

THESIS

A SURVEY OF MUSIC THERAPISTS' ATTITUDES  
TOWARD EVIDENCE-BASED PRACTICE

Submitted by

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## ABSTRACT

### A SURVEY OF MUSIC THERAPISTS' ATTITUDES TOWARD EVIDENCE-BASED PRACTICE

Background: Evidence-based practice is the confluence of research evidence, practitioner expertise, and client preferences applied in a clinical context. An expansion of the evidence-based medicine movement developed during the early 1990s, evidence-based practice (EBP) has garnered significant attention from healthcare researchers, academics, and clinicians through the alternating endorsement and criticism it receives. Opinions about EBP are likely to vary greatly within a given field, yet little research has been completed to systematically investigate how music therapists view EBP. Given the American Music Therapy Association's inclusion of "evidence-based" in the definition of music therapy, a lack of recent, systematically-gathered information about music therapists' perceptions of EBP highlights the question: What are music therapists' attitudes toward evidence-based practice?

Objective: The primary purpose of this study was to survey professional music therapists' attitudes toward evidence-based practice (EBP). This study also sought to determine how music therapists' attitudes toward evidence-based practice systematically vary based on familiarity with EBP, age, year entering the field, years of experience, level of formal academic training, primary philosophical orientation, and additional music therapy designations.

Methods: Board-certified music therapists (MT-BCs) were surveyed using a 26-item measure of attitudes toward evidence-based practice (adapted from Johnston et al., 2003). After giving informed consent, participants were provided with a definition of EBP and then completed the adapted Johnston et al. (2003) measure, answered additional items measuring the

strength of their attitudes toward EBP, and supplied demographic and professional status information. A total of 646 participants provided results included in the final dataset.

Results: On a scale from 1 (*lowest*) to 6 (*highest*), 646 participating MT-BCs indicated a mean average response of 4.31 ( $SD = .65$ ) on an adapted scale of attitudes toward evidence-based practice. Participants reported a mean level of familiarity with EBP of 5.11 ( $SD = 1.35$ ,  $n = 643$ ) on a scale from 1 (*very unfamiliar*) to 6 (*very familiar*). Familiarity with EBP was positively correlated with and predicted attitudes toward EBP. Participants' age in years and calendar year entering the profession were associated with attitudes toward EBP. Participants' attitudes toward EBP differed based on primary philosophical orientation, level of training, and additional training designations.

Conclusions: Responses from this study suggest MT-BCs are very familiar with evidence-based practice and possess generally favorable attitudes toward EBP. Increasing music therapists' familiarity with EBP may predict a moderate increase in their attitudes toward EBP (adjusted  $r^2 = .057$ ). Instrument revision and study replication are recommended due to methodological and sampling concerns. Music therapists' supportive attitudes toward EBP might indicate their willingness to engage in EBP in clinical practice.

Keywords: Evidence-based practice, evidence-based medicine, clinical decision-making, music therapy

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## INTRODUCTION

“Evidence-based” is an increasingly ubiquitous term in a variety of contexts. Originally described in the medical field, evidence-based medicine was most famously defined by Sackett, Rosenberg, Gray, Haynes, and Richardson in 1996 as “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients... integrating individual clinical expertise with the best available external clinical evidence from systematic research” (p. 71). Evidence-based medicine was endorsed by Sackett et al. (1996) as a systematic process for increasing the effectiveness of medical doctors in treating their patients through the review and implementation of high-quality research evidence.

The concept of “evidence-based practice” is simply an extension of the evidence-based medicine model to other treatment modalities. Indeed, in healthcare fields, evidence-based practice (EBP) has most frequently been conceptualized as the amalgamation of the best current research evidence available with individual clinical expertise and client values and preferences to inform decisions affecting client care (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). It is postulated that EBP increases the value of clinical interventions, as employing treatments indicated for specific health conditions should affect measurable outcomes. In fact, the process of EBP continues to be adapted to fit in other fields as well such as in education (Snowling & Hulme, 2011) and public management (Meier & O’Toole, 2009).

Yet, the concept of EBP is not without criticism. Experts in rehabilitation fields as diverse as speech-language pathology (e.g., Roulstone, 2011; Kamhi, 2011), physical therapy (e.g., Salbach & Jaglal, 2010), occupational therapy (e.g., Bennett & Bennett, 2000), and music therapy (e.g., Abrams, 2010) have voiced or otherwise acknowledged the wide range of opinions about EBP’s role in applied healthcare settings. Some have argued that the EBP model’s reliance

on randomized control trials (RCTs) as the highest standard of measuring the utility of a treatment modality is infeasible or inappropriate for developing fields that are strapped for research funding. Moreover, there is little agreement as to what constitutes research evidence, as the concept of evidence differs across philosophical paradigms (e.g., positivist vs. constructivist). Opinions about EBP are likely to vary greatly within a given field, yet little research has been completed to systematically investigate how healthcare practitioners view EBP.

Evidence-based practice continues to become part of the vernacular of the field of music therapy. In 2005, the American Music Therapy Association (AMTA) changed their definition of music therapy to include the term “evidence-based.” According to AMTA: “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.). Although AMTA has incorporated EBP into their definition of music therapy, there is currently a scarcity of research on music therapists’ thoughts, feelings, and experiences with evidence-based practice. If music therapists hold negative associations toward EBP, they might not adhere to its principles. Gathering data about music therapists’ attitudes may indicate their willingness to actually implement the tenets of evidence-based practice.

The purpose of this study is to survey music therapists’ attitudes about evidence-based practice. This study also seeks to determine if and how professional music therapists view, think about, and engage in evidence-based practice differently. Moreover, this study will investigate how music therapists’ attitudes about evidence-based practice differ based on age, year entering the field, years of experience, level of formal academic training, primary philosophical orientation, and additional music therapy designations.



## A SURVEY OF MUSIC THERAPISTS' ATTITUDES TOWARD EVIDENCE-BASED PRACTICE

Over the past few decades, the adjective “evidence-based” has been rapidly adopted across several industries and professions. Originating in the medical field as evidence-based medicine (or evidence-based healthcare), the evidence-based movement has garnered significant attention from healthcare researchers, academics, and clinicians through the alternating endorsement and criticism it receives (Lipworth, Carter, & Kerridge, 2008). While the term may have several connotations, “evidence-based” generally refers to the acquisition, critical evaluation, and utilization of quality research evidence to inform decision-making in a given context. Additionally, most supporters of an evidence-based approach would advocate incorporating the decision-maker’s personal expertise and stakeholders’ preferences alongside research knowledge when enacting a decision (e.g., Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000).

Employing evidence-based clinical decision-making, specifically in healthcare environments, is believed to increase the quality of client outcomes. Today, in healthcare fields, evidence-based medicine has expanded into evidence-based practice, in part, “to reflect the benefits of entire health care teams and organisations adopting a shared evidence-based approach” (Dawes et al., 2005, “Discussion,” para. 4).

### **Music Therapy**

Music therapy is a healthcare field wherein practitioners utilize music as a therapeutic medium to support the habilitation, rehabilitation, or maintenance of clients’ functioning across several domains. Music therapists design and apply treatment interventions to address their clients’ speech-language, physical, sensorimotor, cognitive, social, emotional, or academic needs

within the context of therapeutic relationships. The American Music Therapy Association (AMTA) is the main professional organization supporting the advancement of the music therapy field in the United States.

Music therapists work across several populations in a variety of treatment settings. According to AMTA (2012), approximately 16% of music therapists work in geriatric facilities, 15% in children's facilities and schools, 13% in medical settings, 11% in mental health settings, 9% in some form of self-employment or private practice, and 36% in all other settings. The distribution of populations served is similar, with 18% of music therapists working with mental health consumers, 15% with developmentally disabled individuals (including autism), 11% with medical clients, 10% with older adults and patients with Alzheimer's disease, 6% with neurological disorders, and 40% with all other populations.

Music therapy interventions have been categorized in several ways but generally involve active or passive involvement in therapeutic music experiences. Bruscia (1998) described four basic music therapy methods including composition, improvisation, creation, and receptive methods. Composition is in the intentional creation of new music such as fill-in-the-blank songwriting about coping skills for adolescents with developmental disabilities, or songwriting to reminisce and reflect upon a client's life accomplishments in end-of-life care. Improvisation may also involve the construction of original compositions but is differentiated from composition due to the extemporaneous nature of improvising. Improvisation experiences might be employed to encourage participation in treatment and decrease negative symptomatology of individuals with psychotic disorders, or to promote and sustain joint attention behaviors with children with autism.

Creation or re-creation involves the use of pre-composed music such as client-preferred songs. Music therapists do not necessarily re-create music for mere purposes of client performance or entertainment; rather, re-creation is largely utilized to achieve functional outcomes. For instance, an adolescent client in a residential setting may be motivated to learn how to play a guitar song heard on the radio, whereas the therapist is incorporating the song in a music therapy session to address the client's goal areas of increased attentiveness, self-esteem, and appropriate social skills. Lastly, receptive methods is a blanket term for any experiences wherein music is "received" by clients. Listening to and discussing music or engaging in music-assisted progressive muscle relaxation are both examples of receptive methods. Therapy experiences involving movement to music or the combination of music with other arts (e.g., drawing to music) are other examples of music therapy methods that are not clearly linked to Bruscia's categorizations but might be classified as receptive methods (Davis, Gfeller, & Thaut, 2008).

Entry-level training in music therapy includes an AMTA-approved baccalaureate or master's-level course of study as well as completion of a formal music therapy internship. Training includes coursework in musical foundations (e.g., music theory, history, composition, improvisation, music ensembles), clinical foundations (e.g., psychopathology, lifespan development, counseling, therapy principles), music therapy (e.g., history, assessment, treatment methods, treatment populations, research, practica), and general education. Music therapists complete a minimum of 1,200 practical hours across pre-internship clinical practicum placements and a final professional-level internship once all coursework is completed (American Music Therapy Association, n.d.). There are currently over 70 AMTA-approved music therapy training programs in the United States and Canada.

In the United States, music therapists are typically credentialed by the Certification Board for Music Therapists, earning the designation MT-BC (Music Therapist – Board Certified) after completing an AMTA-approved program of study and passing a board certification exam. To remain certified, MT-BCs must complete 100 hours of continuing education or take and pass another examination every five years. There are approximately 5,500 MT-BCs in the United States.

As the field has expanded, so too have the AMTA's Standards of Clinical Practice: To reflect the many settings and contexts in which music therapists practice, AMTA has penned standards for music therapists working in or with addictive disorders, intellectual and developmental disabilities, educational and school settings, older adults, medical settings, mental health settings, physical disabilities, wellness, private practice, and consultancy positions. The field of music therapy has begun to appear more frequently in media reports and online resources. Specialized training opportunities within the field of music therapy continue to emerge, and there has been a noteworthy increase in designations available to practitioners seeking additional research- and experience-based training within certain philosophical models or in support of their work with specific populations. For example, music therapists can gain additional training designations to enhance their work with persons with neurologic impairment (Neurologic Music Therapy), with fragile children (Neonatal Intensive Care Unit Music Therapy), and in end-of-life care settings (Hospice & Palliative Care Music Therapy).

Meanwhile, in the public arena, awareness of this small field seems to be increasing as well. The year 2011 was especially noteworthy as professional music therapists were portrayed as main characters in a major motion picture as well as in a novel by a best-selling author. Given the expansion of the music therapy discipline, the charge of demonstrating the efficacy and

effectiveness of music-based interventions with various populations may be more important than ever.

### **Historical Development of Evidence-Based Medicine**

To understand the initial emergence and growth of the evidence-based medicine movement, one must consider its antecedents seen in Archie Cochrane's (1972) renowned text *Effectiveness and Efficiency: Random Reflections on Health Services* in which he explored and critically evaluated the current state of assessment and treatment procedures employed in medical care. While similar healthcare concepts have existed historically (cf. Sackett, Rosenberg, Gray, Haynes, and Richardson, 1996), Cochrane (1972) emphasized the role of randomized control trials (RCTs) and their systematic review in determining cause-effect relationships across all aspects of healthcare. Unlike empirically weaker forms of quantitative inquiry, the methodological vigor inherent in RCT designs best allows the investigator to comment upon a treatment intervention's potential causality in eliciting an outcome. Specifically, the intentional addition of double-blinding and random assignment to treatment conditions in RCTs serves to implicate the effect of the independent variable (i.e., the treatment intervention) on the dependent variable (i.e., healthcare outcomes). In other words, in a positivist paradigm of research investigation, RCTs help researchers, educators, and clinicians accurately determine "what works" for treating specific diagnoses, conditions, and syndromes by limiting threats to internal validity as well as by diminishing the probability of Type I errors (i.e., rejecting null hypotheses when in fact no group differences exists, or finding "false positives"). While a single well-designed RCT cannot definitively conclude a healthcare intervention *causes* specific outcomes, results found through the systematic review of multiple RCTs can robustly support causal claims

of an intervention's efficacy. The procedural nature of conducting systematic reviews helps limit bias and other threats to validity when answering specific research questions.

Beyond the prospective benefits of funding additional RCTs, Cochrane (1972) also explored the idea of evidence-based health care by stressing the importance of valid relevant research, the potential for harm from interventions, the accuracy of tests and assessments, and the utility of predictive measures and prognostic factors in planning care for patients. His critiques of the status quo in the medical community preceded a paradigm shift across the next few decades. That is, Cochrane's efforts laid the groundwork for the creation of the first Cochrane Center in 1992 “to facilitate the preparation of systematic reviews of randomised controlled trials of health care” (Cochrane Collaboration, 2012) and the development of the evidence-based medicine movement in the early 1990s.

