Evidence | This study provides fair evidence for informing clinical practice. More evidence is necessary to improve confidence in treatment efficacy. |
| ___ 5 or 6 | Emerging Evidence | Initial work in the area suggests possible benefit of treatment intervention. High quality research needs to be cited or conducted to validate and corroborate the evidence. |

Step 4: Make appropriate decisions based on this evidence regarding the translation of findings into your own clinical practice. Ask yourself the following questions:

Do the treatment goals and outcomes described in this study relate to the treatment needs of my own client(s)?

If so, how?

Was there enough of a ‘clinical’ difference (the observable or functional difference due to treatment) to incorporate these treatment interventions into my own clinical practice?

If so, what will I change, modify, or implement?

Does this study provide enough information that I can make a “prognostic” statement about the expected outcomes of treatment, including, duration and frequency of treatment and expected outcomes?

Final Decision Statement(s): Using the information and “level of evidence” determined above to complete the following statement.

This study provides (excellent, good, fair, emerging) evidence to support the efficacy of (treatment intervention(s)) in treating clients with (diagnosis, symptom(s), behavior(s)).

Choose one of the following:

 I will use the information reported in this study to inform my own clinical practice in the following way(s):

 I will not use the information reported in this study to inform my own clinical practice because:

Finally, remember that the strongest evidence comes from multiple studies with corroborating outcomes. Continue to look for more studies on this topic to enhance the evidence on which you are basing treatment decisions and consider designing and implementing your own quality study!