The term “evidence-based medicine” (EBM) first appeared in the medical literature by Guyatt in 1991 (as cited in Dawes et al., 2005, “Discussion,” para. 4). An early definition of EBM was “to help provide our patients with care that is based on the best evidence currently available—‘evidence-based medicine.’ Evidence-based medicine emphasizes the need to move beyond clinical experience and physiological principles to rigorous evaluations of the consequences of clinical actions” (Oxman, Sackett, & Guyatt, 1993, p. 2093). Oxman et al. (1993) identified application of contemporaneous research findings as a crucial component of engaging in EBM; likewise, they described the implementation of EBM by providing a basic guide for accessing articles and evaluating their validity (p. 2094). Similarly, other nascent definitions of EBM tended to focus on critical appraisal of recent research evidence “as the basis for clinical decisions” (e.g., Rosenberg & Donald, 1995, p. 1122). As the 1990s progressed, EBM received much greater attention in the research literature: A MEDLINE search of EBM

yielded no citations between 1966 and 1991, 17 articles between 1992 and 1994, and 132 between 1994 and 1996 (McAlister, Graham, Karr, & Laupacis, 1999, p. 236). However, this expansion revealed growing concerns about EBM from practicing clinician-researchers and reflected a multitude of attitudes toward the topic.

Despite variations in the theoretical and practical understanding of this new conceptualization of quality medical care, EBM was most famously defined, and perhaps most definitively, by Dr. David Sackett and colleagues in 1996. In their brief yet critical reflection, “Evidence based medicine: What it is and what it isn’t,” Sackett et al. (1996) provide an integrated, comprehensive definition of EBM:

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. By individual clinical expertise we mean the proficiency and judgment that individual clinicians acquire through clinical experience and clinical practice. Increased expertise is reflected in many ways, but especially in more effective and efficient diagnosis and in the more thoughtful identification and compassionate use of individual patients’ predicaments, rights, and preferences in making clinical decisions about their care. By best available external clinical evidence we mean clinically relevant research, often from the basic sciences of medicine, but especially from patient centred clinical research into the accuracy and precision of diagnostic tests (including the clinical examination), the power of prognostic markers, and the efficacy and safety of therapeutic, rehabilitative, and preventative regimens. External clinical evidence both invalidates previously accepted diagnostic tests

and treatments and replaces them with new ones that are more powerful, more accurate, more efficacious, and safer. (pp. 71-72)

This oft-quoted definition foreshadowed several current definitions and conceptualizations of EBP. Similarly, Sackett et al. (1996) named the RCT (“randomised trial”) and the systematic review of several RCTs as the “‘gold standard’ for judging whether a treatment does more good than harm” (p. 72). Recognizing that not all clinical questions necessitate the use of RCTs, Sackett et al. (1996) acknowledge a lack of such research knowledge requires a clinician “must follow the trail to the next best external evidence and work from there” (p. 72). Moreover, Sackett et al. (1996) both reviewed the benefits of embracing EBM and debunked several allegations of its naysayers, including the claim that EBM “will be hijacked by purchasers and managers to cut the costs of healthcare” (p. 72).

To better grasp what “next best external evidence” means (Sackett et al., 1996, p. 72) and to assist clinicians in the process of critical appraisal, the Oxford Centre for Evidence-Based Medicine (OCEBM) first established “levels of evidence” (Levels) in November 1998 to delineate the comparative strength of peer-reviewed articles and other forms of evidence as informed by their research design (OCEBM Levels of Evidence Working Group, 2011). This act of comparing quantitative designs established a hierarchy of research quality wherein, generally, RCTs and systematic reviews (SRs) of RCTs serve as the strongest forms of evidence while single subject designs, “best practices” guidelines, and expert opinions are (usually) considered the weakest. Other designs such as observational studies and non-RCT experimental studies that employ a control group may provide moderately weak to moderately strong evidence for a clinical question.



Although the OCEBM’s Levels have sophisticated with age, their global structure remains quite similar. In 2011, the OCEBM released their “Levels of Evidence #2” which specifies hierarchies of evidence as informed by the type of research question. See Table 1 for a hierarchy of research evidence based on the question: “Does this intervention help?” The Levels provide guidance to medical healthcare providers on how to evaluate the quality of whatever research is available to them. Consider, if a physician with very limited reading time were to consult unfamiliar research articles related to a clinical question, he or she might gain more insight reviewing and critiquing SRs and RCTs rather than lower levels of evidence (cf. Sackett et al., 1996; Davidoff, Haynes, Sackett, & Smith, 1995).

Table 1

*OCEBM 2011 Levels of Evidence for Question “Does This Intervention Help?”*

Strength of Evidence	Corresponding Research Designs
Step 1 (Level 1*)	Systematic review of randomized trials or <i>n</i> -of-1 trials
Step 2 (Level 2*)	Randomized trial or observational study with dramatic effect
Step 3 (Level 3*)	Non-randomized controlled cohort/follow-up study
Step 4 (Level 4*)	Case-series, case-control studies, or historically controlled studies
Step 5 (Level 5*)	Mechanism-based reasoning

*Note.* Adapted from OCEBM Levels of Evidence Working Group’s “Levels of Evidence #2,” also known as “The Oxford 2011 Levels of Evidence” (2011). The levels of this table have been represented vertically for clarity. Level 1 is considered the strongest level of research evidence and Level 5 is considered the weakest level of research evidence. The complete table is available at <http://www.cebm.net/index.aspx?o=5653>

\* “Level may be graded down on the basis of study quality, imprecision, indirectness (study [Patient-Intervention-Comparison-Outcome (PICO)] does not match questions PICO), because of inconsistency between studies, or because the absolute effect size is very small; Level may be graded up if there is a large or very large effect size” (OCEBM Levels of Evidence Working Group, 2011).

## **Current Conceptualizations of Evidence-Based Practice**

As the understanding of EBM evolved through the 1990s, a considerable increase in amount of literature, increase in variety and specificity of clinical questions, and delay of implementing new research knowledge into practice sparked a similar paradigm shift in allied healthcare fields and the social sciences (Bennett & Bennett, 2000). In 1997, the United States Department of Health & Human Services, Agency for Healthcare Research and Quality (formerly: Agency for Health Care Policy and Research), began its Evidence-based Practice Center Program to “develop evidence reports and technology assessments on topics relevant to clinical and other health care organization delivery issues...” (“Overview,” para. 1). Now, evidence-based practice (EBP) is understood as the logical outgrowth of EBM and includes other allied healthcare disciplines such as psychology, clinical social work, physical therapy, occupational therapy, speech-language pathology, and music therapy. Viewing EBP as a multidisciplinary intersection that is inclusive of EBM “emphasises the fact that evidence-based practitioners may share more attitudes in common with other evidence-based practitioners than with non evidence-based colleagues from their own profession who not embrace an evidence-based paradigm” (Dawes et al., 2005, “Discussion,” para. 4). This direct connection between EBM and EBP—as articulated by Dawes et al. (2005) in their “Sicily Statement” reviewing the various understandings of EBP—is notably absent from much of the EBP literature.

Although it has been defined several ways, EBP commonly refers to a five-step process: formulating an answerable research question, gathering resources, critically appraising gained evidence, applying evidence, and re-evaluating the application of evidence to identify areas of improvement (Straus & Sackett, 1998; Dawes et al., 2005; Rappolt, 2003). This cyclical structure leads to the generation of new research and clinical practice questions. That is, by articulating

and answering questions through the EBP process, one will likely encounter new questions that can subsequently be considered through an EBP approach as well. While several variations of this process have been presented (e.g., the earlier four-step model of Rosenberg & Donald, 1995; the six-step model by Schardt & Meyer, 2010; and the seven-step model by Gillam & Gillam, 2006), these five steps seem to be fundamentally represented in most alternative models.

The first step of EBP involves generating an answerable question for a specific clinical or research context. This can be achieved using the “PICO” format (Straus & Sackett, 1998). “P” refers to the clinical problem, including the client or population in question, such as adults with cancer that experience significant self-reported levels of pain in the hospital setting. “I” refers to an intervention to be utilized to address the problem, whether this is a treatment manual, treatment modality, structured program, or other specific approach. In experimental terms, the “I” is the treatment condition. “C” is the comparison treatment and may refer to a placebo condition, treatment-as-usual (TAU), or a control condition. Using the example of adults in an oncology setting, a clinician may seek to know how use of a client-created music-assisted relaxation recording (I) compares with the use of journaling (C) for addressing self-reported levels of pain in the hospital setting. Finally, “O” stands for outcome and is best assessed using a standardized measure that has been psychometrically validated. Such instruments that have been tested for evidence of their internal consistency, accuracy in predicting other criteria, etc., are considered to be *valid* and *reliable* assessments. Here is the revised clinical inquiry presented in PICO question format: For adults in an oncology setting (P), do clients self-report lower levels of pain (O) following the use of music-assisted relaxation recordings (I) or therapeutic journaling (C)? PICO questions can be tailored to fit a specific context and, in addition to therapeutic outcomes, are also suitable for addressing other topics including diagnostic accuracy,

assessment, prognosis, etiology, prevention, and continuing education (Straus & Sackett, 1998, p. 340).

Following the creation of an answerable clinical question, the second step in EBP is seeking out the best available evidence to address the question (Straus & Sackett, 1998). Internet databases have provided several venues for gathering evidence to answer a PICO. Organizations such as the Cochrane Collaboration and the Campbell Collaboration provide systematic reviews to the public, and search engine aggregators such as Google Scholar crawl the web to provide free full-text editions of many research articles in addition to citation listings. While databases such as PsycINFO, EBSCO Host, and Academic Search Premier do not provide free access to primary research findings, some services such as MEDLINE and PubMed routinely make articles available to the public at no cost. Accessing quality evidence may also challenge evidence-seekers to be patient and creative in their searching (Gillam & Gillam, 2006). Search terms and construct terminology utilized in the literature may differ from descriptors familiar to clinicians. Moreover, subtle differences in search engine construction across databases may pose unique impediments to users. For instance, on some search engines, typing in “evidence-based practice” may not yield the same results as entering “evidence based practice.” Once research literature is located, the individual must determine which studies seem most pertinent to the original clinical question.

After seeking out the most relevant research, a clinician may begin the process of critical appraisal, the third step of EBP. Critical appraisal is a process wherein the validity and utility of the acquired evidence is determined (Straus & Sackett, 1998). Critical appraisal involves not only the evaluation of the level of evidence based on a study’s design but also of the quality of the selected design; research design (or *credibility*, Baker & McLeod, 2011) and quality are

independent concepts (Fey, 2006). There are several critical appraisal methodologies, yet they appear to share a focus on the evidence's validity, clinical relevance, and contextual applicability (Dawes et al., 2005). For example, one method of critical appraisal involves assigning points for "yes" answers to questions regarding a study's quality. This approach asks the appraiser to consider the presence of comparison conditions in addition to a treatment condition, random assignment to treatment and control conditions, group homogeneity, blinding, validated measures, statistical significance, and practical significance in results (i.e., large effect sizes) to help ascertain the quality of a given study (Gillam & Gillam, 2006, p. 307). To evaluate qualitative research, the use of other critical appraisal questions and quality indicators are warranted, such as the inclusion of a comprehensive overview of the research setting and sampling processes employed (Gray, 1997; Krefting, 1990). The task of critiquing evidence may seem daunting to the unfamiliar appraiser; however, EBP workshops and systematic tools may assist clinicians in achieving competence in critical appraisal (Taylor, 1997).

As clinician expertise and patient values and preferences are crucial components of EBP, some researchers also advocate for critical appraisal of these "internal" forms of evidence. Gillam and Gillam (2006) created ordinal scales of student-parent factors and clinician-agency factors to be evaluated, hypothesizing the relative weight of influences such as cultural values, family financial resources, and agency policies that might affect the implementation and applicability of external (research) evidence (pp. 306-309). Although EBP is described as the confluence of high-quality research evidence with clinician expertise and patient values and preferences, little discussion exists in the literature about the systematic integration of these three components.

The fourth step of EBP is the actual application of the critically appraised evidence. Again, in EBP clinical decision-making, research evidence is not applied independently of the clinician's expertise and the client's preferences; rather, these three influences are integrated when applying an intervention (Sackett, 1997). Yet, balancing each component of EBP when making a clinical decision may have more theoretical than pragmatic value. As such, applying the best clinical evidence in a fideliou s manner may not be a straightforward task. Baker and McLeod (2011) suggest clinicians may easily apply research-suggested interventions only when the client's profile is homogenous to participants represented in the reviewed studies *and* when the preferences of the client or caregiver support the recommended treatment.

Finally, to complete the systematic process stemming from the original PICO, the last step of EBP is evaluating the outcome resulting from one's application of an EBP-informed intervention. Using the PICO example from earlier, a desired outcome of lower self-reported levels of pain can be evaluated by administering a valid pain assessment tool both before and after the selected treatment intervention is applied. Treatment outcomes may support or fail to support research findings (Gillam & Gillam, 2006), and variations from expected outcomes serve as critical thinking prompts for the observer. For example, the clinician may ponder what about the specific context, client presentation, and application of the intervention may have led to variations in client response (Finn, 2011). The success of treatment outcomes may be evaluated in other ways as well such as through self-appraisal and reflection (Sackett, 1997) or as supported by the agreement of other observers (e.g., client caregivers, professional peers).

Beyond healthcare fields, other industries and professions have assimilated EBP approaches (e.g., public management, Meier & O'Toole, 2009; education, Snowling & Hulme, 2011; policy, Bennett, n.d.). As the tenets of EBP continue to proliferate across multiple

industries, this expansion invites the question: What do people think about EBP, and how do their feelings and behaviors reflect endorsement of its principles?

**Proponents' attitudes toward evidence-based practice.** Proponents of EBP support its implementation through the production and dissemination of training protocols, best practices handbooks, and treatment guidelines based on current research evidence. For example, recent primary articles about EBP offer summaries of EBP Internet resources (Speer, 2011), insights on teaching EBP (Tickle-Degnen, 2000a), recommendations for coalescing research findings with client and family preferences (Tickle-Degnen, 2000b), words of encouragement for those interested in research (Salbach, 2010), and general advice on “doing” EBP as a clinician (Ratner, 2011). Similarly, academician-led Internet services like OTseeker (occupational therapy), speechBITE (speech-language pathology), and PEDro (physical therapy) provide clinicians with free search engines for accessing evidence to help them perform EBP.

Beyond sharing resources, EBP proponents strive to articulate the value of accepting an EBP approach within their fields (e.g., Salbach, 2010; Spring, 2007; Chwalisz, 2003). These proponents state that new students benefit from adopting an EBP framework, insofar as it increases the quality of students' training and helps prepare them for the needs of future clients—given that the majority of students in healthcare and related human service fields are aspiring to careers as practitioners. Additionally, proponents practicing in fields identified as complementary or alternative medicine (CAM) have also recognized the need for extensive research validation to integrate “new” methods into the mainstream. That is, as Chiappelli, Prolo, and Cajulis (2005) stated, “The integration of CAM into traditional Western medicine depends as much on the fundamental research that demonstrates its clinical effectiveness as on the practical, contextual and intelligible nature of its dissemination” (p. 457). As EBP continues to integrate

into the mainstream of the healthcare industry, practitioners whose professions are still developing or are significantly smaller than others will likely have to carry the burden of proof to demonstrate the efficacy and effectiveness of their treatment modalities.

In addition to explaining the values of endorsing such an approach, EBP proponents often debunk associated misconceptions about the process (Jennings & Loan, 2001; Wormer & Thyer, 2010). For example, researchers seem to frequently remind their readers that EBP is not a prescriptive, “cookbook” approach to delivering healthcare interventions (Sackett et al., 1996). Authors are similarly apt to remind clinicians that the process of EBP is about applying research, not performing it (Bennett, n.d.), as adapting to an EBP paradigm may be perceived as burdensome by healthcare providers that are lacking time and resources to fully engage in the process (Sackett et al., 1996). EBP proponents also create arguments for EBP’s acceptance from scientific and public health perspectives such as in Sackett’s frank commentary on the art of delivering medical interventions: “Art kills” (Zuger, 1997).

**Challengers’ attitudes toward evidence-based practice.** Of course, EBP is not without its detractors and critics. One of the most frequently encountered critiques of EBP is of its implied definition of evidence and the associated hierarchical view of research designs (Rycroft-Malone et al., 2004). Such studies call for the expansion of types of “evidence” (e.g., local context, collective knowledge, clinical experience) that can answer research questions (Rycroft-Malone et al., 2004). Other research has questioned the validity of RCTs as the highest level of evidence as Concato, Shah, and Horwitz (2000) demonstrated that well-implemented cohort and case-control designs (i.e., “lower” levels of evidence) “did not systematically over-estimate the magnitude of the associations between exposure and outcome as compared with the results of randomized, controlled trials of the same topic” (p. 1890).



Similarly, the role of qualitative research in informing EBP has not been clearly defined or agreed upon. Qualitative research is believed by some to “help bridge the gap between scientific evidence and clinical practice,” yet a positivist, determinist orientation to gaining research knowledge might suggest constructivist viewpoints fall outside the realm of EBP (Green & Britten, 1998, p. 1230). Presenting an alternative response to the relegation of qualitative studies as lower levels of evidence, Jack (2006) stated that “the state of the science has progressed to a point where qualitative research should no longer be viewed primarily as a precursor to quantitative studies” (p. 282). While some of EBP’s critics endorse inclusion of qualitative research designs and incorporation of “practice-based evidence” to achieve higher levels of external validity (see Barbour, 2000; Barkham & Mellor-Clark, 2003), qualitative research may still “seem unscientific and anecdotal to many medical scientists” (Green & Britten, 1998, p. 1230).

Likewise, some of EBP’s challengers have also claimed that EBP endorses specific philosophical models or research paradigms in an attempt to squelch methodological diversity in healthcare. For instance, Cohen, Stavri, and Hersh (2004) categorized a decade’s worth of EBM criticisms and identified five themes. These include that (a) EBM “is based on empiricism, misunderstands EBM is based on empiricism, misunderstands or misrepresents the philosophy of science, and is a poor philosophic basis for medicine;” (b) EBM’s “definition of evidence is narrow and excludes information important to clinicians;” (c) “EBM is not evidence-based, that is, it does not meet its own empirical tests for efficacy;” (d) the utility of “applying EBM to individual patients is limited;” and (e) “EBM threatens the autonomy of the doctor/patient relationship” (Cohen et al., 2004, p. 37).

Finally, the validity of an EBP approach has sometimes been questioned in non-medical fields. For instance, in social work, Webb (2001) has argued that EBP “entraps professional practice within an instrumental framework which regiment, synthesizes and manages social work within a technocratic framework of routinized operations” (p. 71). He suggests that EBP requires clinical interventions to be delivered objectively and that social work interventions do not predictably result in outcomes via cause-effect relationships the same way “law-like regularities” have been observed in the natural sciences (Webb, 2001, p. 73).

### **Evidence-Based Practice in the Field of Music Therapy**

How has the EBP movement been considered in the field of music therapy? For one, there has been somewhat limited discussion of EBP in peer-reviewed music therapy articles. Some theoretical and non-empirical articles (e.g., Wigram, 2002) have explored the role of EBP in music therapy. Similarly, a few RCTs and systematic reviews have been published over the last 10 years, many of which have garnered some quantitative support for the efficacy of music therapy methods (e.g., Gold, Heldal, Dahle, & Wigram, 2008; Gold, Wigram, & Elefant, 2010; Hilliard, 2005). Similar to criticisms of few RCTs in other allied health professions, almost all reviews have noted a need for increased research rigor, sample sizes, and statistical power (e.g., Bradt, 2012; Vink, Bruinsma, & Scholten, 2003).

A number of Cochrane reviews involving music therapy have appeared in the last decade. With acquired brain injury populations, a systematic review of seven studies indicated music therapy, in the form of rhythmic auditory stimulation, can benefit gait retraining (Bradt, Magee, Dileo, Wheeler, & McGilloway, 2010). When applied with stroke patients, rhythmic auditory stimulation appeared to improve the gait parameters of velocity, stride length, cadence, and symmetry. However, the effect of music therapy on other outcomes such as upper extremity

functioning, communication, pain, and mood was unable to be determined due to a lack of useable data.

Gold, Wigram, and Elefant (2010) reported similar results in their systematic review of music therapy for autistic spectrum disorders. Gold et al. (2010) found music therapy superior to placebo therapy in addressing the verbal and gestural communication skills of children with autism; however, they could only include three studies ( $n = 24$ ) in their systematic review. Comparable modest outcomes and accompanying methodological concerns have been reported in systematic reviews of music therapy for end-of-life care (Bradt & Dileo, 2011; Hilliard, 2005) and schizophrenia and similar psychotic illnesses (Mössler, Chen, Heldal, & Gold, 2011). Reviews of music therapy for depression symptoms (Maratos, Gold, Wang, & Crawford, 2009) and dementia (Vink, Bruinsma, & Scholten, 2011) have been inconclusive. These endeavors may highlight the difficulty of conducting high-quality experimental research in a field with few practitioners and even fewer researchers. Limited data sets and a relatively low number of participants involved in individual studies may greatly reduce statistical power, inhibiting the field's attempts to meet the demands of EBP by demonstrating any true efficacy and effectiveness of its methods.

As expected, the range of opinions and views expressed about EBP in music therapy is reflective of the diversity of thought toward the topic in other healthcare fields. EBP proponents in music therapy present clinicians with ideas of how to bridge the tenets of EBP with clinical music therapy practice (e.g., Vink & Bruinsma, 2003). As a parallel, EBP challengers in music therapy offer different understandings of EBP (e.g., Abrams, 2010) or provide alternate views of EBP's role in the music therapy field (e.g., Edwards, 2005, 2003).

In a recent featured article in the *Journal of Music Therapy*, Bradt (2012) masterfully described practical challenges and possible solutions related to the implementation of randomized controlled trials (RCTs) in the field. She juxtaposed her sound advice on tackling RCT methodological issues such as randomization and blinding with a critical evaluation of the role of RCTs in the evolution of the field. Bradt (2012) reminded readers that “RCTs do not provide answers to all clinical questions” (p. 121) yet “reviews of the music therapy research literature indicate a need for increased scientific rigor in the design and conduct of RCTs” (p. 146). Acknowledging the eclectic nature of the field and its practitioners, she recognized the need for additional forms of research knowledge while calling music therapy clinicians and researchers to meet the challenge of conducting more robust RCTs. Still, little is known about actual professional music therapists' attitudes toward EBP.

Dale Taylor (1984) completed a dissertation surveying professional music therapists' opinions regarding entry-level competencies, and responses to his items related to theory and research represent some of the only systematically documented attitudes toward evidence-based practice in the field. He presented proposed competencies alongside 8-point Likert-type scales measuring professionals' agreement as to their necessity for preparing the entry-level music therapy professional. Six of Taylor's (1984) items were somewhat related to the present concept of EBP (see Table 2).

Taylor (1984) found that most music therapists strongly agreed that entry-level practitioners should be able to identify and implement changes in a music therapy program with nearly 80% of respondents selecting a 7 or 8 ( $M = 7.225$ ), paralleling the need to change or adapt a treatment intervention over time, when indicated, in an EBP paradigm. Similarly, most

professionals supported “the necessity of competence in use of assessment findings of others” with 79% percent of respondents selecting a 7 or 8 ( $M = 7.180$ ) (p. 144).

Table 2

*Responses to EBP-Related Entry-Level Competencies (Taylor, 1984, pp. 122-125)*

Competency (Item #)	<i>M</i>	<i>SD</i>	Mode
Identify needs for & implement changes in music therapy program (24)	7.225	1.246	8
Cite information from clinical papers in music therapy (49)	4.609	2.041	6
Interpret and utilize the assessment findings of others (79)	7.180	1.215	8
Cite information from clinical research papers (109)	4.482	1.988	5
Cite information from theoretical papers in music therapy (129)	4.421	1.970	5
Define 25 terms used to report research (145)	4.883	1.998	5

*Note.* Responses were rated on an agreement scale from 1 (*lowest*) to 8 (*highest*). Professional music therapists completed the survey ( $N = 641$ ).

However, responses to the remaining items were less consistent. Mean ratings of agreement circled the 8-point scales’ midpoints (ranging from 4.421 to 4.883) and variability was considerably larger (standard deviations ranged between 1.970 and 2.041) for the following competencies: cite information from clinical papers in music therapy, cite information from clinical research papers, cite information from theoretical papers in music therapy, define 25 terms used to report research. Taylor (1984) posited that the lack of consensus “may reflect variations in practitioner familiarity with research technique, terminology, and sources” (p. 151) and that “it was not clear whether practitioners saw little value in such information, or whether they simply did not feel that it would help an entry level therapist treat clients” (p. 156). He cited educational differences (69.9% had a bachelor’s degree or less, 27.3% completed at least a master’s degree) as a possible moderator for differences of opinion but nevertheless concluded with implications for modifications in existing discipline standards.

According to Taylor (1984), “more emphasis needs to be placed on bringing entry level practitioners to an appreciation of the importance of conducting and reporting research, its terminology, procedures for research analysis, and applicability of research literature” (p. 305). These results seem to suggest that music therapy professionals may support the learning and teaching of EBP concepts for use in clearly practical circumstances (e.g., revising treatment intervention strategies when needed, utilizing others’ assessment data); yet, understanding theory, research, and related terminology may be seen as having less practical significance for the entry-level clinician. However, these data must be considered in context: the findings are nearly 30 years old and were collected during a quite different healthcare landscape than seen today. The previous interpretations sought to apply EBP to a dataset before the terms EBM or EBP appeared in the literature.

More recently, in the United States, the American Music Therapy Association (AMTA) has taken actions that seem to endorse the acceptance of EBP in the field. A primary example: the term “evidence-based” was added into AMTA’s definition of music therapy in 2005 which reads: “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.). Similarly, AMTA has set a Strategic Priority on Research (n.d.) wherein the organization has reported its support of evidence-based policies, protocols, and practice guidelines. These actions seem to be in contrast with the range of attitudes toward EBP expressed by MT researchers. Moreover, although AMTA has incorporated EBP into their definition of music therapy there is currently a scarcity of knowledge about the music therapy population’s thoughts toward, feelings about, and experiences with EBP. In other words, a lack of recent, comprehensive, systematically-gathered

information about music therapists' perceptions of EBP highlights the question: What are music therapists' attitudes toward evidence-based practice?

### **Attitudes Toward Evidence-Based Practice**

Attitudes have been an important theoretical concept of practical concern throughout much of the history of social psychology (e.g., Allport, 1935; Fishbein & Ajzen, 1975). According to Eagly and Chaiken (1993), an attitude is defined as “a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor” (p. 1), and the subject of one's attitudes may be referred to as an attitude object. The key feature of attitudes—differentiating them from habits, beliefs, values, and opinions is the presence of *evaluation*. Attitudes also differ from personality features (e.g., openness to experience, extraversion) and moods as “they are always held in relation to a specific object” (Chaiken, 2001, p. 900). In fact, attitudes are formed as the result of an evaluation response to an attitude object; that is, people do not hold attitudes until they have opportunities to encounter and respond to the attitude object. Chaiken (2001) discussed two facets of evaluation existing in attitudes: direction (i.e., positive or negative) and intensity (i.e., the degree to which a positive or negative view is held). For instance, a man could have a generally favorable attitude toward gun control (*direction*) but his view may not be especially strong due to his interest in hunting deer as a hobby (*intensity*).

Attitudes are considered the products of one's cognitive, affective, and behavioral processes (Eagly & Chaiken, 1993). Put another way, an individual's thoughts, feelings, and behaviors collectively reflect attitudes toward an object, person, or idea. Whereas habits refer to consistencies in behaviors and beliefs might reflect primarily cognitive processes, the concept of attitudes is more comprehensive in nature. Though the following two terms may be used as

synonyms, attitudes tend to be narrower in scope than values (Chaiken, 2001). For instance, values may include global ideals or aspirations (e.g., citizenship, an end to all human trafficking), while attitudes tend to be held toward less broad-reaching attitude objects (e.g., campaign finance reform).

Eagly and Chaiken's (1993) tripartite structure (*affective, behavioral, cognitive*) is one prominent organized understanding of what reactions may stem from attitudes as well as what processes lead to their original and ongoing formation. Affective processes may include feelings and emotions, moods, and sympathetic nervous system responses to an attitude object. Behavioral processes are typically directly observable actions exhibited in relation to an attitude object, but may also include behavioral intentions or plans to engage in a behavior related to the attitude object. Cognitive processes include thoughts, ideas, and beliefs about an attitude object (see Eagly & Chaiken, 1993, pp. 10-15). Alternatively, Cacioppo, Petty, and Geen (1989) provided a model of attitudes that sought to bridge gaps they identified between prior psychological theories and psychophysiological findings. Their homeostasis model of attitudes views attitudes as a one-dimensional construct, informed by automatic, physiological responses to attitude objects. Cacioppo et al. (1989) believe this model may operate as a more parsimonious conceptualization of attitudes, as one's intensity and direction of evaluation may be inferred by physiological responses; however, this specific model has received limited attention in the research literature over the past two decades.

Visser, Bizer, and Krosnick (2006) argue that individual components comprising an attitude's overall strength might be better predictors of individuals' perceptions, cognitions, and behaviors in relation to an attitude object. They provide an interesting review of what research has been conducted on strength-related attitude attributes and identify such underlying constructs



including attitude *importance*, *knowledge*, *accessibility*, *certainty*, and *ambivalence*. Attitude *importance* “refers to the amount of psychological significance a person ascribes to an attitude” and is often investigated by asking someone to specify how personally important the attitude object is to that individual or to what extent the person cares about the attitude object (Visser et al., 2006, p. 3). *Knowledge*, in this context, means how much a respondent knows about an attitude object and may be investigated through reporting one’s subjective perceptions of “knowing” or through factual questions on a test.

Attitude *accessibility* refers to how swiftly or clearly attitudes toward an object can be retrieved from one’s memory. The length of time needed to report an attitude may indicate the strength of the link between attitude and object in one’s memory, which might represent the individual’s evaluative response of that object. *Certainty* relates to an individual’s level of confidence in a specific attitude. Attitude *certainty* is usually measured by asking respondents how certain they are of their attitudes as well as their perceived accuracy of their feelings toward the attitude object. *Ambivalence* is a more complicated component of attitude strength as it refers to “the degree to which a person has both favorable and unfavorable reactions to an object” (Visser et al., 2006, p. 4). A high level of ambivalence can be inferred when individuals report high levels of liking and disliking an attitude object, and can also be investigated by asking people to subjectively report to what degree they feel internal conflict in relation to the attitude object. Visser et al. (2006) acknowledge the (often-underplayed) distinctness of several strength-related attributes which may have important implications for measuring, understanding, and inducing change in attitudes toward objects. By the same token, they recognize that an integrated understanding of the nature, structure, and function of attitudes and attitude strengths will require considerable ongoing research.

Beyond disagreements regarding the underlying structure of attitudes, the measurement of attitudes poses unique challenges to researchers and respondents. While many attitudes questionnaires ask explicit questions, the manner in which items are presented may affect observed responses. For one, a response to an attitudes question is dependent upon a respondent's past experience with the attitude object as well as the recency and outcomes of those interactions. Social desirability and impression management might also influence such responses. In attitude questionnaires, scaling decisions play a role in how respondents interpret items as well. Perhaps a score of 0 on a scale from 0 to 10 represents the absence of an attitude to one participant although others believe a score of 0 to mean the presence of a negative attitude toward the object. When employing rating scales, using a range inclusive of positive and negative numbers (e.g., -3 to +3) may better convey the intent of such items (Schwarz, 2001).

Accurately measuring and understanding the formation of attitudes presents further complications. First, when viewing attitudes as the sum of affective, behavioral, and cognitive processes, it is difficult to determine *which* responding process informs the others. Global attitudes may be adjusted to resolve any perceived dissonance between actions and thoughts. Festinger's (1957) classic theory of cognitive dissonance argues for a person's human need for consistency between actions and thoughts. If one's thoughts and actual behaviors do not align, in the attitudinal sense, the individual is believed to experience cognitive dissonance and may, in response, adjust internal thoughts and feelings to present a more cohesive representation to self and others. For example, Chaiken, Wood, and Eagly (1996) found that when people perform a certain behavior (e.g., signing a petition) they later reason that they had a congruent disposition with the present attitude object all along.

Additionally, one's mere exposure to a stimulus may influence the individual's attitudes about it. Zajonc (1980) demonstrated that introducing even simple visual stimuli to individuals shapes their affective responses to those barely-familiar objects. The phenomenon known as the mere exposure effect suggests affective conditioning may be a simple and automatic process involved in attitude formation. Similarly, research by Bargh (1997) suggested that people evaluate a stimulus as being favorable or unfavorable in less than a second, even when the object is only a word. How might such hastily-formed affective responses, in turn, influence one's thoughts and behaviors? Finally, attitudes may be less enduring and stable than once thought, and ongoing interactions with an attitude object often influence attitudes over time (e.g., Chaiken, 2001; Eagly & Chaiken, 1993). The aforementioned concerns highlight the complexity of attitude formation (initial and ongoing) and could suggest attempts to measure attitudes only provide a transient, context-driven snapshot of an individual's true attitudes.

However, attitudes, collectively speaking, and their measurement remain important because they provide a window to individuals' inferred, current states of being that are not directly observable. Both individual-level and group-level responses to questions about a given topic or concept present valuable information about respondents' attitudes. Additionally, individuals' attitudes may be measured and thereby inferred using both quantitative and qualitative methodologies. Inquiries of attitudes may present results of interest to the public or to the general membership or leaders within different disciplines. Specifically, considering the promotion of EBP by several professional organizations, measuring clinician attitudes toward EBP may predict healthcare practitioners' willingness to actually engage in EBP. Given the propagation of EBP in healthcare fields and the growth of evidence-based approaches in other

professions, an assessment of researcher and clinician attitudes toward evidence-based practice would seem timely and warranted.

### **Practitioners' Attitudes Toward Evidence-Based Practice**

Naturally, researchers' attitudes toward EBP are far more present than clinicians' in the literature, prompting inquiries about how actual healthcare practitioners feel, think about, and engage in EBP. Although some aforementioned research has demonstrated that practitioners can learn and increase their self-reported skills in EBP, information on clinicians' attitudes toward EBP is somewhat scarce. In 2001, Curtin and Jaramazovic surveyed occupational therapists' attitudes toward EBP using both quantitative and qualitative methodologies. They found that occupational therapists ( $n = 500$ ) reported accepting and supportive attitudes toward EBP, yet approximately 40% of respondents identified a need for additional training in its methods. Employing a qualitative design, Dubouloz, Egan, Vallerand, and von Zweck (1999) identified three themes of what EBP "is" through their interviews with eight occupational therapists: Evidence-based practice is seeking understanding, related to research, and a potential threat to occupational therapists (p. 447). Analyzing EBP from a different perspective, Aarons, Sommerfield, Hecht, Silovsky, and Chaffin (2009) investigated the effect of an EBP intervention and concurrent monitoring of its implementation on staff turnover in a children's services system. Although the researchers anticipated higher turnover when implementing EBP, the 2 x 2 (EBP or Non-EBP intervention x Fidelity monitoring or No monitoring) experimental design results suggested otherwise: Twenty-nine months after group assignment, those in the EBM x Monitoring group demonstrated significantly lower percentages of staff turnover (Aarons et al., 2009).

These and other investigations (e.g., Bennett et al., 2003) have generally revealed clinicians' support of the EBP model through the use of questions of agreement, frequency scales, and belief and value statements; however, the instruments used in many studies lack evidence for their psychometric validation. This suggests a need for an increased, valid and reliable understanding of practitioners' perceptions of EBP as well as knowledge of what predictors affect attitudes toward EBP.

Few measures have thoroughly investigated practitioners' attitudes toward EBP. Salbach and Jagal (2010) created and initiated validation efforts on an EBP confidence scale for healthcare providers; however, their assessment measures clinicians' perceived knowledge, skills, and abilities to perform EBP rather than their attitudes toward the construct. Aarons (2004) constructed a brief measure of attitudes toward EBP (i.e., the EBP Attitude Scale, EBPAS) which he validated across clinicians representing several disciplines ( $n = 322$ ). Exploratory factor analysis and confirmatory factor analysis supported a four-dimension structure to this assessment which included the *appeal* of EBP, the likelihood of adopting EBP *requirements*, clinicians' *openness* to new forms of practice, and perceived *divergence* between research-based interventions and everyday practice (Aarons, 2004).

Although the EBPAS has demonstrated its reliability, its individual items seem to primarily measure practitioners' willingness to adopt new and research-based treatment interventions as well as their receptiveness to manualized therapy. For example, one of the items in the *openness* subscale is "I like to use new types of therapy/interventions to help my clients" (Aarons, 2004, p. 72). Additionally, an item from the *appeal* subscale reads, "If you received training in a therapy or intervention that was new to you, how likely would you be to adopt it if it was intuitively appealing?" (Aarons, 2004, p.72). It is unclear how these items align with the

tenets of EBP: How does a treatment intervention's novelty relate to its clinical effectiveness? Later work by Aarons and Sawitzky (2006) demonstrated positive relationships between a constructive organizational culture and EBPAS subscales, perhaps revealing the practitioners' receptiveness to organizational change rather than knowledge, skills, abilities to perform or specific attitudes toward EBP.

Fortunately, Johnston, Leung, Fielding, Tin, and Ho (2003) offer a validated assessment with a broader measure of attitudes toward evidence-based practice. These researchers sought to develop a measure of knowledge, attitudes, and behaviors related to EBP for use in undergraduate medical education at the University of Hong Kong. After an initial review of themes seen in EBP educational assessment materials, Johnston et al. (2003) used a semi-structured interview questionnaire with a focus group of 10 senior students to create the initial survey. The content of the survey was designed to address students' knowledge about EBP, attitudes toward EBP, practice of EBP, actual use of EBP, and anticipated future use of EBP. Next, evidence of face validity and content validity was gathered through discussion of the draft questionnaire by an international panel of EBP specialists, medical educators, and psychometricians. The focus group evaluated the comprehensibility and relevance of the proposed measure, resulting in a 47-item assessment. The first draft included 36 categorical response items presented on Likert-type agreement and adjective scales and 11 items involving estimation, dichotomous choices, or open-ended responding.

The first complete version of the assessment was administered to 159 senior (fifth-year) as well as 293 second- and third-year undergraduate medical students at the University of Hong Kong (Johnston et al., 2003). Participants ranged in ages between 21 and 29 years yet over 90% were 23 or 24 years old. Approximately two of every three participants were male. Items were

included in principal components factor analysis using varimax rotation and the following criteria were used to sort items into factors: pairwise deletion of missing values, eigenvalues equal to or greater than 1, and factor loading scores of 0.4 or higher (Johnston et al., 2003, p. 995). Five items were eliminated as they did not meet the identified factor loading threshold.

Following this phase of test refinement, factor analysis of the fifth-year sample revealed a four-dimension structure including *future use of EBP* (Cronbach's alpha = 0.76), *attitudes toward EBP* (Cronbach's alpha = 0.79), *EBP knowledge* (Cronbach's alpha = 0.88), and *personal application and use of EBP* (Cronbach's alpha = 0.75). The Scree plot for the fifth-year sample indicated that the factors explained 50.7% of the variance. Results from the second- and third-year sample were similar, again supporting the four-factor structure of *future use of EBP* (Cronbach's alpha = 0.88), *attitudes toward EBP* (Cronbach's alpha = 0.74), *EBP knowledge* (Cronbach's alpha = 0.80), and *personal application and use of EBP* (Cronbach's alpha = 0.71). In the second- and third-year sample, the four-factor structure explained 50.4% of the variance, similar to the fifth-year sample. However, a few items were loaded in different factors and were weaker performers across the two samples, leaving only 26 response items for analysis in the larger second- and third-year sample. Interfactor correlation coefficients were computed for each factor and no significant correlations were found between them, supporting the dimensions' orthogonality.

Although this tool was designed to measure knowledge, attitudes, and behaviors in relation to EBP practice this researcher believes the instrument represents, globally, an effective and reliable measure of attitudes toward EBP. Based on the earlier review of attitudes literature, strength-related variables such as knowledge and aspects of responding to attitude objects such as behavioral intentions may play a very important role in predicting, understanding, and

inferring respondents' true attitudes. The existence of an *attitudes toward EBP* subscale may seem to complicate matters. In fact, the *attitudes toward EBP* subscale presents items that seem to be designed to evoke an affective-cognitive response. For example, an item states evidence-based medicine is 'cook-book' medicine that disregards clinical experience, and respondents are asked to rate their level of agreement on a six-point scale. To someone familiar with the definition of EBP, this item could be interpreted as a factual question. According to Sackett et al. (1996), EBP is *not* a cookbook approach to treatment; however, to someone less experienced with the tenets of EBP this could appear to be an opinion question. Thus, the *attitudes* subscale, on its own, could be perceived as a misnomer: it is not a comprehensive measure of attitudes. Instead, the *attitudes* subscale elicits participants' perceptions as a smaller component of a bigger picture of their global attitudes toward EBP. Johnston et al.'s (2003) questionnaire could also be interpreted as complementary to the tripartite structure of attitudes but was not specifically designed according to this structure. That is, the *attitudes* and *EBP knowledge* scales measure affective and cognitive processes (i.e., agreement with feeling, opinion, and belief statements) whereas the *personal application of EBP* scale measures behavioral processes (i.e., past behaviors, recent behaviors, and behavioral intent). By examining the diversity of its items, the *future use of EBP* scale appears to globally measure affective, behavioral, and cognitive processes. Just as no one perfect way to measure or understand attitudes has been discussed in the social psychology literature, the extant assessments designed to measure attitudes toward EBP (and their latent variables) also reflect this lack of consensus.

### **Purpose of Proposed Study**

The primary purpose of this study was to survey professional music therapists' attitudes toward evidence-based practice (EBP) in the discipline. This review of literature has



demonstrated a need for identifying the broader music therapy population's perceptions of EBP beyond those published by researchers. Does the greater music therapy population possess generally negative or positive perceptions of EBP? Given the paradigm shift implied by EBP and the subsequent actions taken by the professional music therapy organization in its support, a more thorough understanding of music therapists' attitudes toward EBP was warranted. If attitudes toward EBP are highly divergent—as research editorials might suggest—music therapy practitioners might not adhere to its principles. In other words, gathering data about music therapists' attitudes may indicate their willingness to actually implement the tenets of evidence-based practice.

This study also sought to determine if and how professional music therapists view, think about, and engage in EBP differently as predicted by their self-reported familiarity with EBP and as predicted by professional identity and demographic variables studied in previous surveys of music therapy professionals (Taylor, 1984). That is, this study investigated how music therapists' attitudes toward evidence-based practice systematically vary based on familiarity with EBP, age, year entering the field, years of experience, level of formal academic training, primary philosophical orientation, and additional music therapy designations.

## **Hypotheses**

While relatively few research studies have investigated practitioners' attitudes, most results have suggested healthcare providers hold positive attitudes toward EBP. Doctors and nurses have tended to report favorable attitudes toward EBM and EBP in systematic surveys (e.g., White-Williams et al., 2013; Flores, Lee, Bauchner, & Kastner, 2000). Given previous research has demonstrated that other allied healthcare professionals have responded similarly (e.g., Bennett et al., 2003; Curtin & Jaramazovic, 2001), music therapists were hypothesized to

also report favorable attitudes toward EBP. Hypothesis 1: Music therapists will report positive attitudes toward EBP.

Previous research has suggested that while healthcare professionals widely support EBP, they have often reported being less familiar with some of its methods. For instance, Curtin and Jaramazovic (2001) indicated that 40% of occupational therapists they surveyed had reported a need for additional training in EBP. Similarly, in a survey of 488 physical therapists, Jette et al. (2003) found that over 80% of respondents agreed or strongly agreed that EBP is necessary to practice physical therapy and that research is useful in everyday practice; however, the majority of participants indicated that they did not understand specific terms including “meta-analysis,” “odds ratio,” and “confidence interval.” While most physical therapists surveyed by Jette et al. (2003) had reported they had access to relevant research evidence in the forms of paper journals, practice guidelines, and online databases, very few of these participants reported a high frequency of accessing articles and completing database searches per month. This appears to suggest that although these physical therapists realized how to access research evidence, their actual participation in EBP in their clinical work occurred much less frequently. Insufficient time and inapplicability to the current patient population were cited as the two most significant barriers to applying EBP in physical therapists’ clinical work.

Research by Majid et al. (2011) investigating nurses’ attitudes toward evidence-based practice has led to similar findings. That is, Majid et al.’s (2011) survey of 1,486 nurses working in hospitals in Singapore also indicated positive attitudes toward EBP alongside concerns of limited time and inconsistent knowledge of EBP and statistical jargon. Likewise, music therapists seem to have, historically, supported research in the field but have been dissatisfied by the amount of research in the field. In 1980, Nicholas and Gilbert surveyed music therapists and

found that positive attitudes toward research yet no relationship between attitudes toward research and knowledge about research. Given these survey findings with varied populations, music therapists participating in the present study were hypothesized to differ in individual subscale scores. Specifically, the *knowledge about EBP* and the *personal application and use of EBP* subscales include items regarding the process of engaging in EBP, and similar items used in other surveys and with other groups have tended to elicit lower scores than those asking about global attitudes toward the concept. Therefore, in this study, music therapists were hypothesized to report lower scores on these two subscales and higher scores on the others. Hypothesis 2: Music therapists will have higher scores on the *attitudes toward EBP* and *future use of EBP* subscales than on the *knowledge about EBP* and *personal application and use of EBP* subscales.

Repeated exposure to and familiarity with an attitude object tends to increase the observer's preference for the object (cf. Bornstein, 1989; Zajonc, 1980). As exposure to an attitude object increases, individuals may respond more positively because the object is comprehended and processed more easily, in turn leading to increased preference (Ward, Goodman, & Irwin, 2013; Jacoby & Dallas, 1981). Hence, music therapists reporting greater familiarity with EBP are hypothesized to also report more positive attitudes toward EBP. Hypothesis 3: Music therapists' familiarity with EBP will predict their attitudes toward EBP. The more a music therapist is familiar with EBP, the more she or he will report favorable attitudes toward EBP.

Additionally, demographic variables including participant age, year entering the field, and length of experience have been included in music therapy survey research and may serve as indirect measures of familiarity with EBP (AMTA, 2012; Taylor, 1984, Nicholas & Gilbert, 1980). Since EBP is a concept that has emerged over the past two decades, professionals that are

older, have greater amounts of experience, and that have not entered the discipline recently were hypothesized to express less favorable views toward EBP. Alternatively, music therapists that were younger, that entered the field more recently, or that report less years of experience were hypothesized to hold more favorable attitudes toward EBP than their more seasoned colleagues.

Hypothesis 4: Music therapists' age in years will predict their attitudes toward EBP. The younger a music therapist is, the more she or he will report favorable attitudes toward EBP.

Hypothesis 5: Music therapists' year entering the field will predict their attitudes toward EBP. The more recent a music therapist entered the field, the more she or he will report favorable attitudes toward EBP.

Hypothesis 6: Music therapists' length of experience in years will predict their attitudes toward EBP. The greater amount of experience a music therapist reports, the less she or he will report favorable attitudes toward EBP.

Beyond these demographics, level and type of training may also contribute to participants' familiarity with EBP. In their research surveying physical therapists, Jette et al. (2003) found that clinicians reporting master's- or doctoral-level training tended to report greater education, skill, and knowledge necessary for applying EBP. For instance, odds ratios indicated a greater likelihood of familiarity with evidence search strategies, critical appraisal skills, and EBP terms amongst those with training beyond the baccalaureate level. Therefore, professional music therapists with training beyond the baccalaureate level were hypothesized to hold more favorable views toward EBP as their training has more likely introduced them to the topic.

Hypothesis 7: Music therapists reporting academic training beyond the baccalaureate level will report more favorable attitudes toward EBP than those with entry-level training.

Likewise, professionals with additional music therapy training designations (current or former) were hypothesized to endorse more favorable views toward EBP than those that have not

held additional designations. This might reflect additional familiarity with EBP through discussions at such trainings. Hypothesis 8: Music therapists reporting additional training designations will report more favorable attitudes toward EBP than those that do not report additional training designations.

Professionals reporting current or former designations were hypothesized to differ in their attitudes toward EBP based on the general or specific nature of their additional training.

Professionals that have held one or more designations related to work with specific populations (i.e., Neurologic Music Therapist (NMT), Neonatal Intensive Care Unit Music Therapist (NICU-MT), and Hospice & Palliative Care Music Therapist (HPMT)) were hypothesized to hold more favorable attitudes toward EBP in music therapy than professionals that have held one or more designations related to general work with treatment populations (i.e., Fellow of Association of Music and Imagery (FAMI), Nordoff-Robbins Music Therapist (NRMT)). Hypothesis 9: Music therapists with the training designations NMT, NICU-MT, or HPMT will report more favorable attitudes toward EBP than those with the training designations FAMI or NRMT.

Additionally, professionals that have held designations related to both general and specific music therapy work were hypothesized to hold more favorable attitudes toward EBP than professionals that have held additional designations related to only general work with treatment populations. Hypothesis 10: Music therapist with training designations NMT, NICU-MT, or HPMT *and* FAMI or NRMT will report more favorable attitudes toward EBP than those with training designations from only one of the two categories.

Similarly, music therapists endorsing behavioral, cognitive-behavioral, or biomedical as their primary philosophical orientations were hypothesized to hold more favorable attitudes toward EBP than those primarily endorsing humanistic or psychoanalytic orientations. This

difference in views was hypothesized due to the more specific, outcomes-focused goals of the behavioral, cognitive-behavioral, and biomedical philosophical orientations in treatment settings. Hypothesis 11: Music therapists with behavioral, cognitive-behavioral, or biomedical philosophical orientations will report more favorable attitudes toward EBP than those with humanistic or psychoanalytic philosophical orientations. Figure 1 presents hypothesized relationships between aforementioned variables and participants' attitudes toward EBP in music therapy.

Finally, Visser, Bizer, and Krosnick (2006) suggested the importance of investigating individuals' strength of attitudes in determining their perceptions of an attitude object. Attitude strength has been conceptualized in several ways and may be explained by latent factors such as attitude importance, accessibility, and ambivalence. As attitude strength does not refer to a single construct (Miller & Peterson, 2004; Holland, 2003), attitude strength appears to be a component of an individual's attitude structure. Consequently, music therapists indicating stronger attitudes toward EBP on five novel strength-related items were hypothesized to also report more favorable attitudes toward EBP as measured by the Johnston et al. (2003) measure. Hypothesis 12: Music therapists reporting higher scores on the strength-related items will also report more favorable attitudes toward EBP.

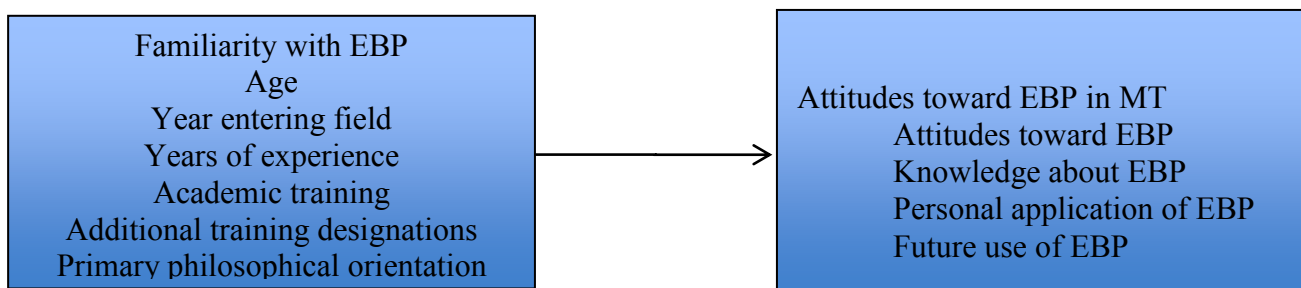


Figure 1. Hypothesized relationships between predictor variables and participants' attitudes toward evidence-based practice in music therapy.

## METHOD

### **Overview**

Participants completed an electronic standardized survey measuring attitudes toward evidence-based practice in music therapy. The survey was created using SurveyMonkey. Individualized electronic links to access the survey were sent to all current board-certified music therapists (MT-BCs) that were credentialed by The Certification Board for Music Therapists (CBMT) and had previously opted in to release their personal information for approved research participation requests. Participants were told the survey was completely voluntary and that their individual responses would be kept confidential. No monetary or other material incentives were provided to individuals for their participation in the survey. Institutional Review Board exemption status was granted through Colorado State University's Research Integrity & Compliance Review Office.

### **Participants**

Participants included professional music therapists currently holding the music therapy designation MT-BC. As of February 27, 2013, there were 5,258 MT-BCs living in the United States and abroad that allowed their information to be released for approved requests through the CBMT. From this sample, 158 MT-BCs had previously opted out of future contact from SurveyMonkey. The remaining 5,100 prospective participants were contacted via a mass email sent by SurveyMonkey. Six respondents asked to be removed from future mailings and three emails were undeliverable. On the informed consent page, eight prospective participants asked to leave and did not continue on to the rest of the survey. Eight-hundred fifty-nine participants consented to continue and completed some portion of the survey, indicating a response rate of

16.34%. From this group of respondents, 646 voluntarily confirmed submission of their survey responses for data analysis.

Six-hundred forty-six MT-BCs submitted valid survey responses to be analyzed. In this sample, 586 participants (90.7%) reported their gender as female and 50 (7.7%) reported their gender as male. One participant reported his gender as transgender male and another identified his gender as remale (0.2% each). Eight participants did not report gender (1.2%). Participants' ages ranged from 22 to 72 years ( $M = 37.42$ ,  $SD = 12.24$ ). Participants reported the year they entered the music therapy profession which ranged from 1963 to 2013 ( $M = 2001.5$ ,  $SD = 10.46$ ). Participants also reported the length of their experience as music therapists in number of years which ranged from 0 to 49 ( $M = 10.81$ ,  $SD = 10.01$ ). Frequency distributions of participants' self-reported level of academic training, years of experience (grouped by researcher), primary philosophical orientation, additional credentials, additional music therapy designations, and regional location are reported in Table 3.

Table 3

*Frequency Distributions of Demographic Variables*

Variable (Total Respondents)	<i>n</i>	%
Level of training ( $N = 644$ )		
Less than Bachelor's / Other	1	0.2
Earned Bachelor's degree	233	36.2
Some post-graduate coursework	110	17.1
Earned Master's degree	255	39.6
Earned Doctoral degree	45	7.0
Years of experience ( $N = 626$ )		
0 to 5 years	257	41.1
6 to 10 years	143	22.8
11 to 20 years	123	19.6



21 to 30 years	62	9.9
31 or more years	41	6.5
Primary philosophical orientation ( $N = 633$ )		
Behavioral	74	11.7
Cognitive-behavioral	187	29.5
Humanistic	171	27.0
Psychoanalytic	11	1.7
Biomedical	53	8.4
Other	137	21.6
Current and former professional credentials beyond MT-BC ( $N = 646$ )		
RMT	105	16.3
CMT	12	1.9
ACMT	3	0.5
Current and former additional music therapy designations ( $N = 646$ )		
FAMI	26	4.0
NICU	59	9.1
NMT	184	28.5
NRMT	6	0.9
HPMT	12	1.9
Other*	28	4.3
Regional location ( $N = 641$ )		
GLR	155	24.2
MAR	134	20.9
MWR	81	12.6
NER	23	3.6
SER	92	14.4
SWR	42	6.6
WR	101	15.8
International / Other	13	2.0

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*Note.* Professional music therapists completed the survey ( $N = 646$ ).

\*This category only included participants that responded they had received additional training related to music therapy (e.g., Analytical Music Therapist, GIM Level I).

## Measure and Materials

Twenty-six items were used to measure attitudes toward EBP in music therapy. These items were derived from a validated measure of attitudes toward EBP in medicine (Johnston et al., 2003). The assessment was slightly adapted to be specific to the music therapy profession while maintaining the substantive content of the original measure (e.g., “If evidence-based [practice] is valid, then anyone can see patients and do what [music therapists] do,” see Appendix A). Confirmatory factor analysis supported a four-dimension model of 31 validated items (Johnston et al., 2003). The four subscales of the EBP measure included: *attitudes toward EBP*, *knowledge about EBP*, *future use of EBP*, and *personal application and use of EBP*. Five items performed inconsistently when the assessment was used across samples (e.g., loaded on different factors) and were removed for the present study. Removing these left 26 items, all of which employed 6-point scales. Scale anchors used for all 26 adapted items reflected the exact language utilized in the original validated measure (e.g., *strongly disagree* to *strongly agree*, *not at all* to *completely*). One’s mean average response on the scale items served as an index—ranging from 1.00 (*low*) to 6.00 (*high*)—of that participant’s overall attitudes toward EBP in music therapy.

Six items comprising the *attitudes toward EBP* subscale and five items comprising the *knowledge about EBP* subscale sought to measure participants’ affective and cognitive responses to EBP in music therapy. These subscales reflect the intensity and direction of participants’ affective and cognitive processes regarding EBP in music therapy by measuring their level of agreement with feeling, opinion, and belief statements. The six items comprising the *personal application and use of EBP* subscale were considered evidence of behavioral responses to EBP in music therapy. This subscale reflected behavioral components of attitudes toward EBP in

music therapy through items investigating participants' past behaviors, recent behaviors, and behavioral intent. The remaining nine items comprised the *future use of EBP* subscale and were considered evidence of global attitudes toward EBP in music therapy as they investigated affective, behavioral, and cognitive responses of participants.

One item from the *future use of EBP* subscale (i.e., "Evidence-based practice should be an integral part of the undergraduate music therapy curriculum") was mistakenly presented twice to all participants on SurveyMonkey. Data were originally collected for both items and results of inferential statistical tests were compared for the data set with and without the duplicate items. No differences in statistical significance tests were found when removing either of the items from the data set, therefore the version of the item that elicited more responses was kept and the version that elicited fewer responses was eliminated from the final data set.

Familiarity with EBP was measured using one item. Participants were asked to rate their overall familiarity with EBP on a scale ranging from 1 (*very unfamiliar*) to 6 (*very familiar*). Attitude strength was measured using five researcher-created items. Participants were asked to rate their level of agreement with five novel items—ranging from 1 (*strongly agree*) to 6 (*strongly disagree*)—related to the strength of their attitudes toward EBP in music therapy (see Appendix B). These items measured self-reported components of the strengths of participants' attitudes toward EBP across the dimensions of *importance*, *knowledge*, *accessibility*, *certainty*, and *ambivalence* (Visser et al., 2006). All items were presented on 6-point agreement scales, aligning with language presented in the agreement scales used in the Johnston et al. (2003) assessment. One reverse-coded item was included to curtail the possibility of acquiescence bias.

Three open-ended narrative response items were included but responses were not specifically analyzed as part of the present study (see Appendix B). These items sought to

measure participants' *knowledge* and *ambivalence* toward EBP as well as what respondents perceived as potential benefits and drawbacks of endorsing EBP in the field of music therapy.

Lastly, respondents reported demographic information (i.e., age, gender, and regional location) and additional information related to professional experience in the field of music therapy (i.e., professional status, level of training, primary philosophical orientation, professional certifications and additional music therapy designations, year entering the field, and years of experience.). Appendix C outlines demographic and professional status-related variables investigated in this study, including their scales of measurement and their sub-levels. Data were analyzed using SPSS Statistics, Version 21 (2012), and R, Version 3.0.1 (2013).

## **Procedure**

Prospective participants were provided with an overview of the survey and the principal investigators' contact information. After they provided their informed consent and affirmed their MT-BC status, participants were presented with a definition of evidence-based music therapy practice: "Evidence-based music therapy practice integrates the best available research, the music therapist's expertise, and the needs, values, and preferences of the individual(s) served" (AMTA, n.d.). Participants were asked to rate their overall familiarity with EBP on a 6-point Likert-type scale. Then, participants completed the 26 items adapted from the validated Johnson et al. (2003) scale. Each of its four subscales was presented on a separate webpage and the ordering of items on each page was randomized. Additionally, the four pages were presented in random order, unique to each participant. Although presented using the same item groupings as determined through factor analysis (Johnston et al., 2003), subscales were *not* labeled with descriptors (e.g., future use of EBP). Next, participants responded to the novel strength-related and open-ended narrative response items. Participants then answered demographic questions and

reaffirmed that they would voluntarily submit their responses for data analysis. Finally, participants were thanked for their participation.

## RESULTS

On average, respondents reported overall familiarity with EBP as 5.11 on a scale from 1 (*very unfamiliar*) to 6 (*very familiar*),  $SD = 1.35$ ,  $n = 643$ . As adapted from Johnston et al. (2003), participants' mean averages on the scale of attitudes toward evidence-based practice (EBP) in music therapy (scale index) and its individual subscales are presented in Table 4.

Table 4

*Scale Index and Subscale Scores on Adapted Johnston et al. (2003) Scale*

Measure	<i>M</i>	<i>SD</i>	<i>n</i>	# Items
Scale index	4.31	.65	646	26
Attitudes toward EBP	4.89	.83	644	6
Knowledge about EBP	5.02	.83	642	5
Personal application and use of EBP	2.48	.75	644	6
Future use of EBP	4.75	.89	646	9

*Note.* Responses were rated on scales from 1 (*lowest*) to 6 (*highest*) using various prompts. Results on the *Attitudes* subscale were reverse-coded to align scoring with other subscales.

### Confirmatory Factor Analysis

Johnston et al. (2003) previously performed factor analysis and determined a considerable amount of variance in responses could be explained by four factors. Items loading within each factor were grouped and named as four subscales: *attitudes toward EBP*, *knowledge about EBP*, *personal application and use of EBP*, and *future use of EBP*. To determine the fit of the four-factor model suggested by Johnston et al. (2003) with the current data set, a confirmatory factor analysis (CFA) was computed using the structural equation modeling package in R. CFA was used to determine the ability of a four-factor model to reproduce the covariance seen in this data set. By specifying a four-factor model, CFA found the root mean square error of approximation (RMSEA) for this model was 0.0557, indicating good fit of the

four-factor model to the data (MacCallum, Browne, & Sugawara, 1996). Similarly, the Tucker-Lewis Non-Normed Fit Index was 0.9266, suggesting four latent factors are an adequate fit for these data.

### **Correlations**

An alpha level of .05 was used to determine significance for all statistical tests. A Pearson's correlation was calculated to determine the strength of the relationship between scale index and participants' self-reported degree of familiarity with EBP. A significant positive relationship was found between scale index and familiarity,  $r(641) = .24, p < .001$ .

Pearson's correlations were also computed to investigate potential relationships between scale index and participants' age, year entering the music therapy profession, and years of experience (see Table 5). A weak yet statistically significant negative relationship was found between scale index and age in years,  $r(631) = -.10, p = .011$ . A weak, significant positive relationship was found between scale index and year entering the music therapy profession,  $r(639) = .08, p = .048$ . No significant relationship was found between scale index and years of experience,  $r(628) = -.06, p = .118$ . Moreover, a one-way between subjects ANOVA found no significant differences in scale index when participants were grouped by years of experience,  $F(4, 621) = 1.04, p = .386$ .

### **Regressions**

Simple linear regressions were computed to predict relationships between demographic variables and scale index. Normality was assumed for all following regressions as evidenced by approximately normal distributions of standardized residuals and through visual observations of Normal P-P Plots. When predictor variables were plotted against the criterion variable of scale index, plots appeared to reveal homoscedasticity (i.e., approximately consistent variance of

errors across observations). A linear regression found that familiarity with EBP could statistically significantly predict scale index,  $F(1, 641) = 38.51, p < .001$ . An  $r^2$  value of .057 (adjusted to correct positive bias) suggested that 5.7% of the total variance in scale index could be accounted for by a participant's familiarity with EBP. The regression equation was: predicted scale index =  $3.72 + .115 * (\text{familiarity with EBP})$ , 95% CI of slope [.078, .151].

Table 5

*Correlations Between Scale Index and Demographic Variables*

Variable	<i>r</i>	<i>p</i>
Scale index	1.0	n/a
Familiarity with EBP	.24	<.001
Age in years	-.10	.011
Year entering profession	.08	.048
Years of experience	-.06	.118

A linear regression showed that participant age could statistically significantly predict scale index,  $F(1, 631) = 6.56, p = .011$ . An adjusted  $r^2$  value of .010 indicated that 1.0% of the total variance in scale index could be accounted for by a participant's age in years. The regression equation was: predicted scale index =  $4.51 - .005 * (\text{age in years})$ , 95% CI of slope [-.010, -.001]. A linear regression found that a participant's year entering the music therapy profession could statistically significantly predict scale index,  $F(1, 639) = 3.92, p = .048$ . An adjusted  $r^2$  value of .006 indicated that 0.6% of the total variance in scale index could be accounted for by the year a participant entered the music therapy profession. The regression equation was: predicted scale index =  $-5.40 + .005 * (\text{year entering profession})$ , 95% CI of slope [.000, .010]. Years of experience did not statistically predict scale index at a level greater than chance,  $F(1, 628) = 2.46, p = .118$ .



A multiple linear regression was computed to determine if multiple demographic variables could significantly predict changes in scale index. Assumptions of normality of residuals, independence of errors, and homoscedasticity were met. Since years of experience and year entering the profession were highly correlated, only year entering profession was added to the multiple linear regression equation to manage collinearity of the data. As such, the variables familiarity with EBP, age in years, and year entering profession significantly predicted scale index,  $F(3, 625) = 14.33, p < .001$ . An adjusted  $r^2$  value of .060 indicated that 6.0% of the total variance in scale index could be accounted for by a participant's familiarity with EBP, age in years, and year entering the music therapy profession. Of the three predictor variables in this multiple regression model, only familiarity with EBP significantly predicted scale index ( $p < .001$ ). All other  $ps > .05$ . Table 6 presents regression coefficients and standard errors.

Table 6

*Summary of Multiple Regression Analysis*

Variable	$B$	$SE_B$	95% $CI_B$	$\beta$
Scale index	.925	7.808	[-14.41, 16.26]	
Familiarity with EBP	.112	.019	[.075, .149]	.232*
Age in years	-.004	.003	[-.010, .002]	-.075
Year entering profession	.001	.004	[-.006, .009]	.024

*Note.* \*  $p < .05$

$B$  is the unstandardized regression coefficient.  $SE_B$  is the standard error of the coefficient. 95%  $CI_B$  is the 95% confidence interval of the unstandardized coefficient.  $\beta$  is the standardized coefficient.

## Mean Differences

When separated by level of academic training, participants' scale index means ranged from 4.19 to 4.62. Only one respondent indicated a level of training that was less than a bachelor's degree or other training. This case was removed from the following analysis, only. One-way between subjects ANOVA procedures indicated a significant effect of the prediction variable level of training on scale index,  $F(3, 639) = 4.02, p = .007, \eta^2 = .019$ . Post hoc analyses using the Scheffé post hoc criterion for significance showed that music therapists that reported they had earned a master's degree ( $M = 4.37, SD = .65, n = 255$ ) had significantly higher scale index means than music therapists that earned a bachelor's degree ( $M = 4.19, SD = .59, n = 233$ ),  $p = .024, 95\% CI [.02, .34]$ . No other significant differences in scale index means were found between level of training groupings.

Participants' scale index means were compared based on whether they had reported holding additional music therapy training designations ( $M = 4.55, SD = .60, n = 271$ ) or no additional designations ( $M = 4.13, SD = .62, n = 375$ ), indicating a significant difference in scale index,  $t(644) = 8.54, p < .001, 95\% CI [.32, .52], d = 0.68$ . The aforementioned analysis included respondents that indicated "other" additional music therapy designations (e.g., Analytical Music Therapist, GIM Level I). Then, scale index means of participants reporting additional music therapy designations related to serving either specific treatment populations (i.e., NMT, HPMT, NICU-MT) or generalized treatment populations (i.e., FAMI, NRMT) were compared. Equal variances could not be assumed between these two groups. A *t*-test using Satterthwaite approximation indicated a significant difference in scale index of participants with music therapy designations NMT, HPMT, or NICU-MT ( $M = 4.63, SD = .51, n = 224$ ) compared to participants with music therapy designations FAMI or NRMT ( $M = 4.17, SD = .90, n = 25$ ),  $t(25.79) = 2.50,$

$p = .019$ , 95% CI [.08, .83],  $\Delta = 0.51$ . However, no significant difference in scale index was found between participants reporting additional music therapy designations related to work with both generalized and specific treatment populations ( $M = 4.41$ ,  $SD = .74$ ,  $n = 9$ ) when compared with participants reporting only designations related to generalized work with treatment populations,  $t(32) = .72$ ,  $p = .476$ , 95% CI [-.92, .44].

Participants were grouped based on their self-reported primarily philosophical orientation and their scale index means were compared. The scale index mean of music therapists endorsing behavioral, cognitive-behavioral, or biomedical as their primary philosophical orientations ( $M = 4.41$ ,  $SD = .62$ ,  $n = 314$ ) differed significantly from that of participants that primarily endorsed humanistic or psychoanalytic orientations ( $M = 4.11$ ,  $SD = .63$ ,  $n = 182$ ),  $t(494) = 5.17$ ,  $p < .001$ , 95% CI [.19, .42],  $d = 0.48$ .

### **Analysis of Novel Items**

Participants' mean average score on the five novel strength-related items was 4.30,  $SD = 1.01$ ,  $n = 644$ . Reliability analysis of the five novel strength-related items (strength index) was performed. Cronbach's alpha for the strength index was moderately strong,  $\alpha = .86$ . A Pearson's correlation revealed a significant positive relationship between participants' strength index and scale index,  $r(642) = .73$ ,  $p < .001$ .

### **Post Hoc Analyses**

After analyzing the data to investigate the original hypotheses, the following correlations and statistical significance tests were calculated. Table 6 presents Pearson's correlations between participants' subscale means on the adapted Johnston et al. (2003), scale index, strength index, familiarity with EBP, age, year entering the field, and years of experience. All subscales shared significant positive relationships with respondents' familiarity with EBP,  $ps < .001$ .

Parallel to significant positive correlations associated with the scale index, the *future use of EBP* subscale was significantly related to participants' age ( $r(631) = -.10, p = .014$ ) and year entering the field ( $r(639) = .09, p = .024$ ). *Future use of EBP* was not significantly related to years of experience ( $r(628) = -.07, p = .065$ ). However, the *attitudes toward EBP* subscale was significantly related to each of these demographic variables. The *attitudes* subscale was significantly related to age ( $r(629) = -.13, p = .001$ ), year entering the field ( $r(637) = .11, p = .004$ ), and years of experience ( $r(626) = -.10, p = .017$ ). The *knowledge about EBP* and *personal application and use of EBP* subscales were not significantly related to respondents' age, year entering the field, or years of experience.

Respondents' mean strength index was related to self-reported familiarity with EBP, age, year entering the field, and years of experience using Pearson's correlations. A significant positive relationship was found between strength index and familiarity,  $r(639) = .24, p < .001$ . Yet, no significant relationships were found between strength index and age ( $r(629) = -.01, p = .895$ ), year entering the field ( $r(637) = .03, p = .529$ ), or experience ( $r(627) = -.01, p = .844$ ). Over 21% of respondents ( $n = 137$ ) specified an "other" primary philosophical orientation. Several of these participants indicated an "eclectic" orientation; however additional responses included "client-centered," "Jungian," "all of the above," "a combination," and "it depends." Given the large subset of respondents indicating an "other" primary philosophical orientation, a one-way analysis of variance was computed to compare three philosophical orientation groupings: behavioral, cognitive-behavioral, and biomedical; humanistic and psychoanalytic; and other.

Table 6

*Correlations Between Subscales, Scale Index, Strength Index, and Demographic Variables*

Variable	1	2	3	4	5	6	7	8	9	10
1. Attitudes subscale	--									
2. Knowledge subscale	.40***	--								
3. Application subscale	.30***	.24***	--							
4. Future use subscale	.59***	.50***	.43***	--						
5. Scale index	.76***	.68***	.63***	.90***	--					
6. Strength index	.58***	.44***	.45***	.68***	.73***	--				
7. Familiarity	.12***	.19***	.14***	.23***	.24***	.24***	--			
8. Age	-.13***	-.03	-.03	-.10*	-.10*	-.01	-.04	--		
9. Year entering field	.11***	.00	.00	.09*	.08*	.03	.04	-.78***	--	
10. Years experience	-.10*	.00	.02	-.07	-.06	-.01	-.03	.77***	-.98***	--

*Note.* Two-tailed significance tests were performed.

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

One-way between subjects ANOVA procedures indicated a significant effect of the prediction variable philosophical orientation type on scale index,  $F(2, 630) = 13.10, p < .001, \eta^2 = .040$ . Participants endorsing humanistic or psychoanalytic primary orientations ( $M = 4.11, SD = .63, n = 182$ ) had significantly lower scale index means than those endorsing behavioral, cognitive-behavioral, or biomedical primary orientations ( $M = 4.41, SD = .63, n = 314, p < .001, 95\% \text{ CI } [-.45, -.16]$ ) or an “other” philosophical orientation ( $M = 4.34, SD = .68, n = 137, p = .006, 95\% \text{ CI } [-.41, -.05]$ ). Respondents endorsing behavioral, cognitive-behavioral, or biomedical primary philosophical orientations did not differ in scale index from those indicating an “other” philosophical orientation,  $p = .557, 95\% \text{ CI } [-.09, .23]$ .

Participants were grouped based on regional location. When averaged by AMTA region, scale index means ranged from 4.09 to 4.51. One-way between subjects analysis of variance (ANOVA) procedures indicated a significant effect of the prediction variable regional location on scale index,  $F(7, 633) = 4.00, p < .001, \eta^2 = .042$ . Post hoc analyses using the Scheffé post hoc criterion for significance showed that music therapists from the Mid-Atlantic Region of AMTA ( $M = 4.09, SD = .76, n = 134$ ) reported significantly lower scale index means than music therapists from the Mid-West ( $M = 4.51, SD = .52, n = 81, p = .003, 95\% \text{ CI } [-.75, -.08]$ ) and South-East ( $M = 4.44, SD = .63, n = 92, p = .025, 95\% \text{ CI } [-.67, -.02]$ ) Regions of AMTA. No other significant differences in scale index means were found across the eight regional groupings.

## DISCUSSION

MT-BCs' attitudes toward evidence-based practice (EBP) in music therapy were measured using an adapted version of a validated measure of attitudes toward evidence-based medicine by Johnston et al. (2003). Overall, responses on this adapted measure of attitudes toward EBP in music therapy (scale index) were generally positive with a mean response of 4.31 ( $SD = .65$ ) on a scale from 1 to 6. Participants, on average, also indicated that they were rather familiar with EBP as evidenced by a mean response of 5.11 ( $SD = 1.35$ ) on one 6-point question.

Mean average scores on the subscales ranged from 2.48 to 5.02. Participants generally reported high levels of agreement with items on the *attitudes toward EBP*, *knowledge about EBP*, and *future use of EBP* subscales. The lowest average average was on the *personal application and use of EBP* subscale. Although the descriptor of this subscale refers to use of EBP, this title belies its items (see Appendix A). Rather, these items seem to measure the frequency in which individuals access various sources of potential research evidence including textbooks, journal articles, Cochrane systematic reviews, and other secondary sources. No items specifically ask if and how respondents utilize such forms of evidence to deliver an evidence-based intervention. Given the limited number and scope of currently available Cochrane reviews in the field, paired with music therapy practitioners' limited access to primarily journal articles, a lower mean average on this subscale compared to the others is not surprising.

### **Hypothesis Outcomes**

Music therapists did report positive attitudes toward EBP (Hypothesis 1); however, scores did not vary on subscales as hypothesized. Hypothesis 2 stated that music therapists would have higher scores on the *attitudes toward EBP* and *future use of EBP* subscales than on the *knowledge about EBP* and *personal application and use of EBP* subscales. Means were not

lower on the *knowledge* and *personal application and use* subscales. Instead, only scores on the *personal application and use of EBP* subscale were lower than those on the other three subscales.

Music therapists reporting higher levels of familiarity with EBP were hypothesized to also report more positive attitudes toward EBP in music therapy as indicated by a positive correlation between familiarity and scale index (Hypothesis 3). Data supported this hypothesis with the finding of a statistically significant, weak to moderately strong, positive Pearson's correlation between these variables. Professional music therapists with a higher scale index tended to also report a higher level of familiarity with EBP. Moreover, a statistically significant linear regression analysis demonstrated that music therapists' self-identified level of familiarity with EBP could predict their attitudes toward EBP.

A negative relationship between scale index and participant age was hypothesized (Hypothesis 4). Analyses supported this hypothesis, revealing a weak, significant, negative relationship between scale index and age. In other words, as the age of participants was increased, these participants also tended to report less favorable attitudes toward EBP in music therapy. Additionally, a statistically significant linear regression analysis showed that music therapists' age could predict their attitudes toward EBP. However, this regression model explained very little variance in scale index scores, and when variables were combined into a multiple regression, age could no longer statistically significantly predict music therapists' attitudes toward EBP. This finding is contextualized by the fact that EBP was only introduced in the medical field in the early 1990s. Music therapists that were trained in the past 20 years are more likely to have been introduced to the concept of EBP and, in turn, may have more positive associations with its tenets.



MT-BCs that entered the field more recently were hypothesized to also have higher scale index means as measured by a Pearson's correlation (Hypothesis 5). Data supported this hypothesis in the form of a weak, significant, positive correlation between these variables. That is, the more recent the year a music therapist entered the field, the higher she tended to score on the scale index. Like findings seen with regression of participant age against attitudes toward EBP, year entering the field could predict music therapists' attitudes toward EBP but explained very little variance in responses and failed to significantly predict attitudes when used as a variable in multiple regression. Participant familiarity appeared to explain roughly as much variance in attitudes toward EBP as a model combining familiarity, age, and year entering the field.

Hypothesis 6 explained a negative relationship between scale index means and years of experience. Conversely, these data did not support this hypothesis. Rather, no significant relationship existed between years of experience and scale index. Although the same assessment measure was not employed, this finding stands in contrast of a study with Australian occupational therapists wherein professionals that had worked fewer years were more likely to engage in EBP and also reported higher confidence in EBP-related skills than their more experienced colleagues (Bennett et al., 2003).

Moreover, post hoc analyses revealed significant negative relationships between participant age and the *attitudes toward EBP* and *future use of EBP* subscales. Yet, participant age was not significantly related to the *knowledge about EBP* or *personal application and use of EBP* subscales. Perhaps these findings suggest that, currently, more seasoned music therapists are less likely to hold favorable views toward or engage in a new treatment paradigm due to their length of experience, even when controlling for knowledge. Still, this researcher is curious as to

how age will or will not continue to be significantly associated with these aspects of engaging in EBP over time as the field continues to integrate its tenets into professional training and practice.

Professional music therapists reporting training beyond the baccalaureate level were hypothesized to have higher scale index means than those without academic training beyond the baccalaureate level (Hypothesis 7). These data do not conclusively support this hypothesis. Instead, these data only suggest significant differences in attitudes toward EBP between MT-BCs that have earned a master's degree and MT-BCs that have earned a bachelor's degree. By the same token, even though significant differences were found, an effect size of  $\eta^2 = .019$  suggests that only 1.9% of variance in scale index can be explained by the predictor variable level of academic training. These results might insinuate that MT-BCs that have earned a master's degree do have more favorable attitudes toward EBP than their peers that have earned a bachelor's degree, but only slightly so. This finding may indicate an increased presence of EBP in academic training experiences beyond the baccalaureate level. Adopted in 2005, AMTA's *Advanced Competencies* specify that training beyond entry-level competencies should "synthesize comprehensive knowledge of current theories" and "identify theoretical constructs underlying... research approaches" (n.d.).

Professional music therapists reporting current or formerly held additional music therapy designations were hypothesized to have higher scale index means than music therapists that have not held additional designations (Hypothesis 8). These data supported this hypothesis as MT-BCs that have held additional music therapy designations reported significantly higher scale index means than their peers that have not held additional designations. An effect size of  $d = 0.68$  implies a moderately strong magnitude of difference in attitudes toward EBP between these two groups. Given that AMTA's *Advanced Competencies* specify that additional training should

introduce professionals to theories and constructs related to research approaches, MT-BCs that have sought out additional music therapy training designations may have increased familiarity with EBP which, in turn, may predict an increase in favorable attitudes toward EBP in music therapy.

MT-BCs possessing additional music therapy designations related to work with specific treatment populations were hypothesized to have higher scale index means than MT-BCs with additional designations related to work with general treatment populations (Hypothesis 9). Data supported this hypothesis as music therapists with designations NMT, HPMT, or NICU-MT had significantly higher scale index means than their peers with designations FAMI or NRMT. An effect size of  $\Delta = 0.51$  suggests a moderate magnitude of difference in attitudes toward EBP between these two groups of MT-BCs that have held additional designations. While the scale index means of these groupings differ, the averages for all of these MT-BCs were above the midpoint of the scale, implying overall positive attitudes toward EBP regardless of the type of additional designations.

Hypothesis 10 stated that music therapists reporting additional designations related to both general and specific treatment populations (e.g., both HPMT and NRMT) would report more favorable views toward EBP than those with only additional designations related to general populations (e.g., FAMI only). These data did not support this hypothesis; MT-BCs that have held additional designations related to both general and specific populations did not report more favorable attitudes toward EBP than peers that have held additional designations only related to work with general populations.

MT-BCs that reported their primary philosophical orientation as behavioral, cognitive-behavioral, or biomedical were hypothesized to have higher scale index means than MT-BCs that

primarily endorsed humanistic or psychoanalytic orientations (Hypothesis 11). Data supported this hypothesis as these philosophical orientation groupings differed significantly. An effect size of  $d = 0.48$  suggests a moderately strong magnitude of difference in attitudes toward EBP as reported by these two groups of professional music therapists. While the behavioral and cognitive-behavioral philosophical orientations may not be directly linked to EBP (cf. Gibbs & Gambrill, 2002), a shared focus between these philosophical approaches and EBP on achieving measurable client outcomes may explain why these MT-BCs reported more favorable attitudes toward EBP than their peers. However, mean scale index averages for both groups were above the midpoint of the scale, signifying positive attitudes toward EBP, overall, across professionals representing all five of these philosophical orientations.

Given the large percentage of participants indicating a primary philosophical orientation of “other,” a post hoc analysis of scale index including these respondents as a separate group was calculated. These results revealed significantly lower scale index means for those endorsing humanistic or psychoanalytic philosophical orientations than all other MT-BCs. Yet, no differences were found between MT-BCs endorsing behavioral, cognitive-behavioral, biomedical, or other primary philosophical orientations. The “other” category included several participants that indicated an “eclectic” orientation in addition to those specifying a “client-centered” or otherwise contextual approach. This may demonstrate MT-BCs’ desire to utilize therapeutic interventions that “work” in a given context, directly aligning with the amalgamation of research knowledge, clinician expertise, and client preference in the EBP process (Sackett et al., 2000).

MT-BCs reporting stronger attitudes toward EBP (strength index) were hypothesized to also report higher scale index means (Hypothesis 12). These data supported this hypothesis as

these two indices shared a strong, statistically significant, positive correlation. Additionally, reliability analysis of the novel strength-related items revealed high internal consistency in the strength index. Interestingly, while the strength index was significantly related to participants' familiarity with EBP, no significant relationships were found between the strength index and participants' age, year entering the field, or years of experience. This might suggest that the strength index is a useful predictor of music therapists' attitudes toward EBP that is not influenced by the demographic variables age, year entering the field, or years of experience.

Post hoc testing investigated whether differences in scale index existed based on participants' geographical location. When separated by AMTA region, music therapists from the Mid-Atlantic Region reported lower scale index means than their peers in the Mid-West and South-East Regions of AMTA. Although significant differences were discovered, the effect size of  $\eta^2 = .042$  suggested that only 4.2% of variance in scale index can be explained by the predictor variable regional location. Similar to findings with regards to philosophical orientation or additional training, respondents from all AMTA regions, overall, reported positive attitudes toward EBP as measured by the adapted Johnston et al. (2003) scale.

### **Methodological Concerns**

Although these data revealed several significant relationships and mean differences, these inferential findings should be interpreted with caution. For instance, sampling bias is a threat to the accuracy of these findings. Given the online delivery of the survey, all prospective participants were contacted via email. This methodology immediately excluded prospective subjects that had not released email addresses to The Certification Board for Music Therapists for approved research purposes. Likewise, any MT-BCs that had previously opted-out of further contact from SurveyMonkey were automatically excluded from the initial informed consent

correspondence sent to board-certified music therapists. That is, SurveyMonkey would not deliver emails to at least 158 addresses based on previous requests sent from those individuals to SurveyMonkey.

Additionally, the representativeness of the sample may be suspect. For example, the response rate to this survey was quite low. Including all 859 participants that consented to begin the survey, the response rate was 16.34%; however, the strict inclusion criteria reduced the final participant count to 646, resembling a true response rate of 12.29%. Prospective participants that do not endorse the tenets of EBP may have chosen not to participate by virtue of the topic and research questions presented in the initial correspondence sent to MT-BCs. Similarly, those that felt strongly in support of EBP's tenets may have been motivated to respond. Consider, of the 646 participants included in data analysis, nearly 30% reported an additional music therapy designation in Neurologic Music Therapy, a specific music therapy approach that openly incorporates discussion of EBP in its training programs. Might practitioners that already support and possess training in EBP in music therapy be overrepresented in this sample? Although recent research suggests participant responses using online survey methodologies may be just as accurate and consistent as those gathered through traditional paper-and-pencil assessments (Riva, Teruzzi, & Anolli, 2003), this study's low response rate and considerable presence of practitioners with previous training in EBP might explain why the present sample reported such high familiarity with and strong, favorable attitudes toward EBP in music therapy.

Perhaps of greater concern, attrition and dropout may have significantly influenced the final results of this survey study. As mentioned earlier, strict inclusion criteria were used to determine which survey responses were valid for data analysis. Based on the researcher's past experience executing survey projects, he opted to add a final question confirming a participant's

willingness to submit data for analysis. In survey software and websites such as SurveyMonkey and Qualtrics, participants seldom have a clear method of retracting their consent to participate without self-identifying and sacrificing anonymity. Often, informed consent information states that participants may decline to participate further at any time without penalty, but the process for doing so is often unclear. If a respondent that has provided informed consent begins a survey and later chooses to withdraw participation, how is this information relayed to the researcher? When a participant closes the webpage on SurveyMonkey, the software retains all responses on items that have been answered thus far and assigns a respondent identification number to that participant. The question remains: While the participant dropped out, did that participant want any supplied responses to be included in the analyzed data set, or did the participant want to withdraw participation entirely from the survey?

To ameliorate this concern in the present study, a final item was added for participants to “confirm” their consent to complete and submit the survey. The intent of this item was to support participants’ confidentiality and autonomy. In addition to the initial inclusion criteria items (i.e., to confirm informed consent to begin the survey and to confirm the participant currently holds MT-BC credential), this was the only item that required a response to continue. Yet, this item was presented on the final page of the survey. Nearly 200 participants that provided “initial” informed consent and began the survey had dropped out before reaching the last page of the survey. While responses were collected for as many questions as these participants answered, these data were considered invalid per the research team’s inclusion criteria.

Another methodological concern involved the descriptors of the anchors of the Johnston et al. (2003) scale. Approximately 15 prospective or actual participants emailed the principal investigator or the co-principal investigator to express concerns about the response options on

the scale. Specifically, a number of music therapists stated that they were uncertain of the difference between the response options *agree* and *moderately agree* as well as between *disagree* and *moderately disagree*. These MT-BCs reported a lack of clarity between these potential responses. Did *moderately agree* imply a greater level of agreement than *agree*, or might *moderately agree* signify a more neutral response than *agree*? Moreover, the strength index items used the same potentially confusing anchors and should be revised if used in future studies.

Fortunately, item response options were always presented in the same order on the screen from left to right, from lowest to highest. Furthermore, while the quality of the data collected about the intensity of MT-BCs' attitudes toward EBP could have been compromised to some extent, responses to these items still clearly captured data about the direction (i.e., positive or negative) of participants' views (Chaiken, 2001).

### **Implications**

Based on the data gathered in this study, familiarity with EBP was the best predictor of overall attitudes toward EBP in music therapy. Increasing student and professional music therapists' familiarity with EBP may result in modest gains in their global attitudes toward EBP. For instance, incorporating discussions and assignments about EBP throughout the undergraduate curriculum may introduce music therapy students to the concept early so that they may continue to develop an understanding of EBP and its clinical applicability as they progress toward practica and internship experiences. Teaching students and interns the multistep EBP process may also empower them to approach unfamiliar clinical questions with confidence. Likewise, engaging in EBP necessitates the use of critical thinking skills that will be invaluable in future professional contexts. Providing regular opportunities to learn about and practice EBP throughout the pre-professional curriculum may increase familiarity and positive attitudes toward



EBP while also supporting developing music therapists in implementing and adhering to its principles as professionals.

Beyond the classroom, professional continuing education opportunities about EBP may be more effective if they help music therapists learn how to “do” EBP. While most participants in this study indicated favorable attitudes toward EBP, professional music therapists indicated they infrequently utilized sources of evidence in their practice as measured by the *current use and application of EBP* subscale. Perhaps continuing education courses taught at music therapy conferences and symposia would be more functional for practicing music therapists if they modeled how to access and apply evidence sources rather than only review what EBP “is.”

Additionally, these findings may suggest that trainings about EBP should be tailored toward seasoned music therapists that did not enter the field recently. Since music therapists that have been in the field longer seem more likely to have crystallized a professional identity based on their past experiences, successes, and failures, potential EBP trainers might be wise to prepare a response to claims from experienced professionals that “we are already doing it” (Gibbs & Gambrill, 2002; Sackett et al., 1996). EBP certainly encompasses more than the blind application of findings from systematic reviews and meta-analyses in clinical contexts; yet, conveying the value of engaging in EBP to potentially improve patient outcomes and to sustain and improve the salience of the profession in today’s healthcare zeitgeist might be more challenging when interacting with seasoned clinicians.

### **Conclusions and Further Recommendations**

At the time this study was authored, no valid or reliable measure of attitudes toward EBP existed in the field of music therapy. Given the large sample size that completed these questionnaires, a more comprehensive reliability analysis of responses to the adapted Johnston et

al. (2003) scale and strength index items seems merited. However, given the aforementioned concerns about the presentation and wording of the items with this sample, perhaps the adapted scale and strength index items should be revised and retested to gather more robust results.

If this study were to be replicated, the following modifications are recommended. First, instead of using a final item to confirm participants' willingness to submit responses, perhaps the initial informed consent page could provide prospective respondents with a very brief explanation of how to opt out of the survey. For example, the survey designer could add an "opt out" item at the bottom of each page in a distinct font color. As such, participants could more easily notify the research team of their true intentions (i.e., whether or not they are to be excluded from the data set) without requiring respondents to reach the final page of the survey.

Next, response options should be clearly labeled and distinct from one another. Changing the response option *agree* to *minimally agree* might more clearly distinguish the option from *moderately agree*. Likewise, items that asked participants to compare their past and present beliefs could be stated more clearly. For instance, multiple items on the *future use of EBP* subscale ask participants to give a current assessment of their opinions and values "compared to a year ago." MT-BCs that are familiar with its principles have likely engaged in EBP for a time period of more than one year. Perhaps restating these items with the phrase "compared to the past" might increase their clarity.

Last, in reviewing the evolution of evidence-based medicine to evidence-based practice and the various definitions proposed and revised over the past two decades, this researcher is left questioning if practitioners are clear about the balance of research evidence, clinician expertise, and client preference in the EBP process. For instance, individuals could report that they support or engage in EBP without having a clear understanding of the EBP process. Since EBP has been

defined as the confluence of these three entities, do practitioners (music therapists or otherwise) truly conceptualize EBP as the careful, equal integration of these forces? By the same token, do practitioners that state they are “doing” EBP actually balance evidence with expertise and client preference, or, in practice, does one component guide the therapist’s decision-making more than the others?

Overall, MT-BCs appear to possess positive attitudes toward evidence-based practice in music therapy. Similarly, based on the results of this study, music therapists appear to be relatively familiar with the definition of EBP and may hold strong attitudes toward EBP as measured by an index score comprised of novel strength-related items that were tested with this sample. Professional music therapists that are familiar with EBP; that have less years of experience; that are younger; that hold additional training designations; or that endorse behavioral, cognitive-behavioral, or biomedical philosophical orientations might possess more favorable attitudes toward EBP than other music therapists. Additional research is needed to determine what factors best explain variance in music therapists’ attitudes toward EBP, and to understand the relationships between attitude direction, attitude strength, behavioral intent, and actual implementation as it relates to EBP. These results suggest that board-certified music therapists possess favorable attitudes toward evidence-based practice in their discipline, which might serve as a reflection of AMTA’s commitment to its principles, and may indicate music therapists’ willingness to engage in the EBP process.

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## APPENDIX A

**All items were adapted from Johnston et al. (2003). Adapted and added text is provided in brackets. All items are measured on their original scales of 1 to 6, using reverse-coding as indicated. The terms “evidence-based practice,” “evidence-based music therapy,” and “evidence-based practice in music therapy” are used synonymously.**

### **Attitudes toward evidence-based practice (Reverse-coded)**

If evidence-based [practice] is valid, then anyone can see patients and do what [music therapists] do.

There is no reason for me personally to adopt evidence-based [practice] because it is just a “fad” (or “fashion”) that will pass with time.

Evidence-based [practice] is “cook-book” [music therapy] that disregards clinical experience.

[Music therapists], in general, should not practice evidence-based [practice] because [music therapy] is about people and patients, not statistics.

Evidence-based [practice] ignores the “art” of [music therapy].

Previous work experience is more important than research findings in choosing the best [music therapy] treatment available for a patient.

### **Knowledge about evidence-based practice**

Evidence-based [practice in music therapy] requires the use of critical appraisal skills to ensure the quality of all the research papers retrieved.

Effective searching skills/easy access to bibliographic databases and evidence sources are essential to practicing evidence-based [practice in music therapy].

Critically appraised evidence should be appropriately applied to the patient using clinical judgment and experience.

The evidence-based [practice] process [in music therapy] requires the appropriate identification and formulation of clinical questions.

Practicing evidence-based [music therapy] increases the certainty that the proposed treatment is effective.

### **Personal application and use of evidence-based practice**

How frequently do you access [music therapy] evidence from a textbook?

How frequently do you access [music therapy] evidence in general?

How frequently do you access [music therapy] evidence on the Internet (excluding MEDLINE and Cochrane Reviews)?

How frequently do you access [music therapy] evidence from original research papers?

How frequently do you access [music therapy] evidence from the Cochrane database?

How frequently do you access [music therapy] evidence from [other] secondary sources[...]?

### **Future use of evidence-based practice**

Compared to one year ago, how useful do you believe evidence-based [practice] will be in your future practice as a [music therapist]?

Compared to one year ago, how willing are you to practice evidence-based [music therapy...] in the future?

You personally appreciate the advantages of practicing evidence-based [music therapy].

Evidence-based [practice] should be an integral part of the undergraduate [music therapy] curriculum.

Compared to one year ago, how much do you support the principles of evidence-based [practice in music therapy]?

Compared to one year ago, how much do you support lifelong learning using evidence-based [music therapy] techniques?

How much do you consider the practice of evidence-based [music therapy] a routine part of your [continuing music therapy education]?

How much has the practice of evidence-based [music therapy] changed the way you learn?

How easy or difficult has it been for you to practice evidence-based [music therapy] as a [music therapist] in the last month?

## APPENDIX B

### **Strength-related attitudes toward EBP items**

Evidence-based practice in music therapy is **important** to me (Importance)

I **do not have considerable knowledge** about evidence-based practice in music therapy

(Knowledge, reverse-coded)

My attitudes toward evidence-based practice in music therapy **come to mind quickly**

(Accessibility)

I am very **certain** about my attitudes toward evidence-based practice in music therapy

(Certainty)

My attitudes toward evidence-based practice in music therapy are **conflicted** (i.e., I see both pros and cons) (Ambivalence)

### **Narrative response items**

As a music therapist, you are often asked what music therapy “is.” In your own words, please describe what evidence-based practice in music therapy “is” and “is not.” (Knowledge)

What do you think are potential **benefits** of adopting evidence-based practice in the field of music therapy? (Ambivalence)

What do you think are potential **drawbacks** of adopting evidence-based practice in the field of music therapy? (Ambivalence)

## APPENDIX C

### **Demographic and professional status variables**

#### Demographic Variables

What year did you enter the music therapy profession? (interval)

Gender (nominal)

Age (interval)

#### Level of training (nominal)

Less than Bachelor's degree/other:

Earned Bachelor's degree

Some post-graduate coursework

Earned Master's degree

Earned Doctoral degree

#### Primary philosophical orientation (nominal)

Behavioral

Cognitive-behavioral

Humanistic

Psychoanalytic

Biomedical

Other

Current professional credentials in addition to MT-BC (nominal)

RMT

CMT

ACMT

Other

Current and former additional music therapy designations (nominal)

FAMI

NICU

NMT

HPMT

NRMT

Other

Years of experience? (interval)

Years of experience (categorized by researcher)

0 to 5

6 to 10

11 to 20

21 to 30

31+

Current AMTA region (nominal)

NER

MAR

SER

MWR

GLR

SWR

WR

International/other: