Sources of Knowledge in Music Therapy Clinical Practice

A dissertation presented to
the faculty of
The Patton College of Education of Ohio University

In partial fulfillment
of the requirements for the degree
Doctor of Philosophy

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December 2016

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This dissertation titled

Sources of Knowledge in Music Therapy Clinical Practice

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Abstract

GEIST, KAMILA, Ph.D., December 2016, Curriculum and Instruction

Sources of Knowledge in Music Therapy Clinical Practice

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In a time where healthcare professionals are required to use evidence to support their clinical practices, there is a lack of information on what sources music therapists actually do use and whether they are using current evidence in their clinical practices. The purpose of this study was to provide a breadth of information regarding how often music therapists use various Sources of Knowledge when deciding on music-based interventions in their clinical practice and to pilot a researcher-created questionnaire on Sources of Knowledge in Music Therapy. The questionnaire was subjected to pilot testing procedures and reliability tests during the study. It was distributed to a random sample of board-certified music therapists from the Certification Board for Music Therapists (CBMT) list. Results indicated that currently practicing music therapists’ clinical experiences and academic and clinical training experiences, primarily internship, are the sources used most often when deciding what music intervention to use in a music therapy session. Current theory and research readings (TRR) in music therapy and non-music therapy readings are not used as often, in fact rank lower than other sources, including academic and clinical training, clinical practices, supervision, and professional development. TRR items ranked higher than non-theory and non-research readings and most social situations items. Results also indicate that there were no significant
differences in select demographic groups who chose theory and research readings. Recommendations for academic program planning to include more evidence-based knowledge and creating a research domain for continuing music therapy education credits through CBMT are discussed. Scale development results including item analysis and factor analysis of the items revealed that theory and research reading items were reliable and generally worked well together as a scale. Groupings of other Sources of Knowledge items such as conference attended events and supervision experiences are recommended for future questionnaire development. Collecting qualitative data possibly through interviews and focus groups is also recommended for future scale development procedures.
Dedication

I dedicate this dissertation to my parents, Dr. Charles R. Smith, Professor of Mathematics, and Mrs. Wanda S. Freeman, Registered Nurse, who through their lifelong examples and continued encouragement have inspired me to continue to increase my own knowledge, and therefore create knowledge for others.
Acknowledgments

I would like to express my deepest gratitude to my dissertation committee: my advisor, Dr. Gordon Brooks, who took me under his learned wing to guide me in educational research methods and questionnaire development; Dr. Margaret King, a valued mentor, colleague, and friend, who pushed me beyond what I believed I could do to be a better teacher, researcher, colleague, and scholar; Dr. Gregory Janson for his vast knowledge and keen eye on what is most relevant in my research, and for reminding me about the bigger picture and the important broader impact of my clinical work; and Dr. Mathew Felton-Koestler for willingly stepping in when needed, bringing his knowledge and experience of educational issues to the forefront while supporting me through this process. I would like to thank the professional reviewers who provided their knowledge and expertise to reviewing the original questionnaire and to all the participants who completed the questionnaire in all phases of the study. Also, I could not have completed my PhD program of study and this dissertation without the ever-present love and support of my husband, Dr. Eugene Geist, and all my family, who persevered with me through the ups and downs of completing the tasks at hand. I only hope that I have been a model for my children, Dylan and Michael, of how hard work and dedication, though difficult at times, can be rewarding and will help them reach their goals.
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Chapter 1: Introduction

On January 9, 2011, Arizona Congresswoman Gabbrielle "Gabby" Giffords was attacked and critically injured by a gunshot wound to the head. This injury left her physically disabled, with limited ability to read and write, and she was unable to speak. A team of healthcare professionals, including a neurologic music therapist, Meagan Morrow, played a significant role in her recovery, helping her regain her speech. Meagan chose familiar songs for Gabby's treatment, incorporated her own strong guitar accompaniment skills and treatment approach, and applied evidence-based music therapy interventions to help Gabby regain speech (Davis, Gfeller, & Thaut, 2008; Tan, Pfordresher, & Harre, 2010; Thaut, 2005). By 2015, almost fully recovered from her injuries, Congresswoman Giffords spoke about the team of professionals, including her music therapist, who worked together to save her life, "Music therapy was so important in the early stages of my recovery because it can help retrain different parts of your brain to form language centers in areas where they weren't before you were injured" (Westfall, 2015, para. 8).

Music therapists positively impact the lives of the public, much the same way as other trained public servant professionals do (e.g., teachers, doctors, counselors, and social workers). The knowledge and work of the public professional is judged on the credibility of the academic programs they attend, the quality assurance measures put in place by their employers and accrediting associations who monitor their ongoing training, and by the daily impact their work and skill have on those whom they serve. The public trusts the decisions professionals make, whether it is a
choice of the best reading material for a 2nd grade student who is gifted or the most appropriate medication for someone who is diagnosed with Stage 4 cancer. The decisions professionals make are crucial to the current education, health, and well-being of those whom they serve and can have life-long impacts.

The music therapy profession aligns closely to supportive educational services and allied health professions. For example, speech and language pathologists, social workers, and physical therapists use standardized assessments to determine whether a student or patient would benefit from the services they provide in the educational or medical setting, recommend their services if needed, and then decide what is the most appropriate treatment strategy or protocol to deliver (American Physical Therapy Association [APTA], 2015; American Speech-Language-Hearing Association [ASHA], 2016; National Association of Social Workers [NASW], 2003). Music therapists follow similar standards of care which include assessment, treatment planning, and treatment implementation (American Music Therapy Association [AMTA], 2015d). Also, as clinical counselors and psychologists choose the best therapeutic approach that helps move a patient from exhibiting unhealthy behaviors to exhibiting healthy ones (American Mental Health Counselors Association [AMHCA], 2016) so, too, do music therapists draw from their varied experiences and approaches to music therapy to choose the most appropriate music-based interventions as the treatment (American Music Therapy Association & Certification Board for Music Therapists (AMTA & CBMT, 2015).
Who is the Music Therapist?

As with other public servant professionals, a music therapist goes through rigorous academic and clinical training before gaining a national certification to practice. A music therapist is trained to know what is the best music treatment to use and how to use that treatment appropriately depending on the need of the client or group of clients. A music therapist may serve clients in a public school, hospital, psychiatric facility, nursing home facility, and so forth. Music therapists are required to follow well-defined standards of care, make informed treatment decisions, have the expertise to deliver that treatment, and evaluate its effectiveness on client health and well-being. Music therapists are required to make evidence-informed clinical decisions about the music treatment interventions they choose, applying this to practice by integrating their own clinical expertise with the needs, values, and preferences of the clients they serve (AMTA & CBMT, 2015).

Music Therapy: A Historical Perspective

Music Therapy as a profession in the United States officially began in 1950 with the formation of the first association for music therapy, the National Association of Music Therapy (NAMT). At the time, introductory courses in music therapy were offered at a few universities across the country, however, once the NAMT association was formed, academic institutions formed music therapy training programs by adding academic courses, clinical training, and internship training in order to provide a means for students to gain certification as a Registered Music Therapist (RMT). The first academic program at Michigan State University, was
soon followed by the University of Kansas, Florida State University, Ohio University, and others. The NAMT also hosted professional development conferences, published research in the profession’s first journal, the Journal of Music Therapy (JMT), and continued to monitor the development of new academic and clinical training programs. At that time, the primary populations served by music therapists were patients in psychiatric facilities as well as veterans in hospitals (Davis et al., 2008, Goodman, 2011).

Through the 1950s and 1960s, music therapy clinical training and treatments were primarily for those with mental illness, and most music-based experiences were individual and group recreational experiences such as music lessons or music ensembles, such as choirs. Data collected typically was on the impact of music as reward and as a reinforcement to promote increased socialization and reducing non-social maladaptive behaviors. As the profession grew, differing ways to use music in therapy developed. In the early 1960s, the impact of music on emotional well-being became more apparent with mental health populations and its impact on rehabilitation for those with physical disabilities, the goals of music therapy treatment shifted from being that of only recreation and reward, to providing positive long lasting emotional well-being and promoting physical healing. The therapeutic relationship with the client/therapist, with the music created at its core, also expanded from a strictly behavioral approach to a psychodynamic-based music therapy approach. Music interventions expanded from educational models of music lessons and music groups to therapeutic process work through song analysis,
guided imagery, and individual and group music improvisation (Bunt & Stige, 2014; Davis et al., 2008; Goodman, 2011).

Due to the emergence of diverse approaches and varied music interventions, the profession of music therapy in the United States changed dramatically over the next 60 plus years, dividing at one time in the late 1960s to two different associations. A group who disagreed with the behavioral approach separated and formed the American Association of Music Therapy (AAMT). These music therapy educators, researchers, and clinicians were in favor of more music-based psychotherapy, which involved more improvisation and music-centered treatment approaches. Academic programs then were formed with either NAMT (behavioral approach) or AAMT (psychodynamic approach), each with different certifications: Registered Music Therapist (RMT) and Certified Music Therapist (CMT), respectively. The NAMT and AAMT co-existed in the United States and each continued to publish their own research journals, NAMT's being the primarily quantitative JMT and AAMT's being the primarily qualitative journal titled Music Therapy (Brooks, 2003). This association separation lasted almost 30 years while each group expanded and grew in numbers and expanded to working with varied populations. In 1998, due to a strong social need for a unified certification and training, the associations decided they needed to merge. The merged association is still in place today and called the American Music Therapy Association (AMTA).

AMTA offers opportunities for various types of membership, including professional, associate, student/graduate student, retired, inactive, affiliate and
educational affiliate, patron, and honorary life. Benefits of professional membership, the membership category for current music therapists, include receiving the JMT and Music Therapy Perspectives, the two research and clinical practice journals for the association (AMTA, 2015j). It is not required that a Music Therapist – Board Certified (MT-BC) be a member of AMTA although AMTA is the primary professional organization which provides resources to its members, including advocacy and reimbursement resources as well as access to the AMTA research journals (CBMT, 2015b; AMTA, 2016).

**Music Therapy Today**

In order to become a music therapist in the United States today, a student must attend an academic program that has been approved by the AMTA and accredited by the National Association of Schools of Music (NASM), complete all requirements at the undergraduate level and then pass the national board certification exam given by the Certification Board for Music Therapy (CBMT) (AMTA, 2014). Although there is profession-wide discussion about moving the entry-level certification from undergraduate to the master’s level (AMTA, 2015g), currently an undergraduate degree in music therapy provides all the training necessary for entry-level professional competence and knowledge needed to pass a national board certification exam to become an MT-BC. Undergraduate degrees are typically four years of academic work plus a 6-9 month clinical internship and include courses in music, music therapy, behavioral sciences, pre-internship clinical training, and internship clinical training (CBMT, 2015b). Supervision of students by
MT-BCs is required throughout all phases of clinical training (pre-internship and internship) (AMTA, 2014).

Music therapists can gain advanced clinical training at AMTA-approved Master’s level academic programs. Master’s level students gain breadth and depth of advanced competence in music therapy theory and advanced clinical skills as well as in-depth knowledge in at least two of the following areas: research, musical development and personal growth, and clinical administration (AMTA, 2014). Some states require added licensure requirements in order to practice music therapy. The state of New York, for example, requires added coursework to be a Licensed Creative Arts Therapist (LCAT), which allows the music therapist to practice music psychotherapy in the state of New York (New York State Department of Education, 2016). There are a few doctoral programs in the US in music therapy. AMTA provides a general standard for doctoral programs, however, because the association has not yet developed doctoral level competencies, AMTA does not have a program approval process in place for doctoral programs (AMTA, 2014). Music Therapy doctoral programs are approved by the individual universities and range from stand-alone doctoral programs in music therapy (e.g., Temple University) to music therapy as a focus in a music education PhD program (e.g., University of Kansas) (AMTA, 2016).

The current definition of music therapy practice allows for various different models of therapeutic delivery depending on the expertise of the therapist and the needs of the clients.
Music therapy is defined as the clinical and evidence-based use of music interventions to accomplish individualized goals for people of all ages and ability levels within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program. A music therapist is an individual who has completed the education and clinical training requirements established by the American Music Therapy Association (AMTA) and who holds current board certification from The Certification Board for Music Therapists (CBMT). (AMTA & CBMT, 2015, para. 3)

Today, there are over 6,500 MT-BCs registered through the CBMT and 76 academic programs in the United States training undergraduates and graduates to be music therapists. An estimate of 1.5 million people receive music therapy services delivered at approximately 33,330 facilities across the United States (AMTA, 2015a).

The Music Therapy profession in the United States has grown substantially over the past 66 years, not only in number of professionals and academic training programs, but also growth in diversity of types of facilities and populations served, as well as types of approaches and advanced designations received beyond the MT-BC. Growth can pose challenges for the profession to keep clinicians informed on current new clinical techniques and current evidence to support the interventions currently used by clinicians. Music therapists, particularly those who have been practicing for more than 10 or so years, must stay current on evidence to support their work. In turn, the profession must grow the theoretical and research evidence
knowledge needed to support the work of music therapists for a wide variety of populations served. The Evidence-Based Music Therapy Practice (EBMTP) movement described below and in detail in Chapter 2 has prompted researchers to gain more knowledge about how music therapists keep informed of the evidence, if they apply the current evidence, and where they are looking for evidence to inform their clinical practice decisions.

**Sources of Knowledge for Clinical Practice**

Researchers have identified Sources of Knowledge as places and situations where clinicians seek the knowledge they need in order to make informed clinical practice decisions. Sources of Knowledge include but are not limited to consultation with other professionals, Internet sources, professional development conferences, the clinician's own experiences, information from their patients, and information from evidence-based research (Dalheim, Harthug, Nilsen, & Nortvedt, 2012). Sources may also include databases of evidence-based interventions, reports about research-based protocols, conference information related to a new treatment technique, or consultation with mentors (Garg et al., 2005; Kawamoto, Houlihan, Balas, & Lobach, 2005; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). Also, prior clinical experiences, years in practice, ability to clinically reason, the clinician’s expertise and clinical approach play a role in where health care professionals seek knowledge before making the choice of an intervention or protocol to use in their clinical practices (Thomson, 2013).
**Research evidence as a source of knowledge.** The need to define what is evidence in research for health professions is a by-product of the need to connect research evidence to clinical practice outcomes. In the late 1990s, health organizations began insisting that the clinical practices of medical practitioners be supported with evidence, such as results from a Randomized Control Trial (RCT). However, over the past decade, what is considered evidence in research studies has been expanded to include more than just cause/effect outcomes as in RCTs, but to include quasi-experimental and qualitative studies (Reed, Kihlstrom, & Messer, 2006; Tomlin & Borgetto, 2011; Upshur, VanDenKerkhof, & Goel, 2001). While the profession of music therapy has globally defined evidence as “...effectiveness and efficacy studies” (AMTA, 2015e, para. 4), other professions have provided better definitions of evidence with detail of hierarchical models of evidence as a guide for their practitioners (Evans, 2003; Iwakabe, 2013; Sackett et al., 1996; Snyder, 2006; Tomlin & Borgetto, 2011).

**Research evidence in music therapy.** As with other health professions, the music therapy profession has made it a priority to promote better application of the research evidence in clinical practice. According to the AMTA’s Strategic Priority on Research (AMTA, 2015h), music therapists are now required to "adopt nationally endorsed evidence-based protocols founded in sound theory and demonstrated via outcomes studies of efficacy and/or effectiveness" (AMTA, 2015e, para. 4). This decree has prompted music therapy researchers and clinicians to begin providing information for music therapy clinicians on what is evidence, how to find it, and how
to interpret it (Abrams, 2010; Edwards, 2004; Hahn, 2013; Kern, 2010; Vink & Bruinsma, 2003). Application of the evidence to music therapy clinical practice is known as Evidence-Based Music Therapy Practice (EBMTP). Five years after the research priority was published, AMTA then adopted a definition of EBMTP:

"Evidence-based music therapy practice integrates the best available research, the music therapists’ expertise, and the needs, values, and preferences of the individual(s) served" (AMTA, 2015e). The definition provides a guide for clinicians on the importance of choosing interventions grounded in the evidence and encourages them to integrate this evidence when making clinical decisions on music therapy interventions. While preliminary evidence (Hahn, 2013) indicates that music therapists may agree that using research evidence to inform music therapy clinical practice decisions is important, making this a reality in the Music Therapy profession poses its difficulties (Waldon, 2015).

While the job availability for music therapists with diverse populations is at an all-time high (AMTA, 2015a), the challenge for the music therapy profession is to continue to provide the evidence needed to support the growing populations served in music therapy. Evidence of the effectiveness of music therapy also can assist professionals to advocate for the sustainment of current jobs and for the creation of new jobs, therefore serving more clients who are in need. Recognizing that many different populations receive the benefits of music therapy services every day and music therapists work in many different variations of work settings, the profession
has started coordinating its efforts to meet this challenge with its Strategic
Priority on Research (AMTA, 2015h).

Studies on the barriers to conducting clinical research, accessing the theoretical and research evidence, and utilizing the research evidence are emerging in music therapy. Music therapist’s age in years and how long they have been in the profession are associated with their attitudes toward implementing EBMTP (Hahn, 2013). Results also indicate that there are several factors such as knowledge, education attainment, and work setting that are associated with access and utilization of the research (Waldon, 2015). The music therapy profession seems to recognize these barriers and has worked diligently over the past several years to address them through profession-wide research summits and increased number of ‘how to’ research presentations at professional music therapy conferences (AMTA, 2015i). There are still, however, many questions regarding the use of evidence in music therapy clinical practice that have not yet been addressed.

Problem Statement

Currently, healthcare professionals across disciplines report barriers to applying evidence-based practice in their clinical settings: problems with accessing the evidence, understanding and utilizing it, and ultimately applying it in appropriate ways for the populations they serve (Funk, Champagne, Wiese, & Tornquist, 1991a; Majid et al., 2011; Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014; Wolfe, 1999). The problems reported in health professions are not unique to medical public service but extend to any service professional who is held
accountable for the services they deliver and are evaluated by the outcomes of those services. In public education for example, teachers are asked to apply research-informed clinical practice in their teaching methods, applying a clinical model in education while holding their students accountable for learning core standards (Burn & Mutton, 2015; Buysse, Wesley, Snyder, & Winton, 2006; Darling-Hammond, Wilhoit, & Pittenger, 2014; Odom et al., 2005; Sciarra & Hunter, 2015; Troia et al., 2015).

In clinical practice, music therapists are required to choose music-based interventions that are grounded in strong theory and supported by research evidence (AMTA, 2015e). It seems that the underlying assumption is that by using theory and evidence-informed music interventions, the music therapist is better equipped to deliver the most effective treatment for clients and also advocate for the need of music therapy for others, therefore advancing the field (AMTA, 2015h). Although music therapists are required to perform evidence-based practice, critics in the profession argue that music therapists are faced with lack of evidence-supported interventions for the diversity of populations they serve, lack of skill to evaluate good versus bad evidence, and the lack of resources needed to access the evidence. Further, it is argued that even the good evidence and the effective interventions may not be applicable to the unique situations and needs of their clients (Aldridge, 2003, Edwards, 2004, Edwards, 2005; Vink & Bruinsma, 2003).

Based on recent findings, music therapy clinicians report that accessing and utilizing the evidence are the biggest barriers to applying it in their clinical settings.
In fact music therapists who work at certain facilities with better access to the research and have higher educational degrees, tend to use the evidence more (Waldon, 2015). According to AMTA, music therapists should be basing their clinical practice on the best knowledge of theory and current research evidence to accurately inform their music-based decisions (AMTA, 2015e). AMTA provides research evidence materials to their members (e.g., research journal access) but report a drop in membership over the past 10 years (AMTA, 2016). Music therapy theorists argue that evidence is not just in the research but found in the interactions and assessment of the needs of the clients (Abrams, 2010; Aldridge, 2003; Pavlicevic, Ansdell, Procter, & Hickey, 2009). With the growing number of music therapists and jobs available for them (AMTA, 2015a), if theory and research evidence may not be readily accessible to or utilized by music therapists, due to educational background or populations served (Waldon, 2015), what sources are being used to inform their music-based clinical decisions?

**Purpose of the Study**

The purpose of this study was to describe how often Sources of Knowledge were used by practicing board-certified music therapists registered through the CBMT. Drawing from current Sources of Knowledge literature in nursing as well as knowledge from the standards and Scope of Practice of music therapists, the researcher identified 7 Sources of Knowledge of music therapists: Academic and Clinical Training, Clinical Practice, Supervision, Social Situations, Professional Development, Theory/Research Readings, and Non-Theory/Non-Research Readings.
Further, responses to the Theory and Research Readings Source of Knowledge were compared across music therapists’ demographic groups. The researcher-developed questionnaire underwent pilot testing procedures and item analyses throughout the study to determine how well the instrument measured Sources of Knowledge use of currently practicing music therapists.

**Research Questions**

**Research question 1.** How often do currently practicing board-certified music therapists use each Source of Knowledge when determining what music-based intervention they will use in music therapy clinical practice?

**Research question 2.** Are there differences in how often the Theory and Research Readings (TRR) Source of Knowledge is used by different demographic groups (i.e., the number of years practicing, the level of education, the primary population served in current work setting, and AMTA membership status) of currently practicing board-certified music therapists when determining what music-based intervention they will use in music therapy clinical practice?

**Research question 3.** How well does the researcher-created questionnaire measure music therapists’ uses of Sources of Knowledge in Music Therapy?

**Significance of the Study**

Within the past decade, the profession of Music Therapy has followed suit of their peer healthcare disciplines and made creating evidence for current clinical practices a priority for the profession. The profession has also defined Evidence-Based Music Therapy Practice to help clinicians promote advocacy for the
profession and better demonstrate the impact music can have on health. Music therapy researchers and theoreticians have published various perspectives about evidence in Music Therapy (Abrams, 2010; Aldridge, 2003; Edwards, 2004; Edwards, 2005; Hahn, 2013; Kern, 2010; Pavlicevic, Ansdell, Procter, & Hickey, 2009; Vink & Bruinsma, 2003; Waldon, 2015) indicating that the profession needs to continue with high standards of clinical care but should recognize that what is evidence is not standard in the profession. Needing to clearly define and agree on what is evidence in Music Therapy, no one has yet to study this nor have they studied what Sources of Knowledge music therapists actually do use to inform their current clinical practices.

The results of this study will add to the knowledge about various Sources of Knowledge that may be used by currently practicing music therapists. This information could have a large impact on the profession of Music Therapy, especially AMTA, who is looking for ways to provide better access to research evidence to the clinicians delivering the services. The results of this study could potentially inform how Music Therapy as a profession continues to define evidence. If the profession of Music Therapy had more detailed information on their clinician’s Sources of Knowledge use, it could not only describe how often music therapists seek certain Sources of Knowledge but could also potentially provide information on where to strategically place research evidence for access.

This study is also significant because the questionnaire reporting Sources of Knowledge in Music Therapy clinical practice is the first of its kind. Grounding the
development of the questionnaire in current research theory and from available questionnaire models in nursing (Dalheim, Harthug, Nilsen, & Nortvedt, 2012; Estabrooks, 1998; Estabrooks et al., 2005; Gerrish et al., 2007; Zabaleta-del-Olmo et al., 2016), the researcher then used pilot procedures to develop the questionnaire scale and used item analysis procedures to begin the process of validating the instrument. While the pilot procedures and reliability tests in this study did not allow for full review of the validity of the data, the fact that the questionnaire is new to the profession and results can provide information for future study of the instrument is significant.

As the questionnaire for this study was adapted to be appropriate for practicing music therapists, it could also be adapted to be appropriate for professional educators and other health care professionals. Educators and other health care professionals in the United States are also asked to apply evidence in every day practices. This assumes that the practitioner is research-informed, applies the research evidence appropriately, and can demonstrate accountable for their students’ or clients’ successes (Burn & Mutton, 2015; Buysse, Wesley, Funk, Champagne, Wiese, & Tornquist, 1991a; Majid et al., 2011; Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014; Snyder, & Winton, 2006; Darling-Hammond, Wilhoit, & Pittenger, 2014; Odom et al., 2005; Sciarra & Hunter, 2015; Troia et al., 2015; Wolfe, 1999). Therefore, providing data on what Sources of Knowledge are being used could impact how other professions support their practitioners in evidence-based practices.
Limitations of the Study

This study has limitations, some of which are inherent to descriptive survey design research. First, the research design did not allow for the results to lead to causal conclusions. The study results are descriptive and provide comparisons but in no way are expected to show causal relationships. Because the sample for the study was randomly selected from the population (i.e., currently practicing board certified music therapists), the results can provide relatively accurate information on how often certain groups use Sources of Knowledge and about the possible differences in the groups. However, there is potential for volunteer bias as research indicates that those who answer questionnaires tend to have higher social status and intelligence and are more interested in the topic (Heiman, 2001).

There is also an inherent limitation in the rating system used for the Sources of Knowledge scales. The data are not reported as the number of times each participant or group of participants used a certain Source of Knowledge but rather as a self-reported estimate of how often: never, rarely, sometimes, often, or always. While the exact number of times would have been useful, it was not expected that that data would be reliable, because remembering the exact number of times someone uses anything may be very difficult to determine for the respondents, especially if the therapist has been practicing for many years.

Definition of Terms

**Music therapy.** 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, 2016).

**Music-based interventions.** Music-based interventions are the experiences that music therapists create and use in therapy when working with an individual or group. Types of interventions may include music improvisation, receptive music listening, song writing, lyric discussion, music and imagery, singing, music performance, learning through music, music combined with other arts, music assisted relaxation, music based patient education, electronic music technology, adapted music interventions, and movement to music (AMTA, 2016a, para. 5).

**Sources of knowledge in healthcare professions.** Sources of knowledge in health care professions are places and situations where clinicians seek the knowledge they need in order to make clinical treatment decisions. Sources of Knowledge include but are not limited to consultation with other professionals, Internet sources, professional development conferences, the clinician's own experiences, information from patients, and information from evidence-based research (Dalheim, Harthug, Nilsen, & Nortvedt, 2012).

**Evidence-based practice.** Evidence-based practice is the integration of three core factors: (a) best available evidence in the research, (b) clinician's expertise, and (c) needs and values of the client (Baker & McLeod, 2011; Bennett & Bennett, 2000; Buysse, Wesley, Snyder, & Winton, 2006; Dalheim et al., 2012; Messer, 2004; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996; Walker, Stomski, Hebert, & French, 2014).
Evidence-based music therapy practice. Evidence-based music therapy practice integrates the best available research, the music therapists’ expertise, and the needs, values, and preferences for the individual served (AMTA, 2015e, para. 1).
Chapter 2: Sources of Knowledge in Clinical Practice

The knowledge healthcare professionals need when providing clinical treatment for patients is informed by their academic training, past and current clinical experiences, interactions with supervisors or colleagues, professional development experiences, intuition, and various other sources including research theory and evidence (Dalheim et al., 2012; Estabrooks et al., 2005; Funk, Champagne, Wiese, & Tornquist, 1991b; Goodman, 2011; Paans, Sermeus, Nieweg, Krijnen, & van der Schans, 2012). The use of Evidence-Based Practice (EBP) reinforces the idea that research-based, evidence-supported treatments are proposed as the ideal to use in clinical practices (Cochrane, 1972; Ionita & Fitzpatrick, 2014; Kern, 2010; Sackett et al., 1996; Tovey & Dellavalle, 2010; Upshur, VanDenKerkhof, & Goel, 2001). However, there are those who discount the validity of hierarchies of research evidence and the feasibility and ethics to integrating research evidence into clinical practice (Aldridge, 2003; Edwards, 2004; Estabrooks, 1998; Evans, 2003; Fawcett, Watson, Neuman, Walker, & Fitzpatrick, 2001; Iwakabe, 2013; King, 1998). Barriers to incorporating evidence in healthcare clinical practices include practitioners’ attitudes toward EBP and their self-perceived expertise when utilizing and applying research evidence (Baessler et al., 1994; Fawcett et al., 2001; Funk et al., 1991b; Majid et al., 2011; Miller & Messenger, 1978; Retsas, 2000). The opposing views of EBP driving clinical choices, continue to set the stage for debate, discussion, and more research about measures of quality control when practitioners treat patients in a medical setting.
Research Evidence as a Source of Knowledge

In his well-known book titled Random Reflections on Health, Cochrane (1972) urged the National Health Service (NHS) in the United Kingdom to fund systematic reviews of randomized control trials studies in an effort to validate current treatment protocols in order to maintain quality care. Based on his compelling arguments, the NHS provided funds to establish the Cochrane Centre and funded systematic reviews across all areas of health care. The Cochrane Collaboration formed in 1993, expanded the work of the Cochrane Centre in the UK to nine countries, including the United States (The Cochrane Collaboration, n.d.).

Based on the mission and philosophy of the Cochrane Collaboration, health organizations began insisting that the clinical practice of medical practitioners be supported with evidence. The Randomized Control Trial (RCT) was considered the gold standard as it provided evidence to the effectiveness of a treatment protocol, however, as more disciplines joined the evidenced-based movement, what was and is considered evidence in research studies has been expanded to be more discipline specific. For example, study designs such as single-case, correlation studies, meta-analyses, and qualitative studies were incorporated into discipline-specific hierarchy of good evidence (Reed, Kihlstrom, & Messer, 2006). While the profession of Music Therapy has provided a general idea of what constitutes evidence, “efficacy and effectiveness studies” (AMTA, 2015h), it has not yet categorized study designs nor agreed on common quality indicators.
Evidence hierarchical models. Categorizing evidence produced in research studies emerged in the late 1970s in the medical profession. Up until that time, RCTs were the only type of design that was considered to yield evidence. Reporting guidelines were strict and recommendations needed to be of high quality. The RCT itself had its own hierarchy and there were many different models created to check for quality of RCT studies. One example included rating the quality of the evidence in level categories (I, II, III, etc.) with grades (A, B, C, etc.) for quality of the recommendations. "The highest ranking in the hierarchy was Grade A for recommendations supported by Level I evidence, etc." (Evans, 2003, p. 78). The assumption from those who supported hierarchies of evidence models was that "not all research designs are created equal as some run the risk of error and bias in their results" (Evans, 2003, p. 78). However, the ability to judge a study on a standard hierarchy opened up the possibilities of creating other hierarchies inclusive of other research designs.

Because RCTs require randomly assigned samples of equal groups and the medical clinical treatment delivery is not always with groups, systematic reviews of single-subject, sometimes referred to at the time as N of 1 studies, became popular in the medical field in the late 1970s (Evans, 2003). The flexibility of collecting evidence within the patient’s room and analysis of evidence through systematic review allowed for the expansion of the areas of research to shift from medical trials to other areas such as "prevention, diagnosis, prognosis, harm and economic analyses " (Evans, 2003, p. 79). Traditional quantitative, experimental and quasi-
experimental hierarchies are still applied. In one example in the profession of Occupational Therapy, Case-Smith and Arbesman (2008) used a current traditional hierarchy evidence-level model based to classify studies in Autism. The levels were the following:

Level I: Systematic reviews, meta-analyses, randomized controlled trials
Level II: Two groups, nonrandomized studies (e.g. cohort, case-control)
Level III: One group, nonrandomized (e.g. before and after, pretest and posttest)
Level IV: Descriptive studies that include analysis of outcomes (single-subject design, case series)
Level V: Case reports and expert opinion that include narrative literature reviews and consensus statements. (p. 418)

Although recognizing that the medical field was willing to allow other study designs beyond the RCT to be included in the good evidence hierarchy, Evans (2003) criticized the traditional hierarchy models in medicine as they still represented and valued evidence of effectiveness over other designs. Evans believed that there were questions that were not being answered because of limitations of the design expectation to be an RCT or a systematic review of single-subject studies. He argued that there could be evidence that supports appropriateness and feasibility of interventions and therefore applied immediately in a clinical setting.
Hierarchical models that include quality measures. To allow the researcher ability to answer a variety of research questions through different modes of inquiry, Evans (2003) proposed a quality criteria model that encompasses "effectiveness, appropriateness, and feasibility studies paired with quality indicators categorized as poor, fair, good, or excellent" (p. 79). Other healthcare professions followed Evans’s lead and opened the doors for various appropriate research designs with different quality indicators. For example, Tomlin and Borgetto (2011) proposed a model of evidence for occupational therapists that moved away from the traditional hierarchical model and considered other factors as quality indicators such as internal and external validity criteria. The model also incorporated evidence of qualitative studies while maintaining standards of rigor for all designs.

The idea that data outcomes in qualitative research can provide evidence to inform clinical practice is not new. Upshur, VanDenKerkhof, and Goel (2001) presented four types of evidence classified as "qualitative-person; qualitative-general; quantitative-general and quantitative-personal" (p. 91). This model allows for a wide range of research designs applying to various disciplines ranging from historical narrative evidence to effectiveness studies. Although qualitative inquiry may still not be considered as evidence in some disciplines, the need to conduct qualitative inquiry and mixed-methods inquiry to answer research questions is emerging across various healthcare professions and increasing in perceived value within educational research disciplines (Castro, Kellison, Boyd, & Kopak, 2010; Creswell, 2015; Palinkas et al., 2011; Small, 2011).
**Evidence-Based Clinical Care**

While the medical profession and other health professions were debating and continue to debate on what is evidence, the evidence-based clinical care movement was gaining momentum. The initiative sparked in the 1970s was a response to incidences where medical advice was given and treatments were prescribed that were not recently tested through rigorous study and viewed as unreliable. Another primary driving force for the EBP movement was to justify funding positions and resources and therefore adhering to federal policy (Edwards, 2004).

**Evidence-based medicine.** In the mid 1970s, the idea that research evidence should inform medical treatment, instead of decisions being placed solely on the experience and intuition of the doctor, sparked what is still referred to as Evidence-Based Medicine (EBM). EBM was defined 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” (Sackett et al., 1996, p. 71). Sackett and colleagues further refined the definition in 2000 to include the patient as part of the process (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000).

**Evidence-based practice.** An umbrella term, Evidence-Based Practice (EBP), became popular when the idea of having research evidence to support clinical practice was just as beneficial for other health professions outside of medical physicians (e.g., speech language pathologists, occupational therapists,
physical therapists, nurses, and clinical psychologists). The current definition of EBP includes the integration of three common factors: best available evidence in the research, clinician’s expertise, and the needs and values of the client.

The literature indicates that some health profession clinical practitioners generally are in favor of using evidence from the literature to inform their clinical practices. They value its importance because they believe that if strategies are based in clinical evidence from robust research studies, the treatment for their clients is better, resulting in better health outcomes (Tovey & Dellavalle, 2010; Upshur, VanDenKerkhof, & Goel, 2001). Raad (2008) however disagreed and summarized the criticisms of EBP in medicine as having “limited usefulness in its application to individual patients ... and threatens the autonomy of the patient-physician relationship” (p. 154). Rangachari and colleagues (2013) argue that the problem is not that evidence cannot be implemented, is that there are not enough structures in place to help the clinical practitioner apply it at the unit level, meaning that clinical trials are not easily applicable to the one patient level by just knowing about the evidence. They offer medical management strategies to help with implementing at hospitals however note that these types of strategies are not yet being utilized on a large scale level (Rangachari, Rissing, & Rethemeyer, 2013). No matter the pros and cons, encouraging the application of EBP in the clinical setting is still widely accepted as best practice in healthcare professions even though there are well-documented reported barriers.
**Barriers to Implementing EBP in Health Professions**

Since the inception of EBP and particularly over the past 10 years, the literature has been inundated with research across healthcare disciplines on barriers to implementing EBP. Disciplines such as medicine, psychology, physical therapy, speech language therapy, and nursing, report these barriers and have taken steps to gather knowledge on EBP, research utilization, access to the research, and Sources of Knowledge in clinical practice (Funk, et al., 1991b; Gerrish et al., 2007; Miller & Messenger, 1978; Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014; Wolfe, 1999). A review of a recent meta-synthesis barriers study in medicine is described below followed by literature on barriers to EBM and EBP in nursing and psychology.

**Barriers to evidence-based medicine.** In the hopes that identifying the barriers might be the first step to removing the barriers to EBM, Sadeghi-Bazargani, Tabrizi, and Azami-Aghdash (2014) conducted a systematic review of seven well-known medical databases searching for studies on barriers to EBM. After identifying 106 articles, the researchers found the most common barriers to EBP to be “Research barriers, lack of resources, lack of time, and inadequate skills” (p. 1). Specific to EBM, the most common barriers were “inadequate access, lack of knowledge, and financial barriers” (p. 1).

**Barriers to evidence-based nursing.** Evidence of barriers in nursing clinical practice dates back to Miller and Messenger’s study in 1978. The researchers asked a random sample of currently working clinical nurses from the
New York state area ($n = 177$) about their barriers to using research in their clinical setting. They reported their biggest barrier as not having access to the literature. When asked their preferences of where to look for the research, 35% reported needing a wider distribution of the evidence, 32% preferred getting the information at conferences, and 20% preferred journal articles. This provided good information for direction of the profession with distribution of the evidence.

For the next decade, the nursing evidence-base literature grew, with an increase in more quality studies and in new areas of nursing. Even with more evidence in the nursing literature, the use of evidence in nursing clinical practice was still low in the late 1980s and early 1990s. In response to the low utilization of evidence, Funk, Champagne, Wiese, and Tornquist (1991b) asked nurses about their perceptions of barriers to using research finding in practice and ask them what factors would facilitate such use. The researchers used a 28-item BARRIERS scale that focused on utilization of the literature to inform clinical practice. Out of 5,000 nurses sampled, 1,989 responded (40%) to the questionnaire. The top three barriers reported by nurses who perceived the barrier as great or moderate were “enough authority to change patient care procedures” (75.2%) (p. 92) and "insufficient time on the job to implement new ideas" (75.1%) (p. 92). The third most reported barrier was the nurse being unaware of the research (74.7%). Based on these findings, even after the profession of nursing expanded their clinical evidence dissemination to several journals and allowed more access, a majority of
the nurses reported that they were unaware of the research and if they were aware, they did not have the time or authority to implement new ideas (Funk et al., 1991b).

By the late 1990s and early 2000s the research literature in nursing branched out beyond barrier research to Sources of Knowledge that inform clinical practice inquiry. In 2012, Dalheim and colleagues asked 661 nurses about their barriers to finding knowledge and the sources of evidence that they use, using a tool developed by Gerrish et al. (2007). The five greatest barriers reported were "1) insufficient time to find research reports, 2) insufficient time to find organization information (such as guidelines and protocols), 3) lack of confidence in assessing the quality of research, 4) difficulty in understanding English-language publications and 5) insufficient time at work to implement changes in practice" (Dalheim et al., pp. 5-6). The top five sources of evidence were “1) Information that I learn about each patient as an individual, 2) My personal experience of caring for patients over time, 3) Information I get from local policy and protocols, 4) Information senior clinical nurses share, and 5) What doctors discuss with me” (p. 5). Researchers in nursing understand the barriers and have provided resources for nurses to understand the research in to apply evidence-based nursing in their clinical practices (Fawcitt & Garity, 2008).

**Barriers to evidence-based treatment in psychology.** Similar barriers have been reported in psychology, occupational therapy, physical therapy, and others including the inability to access the evidence, interpret the results of
evidence-based research, and directly apply the interventions found to be effective in the research to real-world clinical practice (Bennett et al., 2003; Iles & Davidson, 2006; Juel, 2012; Leach & Gillham, 2008) Studies show that the specialized approaches used in clinical psychology require flexibility that prevents the therapist from using treatment evidence protocols that are not as flexible (Kazdin, 2008; Wolfe, 1999). Applying the evidence directly causes concern with psychologists as clinical trials tend to be focused on people who only have single diagnoses, however this is not common in clinical practice as many patients present with comorbid disorders (Kazdin, 2008; Safran, Abreu, Ogilvie, & DeMaria, 2011).

The examples provided from the medical literature, nursing, and psychology literature provide common themes regarding implementing EBP in the clinical setting. First, there are barriers to accessing the literature (e.g., time, resources, etc.), followed by varying abilities to discern what is considered good evidence and understanding the results of the studies. Once the evidence is clear to the practitioner, there are barriers to applying it, either the facility is not open to the clinician applying new evidence-based techniques and/or the clinicians do not have time to learn the new techniques. In spite of these perceived barriers to access and utilization, many clinicians argue that evidence in clinical trials and other research methods do not take into account the changes needed in the moment with the client or patient.
Research Evidence in Music Therapy

The American Music Therapy Association (AMTA) has mirrored other healthcare professions’ efforts and made it a priority to assist music therapists and music therapy researchers with bolstering the profession’s evidence base and advocacy efforts. For the past 10-15 years, these efforts have included adopting a definition of evidence and Evidence-Based Music Therapy Practice (EBMTP) and providing research-focused conference sessions on EBMTP. These sessions included topics such as how to conduct clinical research, how to advocate for music therapy by speaking about the research, and how to evaluate research. The Cochrane Handbook for Systematic Reviews of Interventions (Higgins & Green, 2008) is now suggested as a primary source that music therapists should use when finding good evidence that can be integrated into clinical practice (AMTA, 2016).

With the efforts to encourage clinicians to find good evidence to utilize in practice also came the recognition that music therapists might need assistance with identifying the research they needed and assessing its value. Vink and Bruinsma (2003) advised music therapists on how to formulate a question that they have about a client or group and find the evidence needed through the Cochrane review. They advised that if research was found that was not on the Cochrane review, the therapist should know how to scrutinize the evidence and then determine if it is good enough to apply. Edwards (2009) created a research template checklist on what to look for when reviewing evidence-based research. Else and Wheeler (2010) provide information and guidance on recognizing evidence in research reviews.
In spite of the efforts on behalf of some researchers to provide music therapists with advice on how to understand evidence, other theorists in music therapy disagreed on the value placed with what other professions deemed as good evidence. Edwards (2004) argued that the research evidence that AMTA wants the profession to produce and/or apply in clinical practice is misguided by pre-determined definitions of good evidence and not applicable to music therapy current settings and the needs of clients. Kern (2010) disagreed and proposed that music therapists should look to related disciplines to determine what is considered evidence. She described how music therapists could adopt how early childhood teachers and special educators integrate the best evidence into their teaching practices. She then presented a systematic way of analyzing research and provided examples of hierarchy levels of evidence for research on Autism.

Providing a compromise to extreme diverse views, Abrams (2010) proposed that evidence is not just external to a music therapy session but internal to what happens in therapy. He provides clinical examples of what to look for in the literature and how to apply it in the clinical setting based on four epistemological domains, cross-referencing them with evidence that is exterior to the session and the client and what is interior to the session and the client.

Monitoring the discussion and writings of those for and against what was evidence in music therapy, the AMTA Assembly of Delegates who represent membership of the AMTA came to a consensus in 2010 on a definition of evidence: “Evidence in music therapy is defined as outcomes of efficacy and effectiveness
studies” (AMTA, 2015e). The following year, in a presentation to AMTA clinicians, a newly adopted Music Therapy Research Priority of 2011, was presented. Else (2011) provided further clarification of the types of studies that were considered evidence by AMTA. “Efficacy studies: Using well-controlled experimental design (e.g., RCTs) that demonstrate whether the treatment affects the outcome” (slide 55) and “Effectiveness studies: Examines whether the treatment affects the outcome in the real world” (Else, 2011, slide 56). Assuming that Else is referring to generalizability when saying ‘real world’, the definitions themselves are flawed as true experimental designs are set up in a way to provide evidence that the result could be generalizable to the population given the same set of circumstances (Krathwohl, 1964). However, the intent seems to be that quantitative designs, either quasi-experimental or experimental, should be viewed as the music therapy clinician’s primary source of research evidence.

Evidence-Based Music Therapy Practice

At the same time evidence was defined, AMTA provided its clinicians with guidelines on applying the evidence in clinical practice, “Evidence-based music therapy practice (EBMTP) integrates the best available research, the music therapists’ expertise, and the needs, values, and preferences for the individual served” (AMTA, 2015e). Prior to the adoption of EBMTP, researchers in music therapy were not so optimistic about its appropriateness. O’Callaghan (2003) indicated that the evidence-based music therapy practice movement drives practice decisions away from client needs to therapist needs. The measurement tools that
may be evidence-based make the outcome data the driver of the therapeutic process, not the client/therapist therapeutic relationship, which should drive all decisions, according to O’Callaghan. The therapist must have the freedom to change the intervention to the patient’s response, ultimately having permission to change the intervention altogether (O’Callaghan, 2003). Aldridge (2003) agreed that evidence-based practice promotes thinking outside in, instead of inside out, where clients’ needs should be considered first as well as the clinical question the music therapist is asking. While Aldridge did not delve into what is evidence, he urged music therapists not to use a technique just because it was based in quantitative evidence but rather keep the care of the patient central to the process and draw on sources that are needed for the client’s treatment. Soon after the adoption of EBMTP by the AMTA in 2010, two studies on knowledge about EBMTP and research utilization were published (Hahn, 2013; Waldon, 2015).

Regarding knowledge of EBMTP, Hahn (2013) found that a majority of the 643 respondents to his questionnaire were very familiar with EBP and those who were familiar generally had favorable attitudes toward EBP. Waldon (2015) asked music therapists who were current members of AMTA about their utilization of the research. Barriers with the highest mean scores included “insufficient time on the job to implement new ideas, no time to read research, and isolated from knowledgeable colleagues” (p. 185). He also found that therapist factors were positively correlated with their utilization of the research. For example, those with higher degrees accessed the research more than those with entry-level bachelor
degrees. Also, the type of facility where the music therapist worked played a role in who accessed the research. For example, music therapist respondents who worked in medical facilities, where evidence-based research is an important part of treatment and where they had access to the research databases, accessed the research more than those who did not work in a medical setting. While the literature in music therapy is in its infancy regarding what is evidence, barriers to utilizing the evidence is becoming clearer (Hahn, 2014; Waldon, 2015) and the results seem to mirror barriers to research utilization research of other health care disciplines (Majid et al., 2011; Pain et al., 2004; Sadeghi-Bazargani, Tabrizi, & Azami-Aghdash, 2014; Wolfe, 1999).

**Sources of Knowledge Beyond Research Evidence**

Based on a push from the medical professions for practitioners to provide EBM, and recognizing the barriers to utilizing the evidence for the well-being of patients, theorists and researchers began to challenge the idea that scientific evidence was the only source of knowledge for clinical practice (Baessler et al., 1994; Carper, 1978; Johnson & Ratner, 1997; Mulhall, 1998). In fact, some believe that research evidence does not always transfer directly to their clinical practice and therefore view other sources as just as important as evidence. Critics of research evidence being a primary source for clinical intervention choices have identified other sources that impact clinical practice.

Sources of Knowledge (SoK) are defined as places and situations where clinicians seek the knowledge they need in order to make clinical treatment
decisions (Dalheim, et al., 2012). There has been some research across healthcare disciplines regarding treatment- decision knowledge sources (Cocks & Ferreira, 2013; Finn, 2011; Kawamoto et al., 2005; Majid et al., 2011) and the nursing profession provides us with information that closely ties to the current study in regards to patterns of knowing (Carper, 1978), documented and defined SoK, (Estabrooks et al., 2005; Rycroft-Malone et al., 2004) and identifying demographic factors that impact which sources are used to inform their clinical practice (Dalheim et al., 2012; Estabrooks et al., 2005; Paans et al., 2012).

**Patterns of knowing.** In the late 1970s, researchers in nursing began to describe what information a nurse needed in order to do their jobs. The idea that clinical nursing and the skill sets involved should be based primarily in research evidence was appealing and according to Carper (1978), at a point of urgency, however very difficult for a nurse to apply. The nursing profession, at the time, was in the beginnings of a resurgence of creating empirical evidence for the nursing clinical professional. Carper, a researcher and nurse herself, theorized that nurses possessed knowledge that included the science of nursing but extended beyond to other patterns of knowing. Carper clearly defined empirical knowledge, the science of nursing, but then added rich descriptions of the esthetic, personal knowledge, and ethical patterns of knowledge.

**Empirical knowledge.** A pattern of knowledge, Empirical Knowledge, was referred to as the science of nursing and what would be most equated with scientific evidence. Although defining evidence was in its infancy in nursing at the time, the
profession of nursing also worked to equate itself with that of creating evidence like other medical disciplines. Carper (1978) described Empirical Knowledge as that knowledge which is “factual, descriptive, and ultimately aimed at developing abstract and theoretical concepts” (p. 15). She described this knowledge as open for public scrutiny and verified for accuracy.

**Esthetic knowledge.** A pattern of knowledge that went beyond that of observing and recognizing the needs of a patient but also by establishing an empathic connection with the patient, was called Esthetic Knowledge (Carper, 1978). Esthetic Knowledge was an art and the nurse was an artist, learning with practice and gaining skills on how to make a connection with the patient that goes beyond looking at the data. When connecting with the patient and with gaining experience of connecting with many patients through empathy, the nurse then gains competence to make treatment decisions that are more meaningful and promoting better treatment with the patient.

**Personal knowledge.** Personal Knowledge, a pattern of knowing, lends itself very closely with psychology regarding the clinician-patient relationship. Different from just having empathy, Carper (1978) recognized that the nurse must know his or herself first in order to effectively interact with a patient. The idea that characteristics of the self could impact the treatment and well-being of the patient are emphasized with the Personal Knowledge pattern of knowing.

**Ethical knowledge.** The final pattern of knowing, Ethical Knowledge, is related to not only knowing what is the moral decision would be but acting upon it
as well. According to Carper (1978), the nurse must know about different philosophies of what is good and right and know how to make clinical decisions based on theoretical knowledge and need of the patient. This goes beyond knowing and adhering to the ethical codes but having the ability and knowledge to make theoretically-informed moral decisions.

Carper (1978) admitted that these patterns of knowledge should be studied and understood individually but also were interrelated fundamental concepts. She theorized that studying these patterns could not only inform current education and training practices but would provide “awareness of the complexity and diversity of nursing knowledge” (Carper, 1978, p. 21). With the bold entrance of EBM in the 1990s and the realization in the 2000s that applying EBM was at times very difficult and sometimes not appropriate, researchers in nursing looked to Carper’s theoretical concepts to help inform them of the current state of clinical nursing knowledge sources.

**Sources of evidence.** Rycroft-Malone and colleagues (2004) provided a model of evidence for nurses that includes four sources of evidence: research, clinical experience, patient experience and information from the local context” (Rycroft-Malone et al., 2004, p. 81). In their model, these four sources of evidence intersect and result in “person/patient-centered, evidence-based care” (p. 87). Moule and Goodman (2009) categorized SoK in nursing practice as research knowledge, per experience, and through personal knowledge. Research knowledge is open to scrutiny based on research study design criteria adding that in order to
apply this knowledge, nurses must be consumers of this knowledge and therefore know how to scrutinize. Experience knowledge includes applying accepted traditional methods, relying on the nurse’s intuition and tacit knowledge. Intuition is the sixth-sense knowledge and tacit knowledge is gained in practice. Personal knowledge could be gained through trial and error, through written reflection, or drawing on multiple sources to experiment with a new treatment or practice. Moule and Goodman (2009) continue by noting that using personal knowledge as a valid source has been criticized as a popularized way of treating and may not be based on reliable information or from limited exposure or trials.

**Sources of Practice Questionnaire**

Estabrooks (1998) created the first questionnaire for nurses about their SoK that included both clinical practice sources and research sources. After pilot testing, the final questionnaire included 16 items, each a different SoK, including 3 items that were research journal sources, with a rating scale 1-5 (Never – Always) for each. Estabrooks distributed the questionnaire to a random sample of 1,500 staff nurses from a Canadian regional association membership list. The final sample of usable questionnaires by respondents was 600 (40%) of the random sample. When ranked by mean scores, *Information that I learn about each patient/client as an individual* ranked the highest; *My personal experience of nursing patients/clients over time* ranked second highest; and *Information I learned in nursing school* ranked third highest. The three items related to research sources ranked rather low at 12th, 14th, and 15th with the item *Information from the media* at the lowest at 16th (Estabrooks,
1998, p. 25). Results indicated that practice knowledge should be given more consideration by researchers and that all source items should be of more focus in nursing education.

In 2005, Estabrooks and colleagues further developed the questionnaire and interviewed 119 Canadian nurses who worked with either pediatric or adult patients, conducted 17 focus groups, and observed nursing clinical practice in both settings. The interview questions were geared toward what knowledge sources nurses used when making treatment decisions in their clinical practice. Qualitative results indicated that their sources came from four broad categories: “social interactions, experiential knowledge, documentary sources, and a priori knowledge” (Estabrooks et al., 2005, p. 462). Social Interactions included 22 sub-categories, classified as informal and formal social environments where the nurse would interact with other professionals (e.g., physicians, residents, patients, conferences, rounds, journal clubs, etc.). Experiential Knowledge included three sub-categories including a nurse’s intuition. Documentary Sources identified nine sub-categories with books, journals, and previous research falling into this category. A-Priori Knowledge included personal beliefs, education, and common sense as sub-categories. When comparing which sources were used more often, Estabrooks and colleagues (2005) found that Social Interactions, informal and formal, were used most often and Documents, specifically books, journals, and previous research sources, were reported as being used the least. Barriers to utilizing the research noted by the nurses indicated lack of time to read,
understandability of the research, and usability of the research findings. These findings provided a theoretical base for future descriptive research on sources of knowledge in nursing practice as well as research on barriers to implementing research evidence into nursing clinical practice.

In 2016, Estabrooks’ Sources of Practice Knowledge questionnaire was developed further to include scales of perceived barriers in EBP and analyzed for demographic factors that could influence the sources and perceptions. Gerrish and colleagues (2006) renamed Estabrooks’ questionnaire, the Developing Evidence-Based Practice Questionnaire (DEBP) that provided scale measurement of nurses’ perceived barriers to using evidence as well as their SoK in clinical practice. Questionnaire development included conducting two pilot studies with two populations of clinical nurses, 598 clinical nurses at two hospitals and 689 community nurses in 12 primary health facilities. Results indicated acceptable measurement characteristics with an overall reliability coefficient Cronbach’s Alpha of .874, with a range of scores of the five scale sections from 0.730 - 0.913. Section 1, the Sources of Knowledge section contained 22 items and had an overall Cronbach’s Alpha of .788 for the scale. The researchers then conducted an Exploratory Factor Analysis for all items in the questionnaire, extracting 10 factors and provided the rotated factor matrix data results in a table in the article. Upon visual examination of the 22 items on the Sources of Knowledge scale on the rotated matrix table, 8 source items including journals, media, and texts books loaded together. Five items related to training and policy guidelines loaded together. Six items that including
practitioners sharing information and experience around other medical professionals loaded together. Four items including personal experiences and intuition loaded together with overlap of 2 of 3 items in the final factor. Two items loaded in two factors; product literature and policy guidelines (Gerrish et al., 2007). While it is not clear about the reliability of the tool based on the Cronbach’s Alpha data statistics of the SoK items, the factor analysis with the 22 SoK items helped further inform the possible scale categories for the SoK in Music Therapy Questionnaire for this dissertation study.

Numerous studies have used the DEBP with various different populations of nurses since Gerrish and colleagues study in 2006 with varying results. For example, after distributing the DEBP questionnaire to a cross section of nurses ($n = 407$) over 20 units at a large hospital in Norway, researchers classified Sources of Knowledge in five scales including the Nurses Own Experience (5 items), their Social Interaction (3 items), their Internal Sources of Knowledge (6 items), the Research Evidence (5 items), and their External Sources of Knowledge (3 items), (Dalheim et al., 2012). The researchers also asked nurses about potential barriers to implementing evidence-based practice and their self-reported expertise with research utilization skills. Results indicated that demographic factors of “age, number of years of nursing practice, and the number of years since obtaining the last health professional degree” (Dalheim et al., p. 1) were related to SoK and Research Utilization. Particularly with age, the older the nurses were, the more they relied on personal experience as a SoK. The younger the nurses, the more they relied on
External Sources of Knowledge. Research evidence was the least used source by all participants however had a positive correlation to age.

**Sources of Knowledge in Music Therapy**

For the purpose of this study, Music Therapy SoK are defined as experiences that inform any clinical decision that a music therapist makes in clinical practice. In a classroom action-research project Baker (2007) asked 15 Master’s level music therapy students what factors they thought were important for clinical reasoning when making music therapy clinical decisions. They reported the top factors as "training of therapist, theoretical orientation, therapist intuition, past experience, prior knowledge, personality of therapist, ability to think logically, and knowledge of relevant research" (p. 34). Students also reported on what they viewed as necessary knowledge required to make informed choices. In the area of clinical research and knowledge, more students selected "techniques that are appropriate and (their own) past research expertise" (p. 35), as having the biggest impact on how a music therapist should be informed when therapists making appropriate clinical decisions. The SoK in Music Therapy for the current study were developed based on literature reviewed previously on patterns of knowing, SoK in nursing and in other health professions, and knowledge of current music therapy academic training and current clinical practices.

**Academic and clinical training.** AMTA developed Standards for Education and Clinical training that encompass standards for academic institutions, competency based education, the bachelor’s, master’s degree, and doctoral degrees,
as well as qualifications and staffing, and quality assurance of curriculum structure (AMTA, 2016; National Association of Schools of Music [NASM], 2015). Each academic program is reviewed every 10 years after its initial program approval by AMTA and NASM for quality assurance that the standards are being maintained for the program.

**Bachelor’s level professional competence.** The experiences and knowledge gained received in a student’s academic and clinical training are the foundation for their future clinical work as music therapists. For entry-level competence, each academic program is required to ensure that all AMTA Professional Competencies are addressed in the academic coursework and in all aspects of entry-level clinical training. These competencies were first developed for music therapists in the AAMT association by Bruscia, Hesser, and Boxhill (1981), adopted for NAMT in 1996 and then fully adopted by the unified association’s Assembly of Delegates of AMTA in 1999. The professional competencies are reviewed periodically to support the clinical and research needs of the profession with the most recent review conducted in 2013 (AMTA, 2015c).

All areas of professional competence must be covered in the academic program (academic courses, pre-internship clinical, internship). These include music foundations (theory, history, performance, functional music skills, conducting, movement), clinical foundations (therapeutic application, principles, and relationship), and music therapy (foundations and principles, assessment, treatment planning, therapy implementation, therapy evaluation, documentation,
termination/discharge planning, professional role/ethics, inter-professional collaboration, supervision and administration, research methods). There are a total of 117 individual professional competencies that need to be met in the academic coursework, pre-internship clinical, and in internship in order for a student to be allowed to take the national board certification exam (CBMT, 2016). The student is expected to have at least 180 pre-internship clinical training hours, have worked with a minimum of three different populations during their pre internship clinical work, and gain a minimum of 1200 hours total clinical hours by the end of internship. All clinical training experience requirements are under the auspices of the university and the university is required to ensure that students have proper supervision by board-certified music therapists.

**Advanced competencies.** Beyond entry-level, post internship, music therapists have opportunities to gain a master’s degree in academic programs that have approved master's degrees in music therapy. The advanced competencies are in line with the AMTA standards for master's degrees and the NASM standards for master’s degrees in schools of music. The advanced competencies were first adopted by AMTA in 2009 and a new version will be reviewed by the AMTA Assembly of Delegates in 2015 at their national conference in November. Any changes will be effective 2017 (AMTA, 2015b). At this time there are no doctoral level standards or competencies, therefore AMTA does not approve new doctoral programs or review current doctoral programs. Those programs are reviewed by the individual schools.
Unlike the entry-level professional competencies, not all advanced competencies in master degree programs are addressed in a music therapy master’s level academic program. The academic program is required to provide depth and breadth of competence beyond entry-level in music therapy theory and advanced clinical skills as well as in depth of knowledge in two of the following: research, musical development and personal growth, and clinical administration (AMTA 2015b).

**Clinical practice experiences.** Once a music therapist gains the MT-BC through the Certification Board of Music Therapy (CBMT) he/she can then practice clinically. As a licensed counselor may use different verbal counseling techniques when treating a patient, a music therapist uses various forms of music in therapy to evoke therapeutic change. The music therapist is a trained musician, who has learned to be ready to lead, accompany, sight-read, transpose, and/or harmonize various different styles and genres of music on various different instruments (e.g., piano, guitar, voice) based on the need of the client. A Music Therapist may have a primary instrument, one that they feel the most comfortable using in a clinical session, such as a piano, guitar, voice, or drums. A musician, the music therapist is also qualified to provide music-based experiences that facilitate and support their clients’ goals. Music therapists use music as a medium for therapeutic change (AMTA, 2015d).

**Scope of practice.** Music therapists are required to work within a well-defined Scope of Practice. Standards of care include (a) accepting referrals for music
therapy services, (b) conducting a music therapy assessment to determine if music therapy treatment is recommended, (c) developing and implementing an individualized music therapy treatment plan based on the recommendations of the assessment, (d) providing on-going evaluation of clients’ responses to the music therapy interventions, and (e) determining plan for dismissal from services if needed (AMTA, 2015d). Music therapists must ensure that clients are receiving music therapy services in the least restrictive environment and must maintain music skills and knowledge of the most recent research regarding best practices in music therapy.

**Therapy environments.** Music therapists may deliver one-on-one direct services, group services, and/or consultative services. The environment needed and the amount of time a client may need music therapy is determined by the music therapy assessment. This determination is based on how well the music intervention motivates the client to work on domains of functioning. The music therapist may also find in the assessment that the client responds to certain types of music therapy interventions. The types of interventions needed determine what type of environment is needed for the client to maintain or improve certain skills. The appropriateness of the time spent in music therapy and the setting for the therapy are evaluated at each session (Davis et al., 2008).

**Treatment domains.** Unlike some therapy environments, the music is the medium to promote change in non-music domains. For example, in occupational therapy, the goal for the therapy is to help a client maintain or improve their ability
to perform occupational tasks. In music therapy, the goal is not to maintain musical tasks but to support non-musical tasks through a musical means. It is analogous to counseling where the counselor is not training the patient on how to be a better counselor but using counseling techniques to help the patient work through emotional problems that impact their lives. “Music therapy-specific assessment, treatment planning, and implementation consider diagnosis and history, are performed in a manner congruent with the client’s level of functioning, and address client needs across multiple domains” (AMTA, 2015d, p. 2). Domains that may be impacted by the music interventions may include, but are not limited to: motor skills, communication, cognitive, emotional, social, self-organization, and/or quality of life skills.

**Populations served.** Music therapists may work with various populations, at a variety of facilities, and with wide range of ages of clients. According to the AMTA 2015 Member Survey and Workforce Analysis (2015), “an estimated 1.5 million people received music therapy services in 2014 and music therapists provided services in an estimated 33,330 facilities in 2014” (p. 2). Populations served include premature infants through the life span to people who are in hospice and palliative care. Music therapists serve their clients in facilities such as hospitals, schools, nursing home facilities, day care facilities, in music therapy clinics (AMTA, 2015a).

**Music interventions.** According to the AMTA & CBMT Scope of Practice, music interventions may include “music improvisation, receptive music listening, song writing, lyric discussion, music and imagery, singing, music performance,
learning through music, music combined with other arts, music-assisted relaxation, music-based patient education, electronic music technology, adapted music interventions, and movement to music” (AMTA & CBMT, 2015, p. 2). Music therapists can choose from a range of established techniques to deliver in treatment. This allows for the music therapist to have flexibility with choosing the appropriate interventions for a wide-variety of population need. Music therapists are trained to decide what music interventions are the most appropriate to use with certain population to address certain non-musical domains for treatment (Davis et al., 2008).

**Music-based intervention choices.** When adhering to the Music Therapy Scope of Practice, a music therapist must make well-informed music-based treatment decisions. Decisions that determine whether music therapy treatment is appropriate for a patient or client are made upon conducting a music therapy assessment. The music therapist must also make on-going decisions regarding the most appropriate music-based intervention to use. The following example illustrates this point.

A child with autism who may have trouble socializing with a peer may enter into a social situation better with a musical medium such as instrument playing, singing, or dancing, and connect with peer in a non-verbal and musical way instead. Once this connection is made, the therapist then may help the child generalize how to socialize with others from the safe musical space gradually to a non-musical space, such as playing with toys. The music
provides a safe and natural way for the child to overcome barriers that cannot be overcome without music.

**Philosophical orientations and approaches.** Once an intervention is chosen, music therapists vary in their delivery based on their own philosophical orientation and therapeutic approach. Approaches in Music Therapy have been developed and adapted over time (Darrow, 2008). Current approaches are adapted from music educational models, behavioral models, psychotherapeutic models, and medical models of delivery. However, music therapy approaches tend to manifest themselves on a continuum from pure improvisational music therapy (akin to pure client-centered humanistic verbal counseling approach) to pure behavioral music therapy where the music is used as a reinforcement to promote non-music behavioral objectives (Davis et al., 2008). Specific definitions of philosophical orientations and approaches used in music therapy are provided in Chapter 4, Scale Development.

**Approaches impact music intervention choices.** A music therapists’ clinical approach may play an important role in how they make music intervention choices. Bae (2011) interviewed three music therapists inquiring into how they chose music listening interventions during clinical sessions. Results indicated that while all three therapists were grounded in different approaches (e.g., Guided Imagery in Music, Nordoff-Robbins Music Therapy, and Cognitive Behavioral Music Therapy) and each had varying ideas on how music listening needed to be included within clinical practice, each showed a strong positive relationship between their own particular
approach and their own perceived influences and choices. This indicates that a music therapist’s particular theoretical approach can have an influence on their music intervention choices.

The music-based theoretical framework approach a music therapist’s uses can impact music intervention choices during a music therapy session. Beer (2011) provided a theoretical model for structuring music improvisation experiences. She indicated that if the music therapist knows the music-based improvisation techniques, knows the continuum illustrated in the model from unstructured improvisation to structured, and then knows what client behaviors indicate moving through the model, the music therapist can then actively make musical intervention choices and change when needed by the client.

Clinical reasoning techniques could also impact music intervention choices. Baker (2007) used an established Problem-Based Learning (PBL) model providing a sample case description. Clinical reasoning was defined as "integrating theory, evidence-based research (when it exits), and knowledge formed from prior experiences" (Baker, 2007, p. 28). The students were required to work through the possible diagnoses of the client presented and research possible treatment options. Data from the study indicated that the students' understanding of the process of clinical reasoning improved from the beginning to the end of the study.

Thompson and O'Callaghan (2013) reported on how well a pre-developed decision tree framework for assisting with choosing music-based interventions worked a few group case examples of women who were in various stages of cancer.
The researcher provided time at the beginning of each session for therapist facilitated group conversations and chose active or receptive music interventions depending on the behaviors, words expressed, and body language of the women in the group. Results indicated better group cohesion and regulated behaviors such as agitation to relaxation based on the choices made by the music therapist.

The literature also points to how research evidence impacts the treatment choices of music therapists (Rice & Johnson, 2013). The authors proposed that in-depth understanding of the client’s medical needs is crucial to knowing what music techniques are appropriate. "Clinical decision making with neurological patients is based on a firm understanding of current theories of motor control in neurological rehabilitation" (Rice & Johnson, 2013, p. 58). They added that the challenge for the music therapist is to be able to integrate this knowledge with current research and “multiple perspectives” (p. 58). Using an established community based treatment model, Rice and Johnson (2013) described how Neurologic Music Therapy (NMT) techniques can be integrated into this model. This type of clinical decision-making is made prior to treatment, guided by a strictly defined music therapy approach (NMT) with techniques established in the research as evidence.

**Supervision experiences.** The music therapist gains knowledge from being supervised by other music therapists or from facility supervisors. Supervision can take the forms of being observed or having music experiences modeled during a session. Post observations/modeling can take the forms of video feedback sessions with the supervisor or verbal processing sessions with the supervisor between
sessions. Another form of supervision in music therapy is that of music-based supervision. This is in response to the therapist needing to process through any emotional issues that arose in the therapist that may have challenged the therapist to be purely client centered. Projecting thoughts and feelings to the client is sometimes referred to as countertransference. These supervision sessions may be individual or group, facilitated by the supervisor. This may take the form of instrument improvisation or song writing and allow the therapist to freely process in a non-verbal way any countertransference issues that arose in the therapy (Forinash, 2000).

**Social situations.** Social Situations was chosen as a SoK in music therapy due in part to an insurgence of social media professional chat groups in music therapy. Moorehead and colleagues conducted a systematic review of how social media functions in health communication. They found seven main uses of social media “...including focusing on increasing interactions with other, and facilitating, sharing, and obtaining health messages” (Moorhead et al., 2013, p. e85). Although there is not much information about how much social media functions for music therapy nor how it is impacting the profession of music therapy music therapists do use social media as a venue for professional interactions. A few of the popular social network applications used by music therapists are described below.

**Facebook.** The creators of Facebook (2016) describe the types of activities for free public use as the following: “Facebook pages are for businesses, brands and organizations to share their stories and connect with people. Like profiles, you can
customize pages by publishing stories, hosting events, adding apps and more.
People who like your page and their friends can get updates in News Feed. You can create and manage pages from your personal account" (https://www.facebook.com/help/174987089221178, retrieved on May 16, 2016).

Upon a cursory search on the Google search engine (Google, 2016) with the search term “‘music therapy’ Facebook pages” yielded 619,000 hits (https://www.google.com/?oi=1&espv=2&q=%22music+therapy%22+facebook+pagesand, retrieved on May 16, 2016).

A very popular U.S. national, closed to members only, Facebook page is named Music Therapists Unite with currently 3,956 members. “It is available to credentialed music therapists, music therapy interns, and music therapy students from around the world.” https://www.facebook.com/groups/353969121289000/, Retrieved on May 16, 2016). Ideas can be shared and resources such as job postings, supervisor lists, and helpful tools for clinical work are available to members. It is designated as a support group. Facebook is also the home to music therapy research pages, one titled Music Therapy Research Blog. A blog is a way to share information but not necessarily used as a social medium. The purpose of this blog is “to provide a resource for the music therapy clinician – where you can find information on current research, ways to generalize findings into practice, and tips about maintain an evidence-based practice” (https://www.facebook.com/musictherapyresearchblog/info/?tab=page_info, Retrieved on May 16, 2016). This particular blog is linked to a website
www.musictherapyresearch.com with creators who have higher education credentials and leaders in the field of music therapy research.

**Twitter and Pinterest.** Other types of social media include Twitter: “Twitter is an information network made up of 140-character messages called Tweets. It’s an easy way to discover the latest news related to subjects you care about” [https://support.twitter.com/articles/215585, Retrieved on May 16, 2016]. A quick search on Google “music therapy” twitter yielded 637,000 hits. Similar to Facebook, Twitter accounts seem to be music therapy associations, academic institutions, businesses, however many are individual accounts of individual music therapists updating their Twitter feed with information about their work for example. Another social network functioning primarily for posting pictures is called Pinterest: “Pinterest is a visual bookmarking tool that helps you discover and save creative ideas” [https://help.pinterest.com/en/guide/all-about-pinterest, Retrieved on May 16, 2016]. A Google search “Music Therapy” Pinterest resulted in 491,000 hits. The top two hits included “Therapy, Music and Children Songs”; “Music Therapy Ideas”. Other topics included ideas for music therapy and mental health, and music to support speech.

**Social gatherings.** The literature in music therapy has not yet provided statistics on the types of professional and non-professional social gatherings that take place amongst music therapists. We can however look to state, regional, national, and international conference proceedings for advertisements of different social gatherings. For example, at the AMTA national conference in Kansas City, MO
in November 2015, there were over 30 academic institution alumni gatherings, private receptions, and countless unannounced gatherings over dinner and drinks that are typical at a conference setting (AMTA, 2015i, Kansas City conference proceedings). It is also likely that there are planned professional and unplanned social gatherings that are facility-based for music therapists.

**Professional development.** Music therapists are required and ethically bound to continue to gain knowledge about their music therapy clinical practices by participating in professional development experiences. The experiences are required for them to maintain their MT-BC credential and may be required by their administrators to maintain their employment status. The MT-BC recertification professional development requirements encompass a wide variety of experiences where music therapists gain knowledge and can get credit for producing knowledge.

The initial certification and recertification for music therapists is monitored by the Certification Board for Music Therapists (CBMT). “Its MT-BC program has been fully accredited by the National Commission for Certifying Agencies (NCCA) since 1986” ([www.cbmt.org](http://www.cbmt.org), p. 1). In order to be recertified as an MT-BC, music therapists are required to gain at least 100 hours of credits at the end of each 5-year cycle or re-take and pass the board certification exam at the end of the 4th year of the 5-year cycle. (The option to re-take the exam is available until 1/1/17. At that point, the credit option will be the only available re-certification option.) The CBMT provides oversight for new certifications (administering the exam) and re-certifications, reviewing and auditing professional development credits for the MT-
BC. Those who choose the CMTE credit option for re-accreditation must gain 100 hours credits over 5 years in the following categories of clinical practice: Continuing Music Therapy Education (CMTE) Credits, Professional Development Credits, and Professional Service Credits. The credits earned must address the most current CBMT certification domains, which was recently updated in April 2015. Currently there are 6,756 music therapists who are “maintaining the MT-BC credential” (www.cbmt.org retrieved May 16, 2016).

**CBMT domains.** The CBMT board certification domains reflect current music therapy practice analysis study that is conducted every 5 years. The domains reflect current practice in music therapy and are the source of information for questions developed for the CBMT board certification exam and for clinical practice areas covered in re-certification categories. The primary domains of current music therapy clinical practice include: (a) referral, assessment, and treatment planning; (b) treatment implementation and termination; (c) ongoing documentation and evaluation of treatment; and (d) Professional development and responsibilities. There are 103 items throughout all areas with sub-categories where applicable (CBMT, 2015a)

**CMTE credits.** The first of the re-certification categories are Continuing Music Therapy Education (CMTE) credits. Up to 100 CMTE credits can be earned toward recertification with at least 3 of the credits required to be in the domain sub-category area of Ethics. The Ethics credit requirement may not be met in either of the other two categories of professional development or professional services.
Activities that can count toward CMTE credits include graduate coursework, educational courses, self-study courses, short events, and music therapy conference credits (CBMT, 2015a).

**Professional development credits.** Professional development (PD) credits, the second category of re-certification, can count up to 80 credits per 5-year cycle. The options of PD include submitting publications and presentations/program development. Publications can include a monograph or scholarly book, a thesis or dissertation, a chapter of a book, publication in a refereed journal, grant, book review published in a refereed journal, or original music composition. Presentations and program development include developing an AMTA-approved/university educational program, a proposal for a national roster internship, developing a university-affiliated clinical training program, or developing a professional workshop or course of study (CBMT, 2015a)

**Professional service credits.** The third area of re-certification credits, professional service, can count up to 20 credits per 5-year cycle can be submitted in the service category. Professional service experiences include service to music therapy organizations including providing supervision for students in internship and pre-internship clinical experiences. Service could also be counted toward involvement in external organizations such as non-music therapy governing advisory boards (CBMT, 2015a).

**Readings.** The types of sources in readings in music therapy and non-music therapy literature include refereed journals, academic and current texts;
professional website blogs; media such as news, television, popular press; or professional associations’ newsletters. The professions of music therapy have a rich history of research and publication about their clinical practices. Brooks (2003) presented a review of design types of studies from 9 different music therapy journals published in English from 1964 – 2001. Article types ranged from quantitative, qualitative, clinical, historical, philosophical/theoretical, and professional. For purposes of this study, readings were classified as Theory/Research Readings which were considered peer-reviewed and based in theory and rigorous research design. Non-theory/non-research readings were considered clinically-based readings and any other type of popular press; such as professional websites and blogs and media such as news, television, popular press; and professional associations’ newsletters.

**Music Therapy journals.** Currently in the United States, there are two primary music therapy journals, the Journal of Music Therapy (JMT) and Music Therapy Perspectives (MTP) both published on behalf of the AMTA through Oxford University Press. JMT, has issues that span 1964-2016 and MTP through 1982-2016 (Oxford University Press, 2016a,b). Both journals are peer-reviewed however the JMT publishes all forms of research articles (Oxford University Press, 2016a) and the MTP is considered clinically-based as it published articles that are geared toward improving music therapy clinical practice including “clinically-focused research reports, innovative developments, case studies, educational research, and theoretical articles” (Oxford University Press, 2016b, para. 2). Members of the
AMTA have free access to both these journals. Otherwise, there are yearly subscriptions to the journals available for purchase.

The JMT is highly selective and publishes about 30% of submitted manuscripts. Designs of studies in the JMT range from “qualitative, quantitative, and mixed methodologies; historical, descriptive, philosophical, or experimental designs; and integrative reviews, meta-analysis or meta-synthesis” (AMTA, 2016, para. 1). Single-case design studies are not typically accepted in the JMT unless the evidence adds something unique to the Music Therapy knowledge-base. MTP in contrast “publishes all forms of reports that have implications for music therapy practice including clinically-focused research reports, innovative developments, case studies, educational research, and theoretical articles” (AMTA, 2016, para. 1).

Music Therapy textbooks. Music therapy academic texts range in topic from a general overview of the music therapy profession to very specific books on music-based techniques and theories in music therapy. No one has yet reviewed the historical trends of music therapy texts however the earliest text reported as used in an academic class was titled, “Music in Therapy” by Gaston (1968). Now, there are many texts, hundreds, available for use by professors, students, and clinicians. Popular publishers who produce music therapy texts only include the AMTA (musictherapy.org) and Barcelona Publishers (https://www.barcelonapublishers.com/).
Summary

The AMTA defines evidence as “outcomes of efficacy or effectiveness studies” (AMTA, 2015, para. 4). Music therapy researchers and clinicians argue for and against this adopted definition as well as the addition of applying Evidence Based Music Therapy Practice (EBMTP) in the music therapy clinical setting to their Scope of Music Therapy Practice (Abrams, 2010; Aldridge, 2003; Edwards, 2004; Edwards, 2005; Hahn, 2013; Kern, 2010; Pavlicevic et al., 2009; Vink & Bruinsma, 2003; Waldon, 2015). EBMTP requires that music therapists have skill in accessing the research evidence, discerning good evidence from bad, and effectively applying this knowledge in a clinical setting, keeping in mind their own music expertise and the needs, values and preference of their clients (AMTA, 2015). Critics argue that the evidence for the diverse populations in music therapy is not in the research evidence but in knowledge gained from recognizing the immediate needs of the clients and observing their interactions with the music (Abrams, 2010; Aldridge, 2003; Edwards, 2004). If music therapists must apply EBMTP and continue to respond to the needs of the clients, they must make decisions based on their knowledge of the most appropriate music interventions for their clients’ needs whether there is research evidence available or not.

While music therapists have positive attitudes toward EBMTP (Hahn, 2013), the ability to utilize the evidence in daily clinical practice presents with barriers primarily of access and utilization (Waldon, 2014). Other healthcare professionals in medicine, psychology, and nursing, also struggle with barriers of knowledge of
evidence, access to the evidence, and research utilization in their clinical practice (Funk et al., 1991b; Majid et al., 2011; Sadeghi-Bazargani et al., 2014; Wolfe, 1999). The nursing profession has identified SoK that inform nursing clinical practice (Estabrooks et al., 2005; Rycroft-Malone et al., 2004) and identified demographic factors that impact which sources are used to inform their clinical practices (Dalheim et al., 2012; Estabrooks et al., 2005; Paans et al., 2012).

Drawing from current SoK literature in nursing as well as knowledge from the standards and Scope of Practice of music therapists, the researcher identified SoK for music therapists and created question items related to each source. A questionnaire (see Appendices B and C), developed by the researcher was subjected to scale development and pilot procedures. A study questionnaire (see Appendix E) was then distributed to a random sample of MT-BC clinicians.
Chapter 3: Methods

The purpose of this study was to describe how often a random sample of currently practicing board-certified music therapists chose various Sources of Knowledge (SoK) to inform their music intervention choices. Further, responses to the Theory and Research Readings (TRR) Source of Knowledge were compared across music therapists’ demographic groups. The researcher-developed questionnaire used for the study underwent pilot testing procedures and item analyses prior to the study. Once the data were collected in the study, the questionnaire was then sent to the sample again to collect post-study non-respondent data for descriptive comparison to the study participants’ responses. The researcher performed item analyses on the study data to determine how well the questionnaire measured currently practicing music therapists’ use Sources of Knowledge (SoK). Refer to Chapter 4, Scale Development, for details on procedures and results of the third research question regarding the pilot testing and item analyses of the questionnaire.

Sources of Knowledge Questionnaire

The final SoK questionnaire used for the study consisted of a cover page describing the study to the participants. The questionnaire consisted of 52 questions, 35 related to Sources of Knowledge and 16 were demographic questions. The first question was a screening question and asked respondents if they were currently working as a board certified music therapist. If answered no, the respondent was redirected to the end of the survey.
For each SoK, the researcher provided a brief definition of the source prior to the set of scale items. Respondents were asked to rate how often they use a certain SoK as never, seldom, sometimes, frequently, or always. The SoK scales included Academic and Clinical Training, Clinical Practice, Supervision, Social Situations, Professional Development, Theory/Research Reading, and Non-Theory/Non-Research Readings. Respondents were also asked to rate their perception of their own music skill ability on their primary instrument either as a beginner/novice, adequate, competent, good, or an expert.

Demographic questions on the questionnaire were the following: gender, age, primary work setting, years practicing as a music therapist, year received MT-BC, AMTA region of current residence, status of AMTA membership, highest level of education Music Therapy, highest level of education not Music Therapy, client age group (if the respondent worked with 1 age group), client age groups (if the respondent worked with 2 or more client age groups), population setting, philosophical orientation, current professional credentials/designations, and any additional credential/designations, primary music instrument, and perceived music ability. A comments section was provided at the end of the questionnaire soliciting feedback about the questionnaire.

**Sampling Procedures**

The Certification Board of Music Therapists (CBMT) manages the certification MT-BC, which includes administering the board certification exam and keeping track of continuing education credits and certification for all certificates.
CBMT allows for members and students to access their email list of certificates upon request, approval, and for a fee (CBMT, 2016). The researcher requested a list of all people who hold a current MT-BC designation, $N = 6,355$. Using a randomization function on Microsoft Excel Version 14.6.4, the researcher then randomly selected 2,000 emails from the population (Messer & Dillman, 2011).

**Data Collection**

The random sample of potential participants was sent an email with a description of the study and link to the questionnaire (see Appendix E). Since it was possible that pilot participants could also receive the link, they were asked through a separate email not to complete the questionnaire if they received it. Reminder emails were sent to the entire random sample at 2 and 5 weeks after the initial email based on Dillman et al. (2014). The entire sample received the emails at each reminder because the researcher used an email program instead of the email function on Qualtrics. The researcher did however blind copy participants for each email. The researcher collected data and monitored the study via Qualtrics. The initial email yielded 119 responses on the first two days totaling 153 before the first reminder email. The first reminder yielded 127 responses over the next 3 days totaling 154 before the second reminder email. The final reminder email yielded 50 responses over the next two days with totaling 65 responses before the researcher closed the questionnaire, with a total of 373 respondents. Once the study closed at the beginning of week 6, all data were transferred to IBM SPSS to begin data screening and analysis. Three weeks following the final email to the random sample,
a 4th request was sent to the sample with the purpose of collecting non-
respondent data and comparing it to the study data. The follow-up email yielded 27 responses 1 day after and a total of 47 responses over several weeks. The data from Qualtrics were then exported to Microsoft Excel and IBM SPSS programs.

**Data Screening**

Once the data were uploaded to IBM SPSS, the researcher screened the data based on the procedures outlined in Meyers, Gamst, and Guarino (2013). This included checking for accuracy of the data. For example, one respondent indicated *other* for current designation and wrote *ACMT* which was one of the choices of the question. The researcher changed the respondent’s answer by selecting *ACMT* as the answer to the question. In addition, the researcher performed the following procedures: created ID variable, set up multiple response variables for questions 48b, 51, and 52 and recoded 7 variables from 1,2,3... to 0, 1, 2... (gender, age, years in practice, year obtaining MT-BC, AMTA member, highest education MT, and highest education non-MT) for consistency.

**Scale Item-Completion Screening**

An average scale score using the mean.# function in IBM SPSS was calculated in for each of the seven scales: Academic and Clinical Training (ACT), Clinical Experiences (C), Supervision (S), Social Situations (SS), Professional Development (PD), Theory/Research Readings (TRR), and Non-Theory and Non-Research Readings (nTnRR). The number (#) computed was determined based on how many items there were in each scale that, if completed, would represent at least 70% of
the items answered. For each scale, if the respondents did not meet the 70%, the mean of their item responses was not calculated and the response was reported as missing. If a respondent did not complete at least 70% of at least one scale, their case was deleted.

**Data Analysis**

The sample descriptive data was reported, including valid and missing cases, frequency of responses, and for scale data, the mean, standard error of the mean, standard deviation, variance, skewness, and kurtosis. For research question 1, to observe what demographics of currently practicing Board Certified Music Therapists use each SoK when determining what music-based intervention they will use in music therapy clinical practice, the researcher used the explore function on IBM SPSS to compare groups of the demographic variables with each SoK scale. Data reported included the mean for each group in the demographic, the variance, standard deviation, skewness and kurtosis as well as the standard error of the mean, skewness, and kurtosis. Ranked scale and item mean data were also be reported.

For research question 2, in order to observe whether there was equality or inequality of the means in how often the Theory/Research Reading (TRR) SoK was used for certain demographic groups (years in practice, highest MT education, population facility, and AMTA membership), the researcher ran a one-way between-subjects ANOVA statistical test comparing the mean responses of the TRR source between each group of each demographic variable. The null hypothesis states that
there will be no significant difference between the means of the groups. If there was a significant difference in any one of the groups, the researcher would have rejected the null hypothesis. Before running the one-way ANOVA, the researcher made sure the assumptions of the data of normality and homogeneity of variances were tested. Also, based on a medium effect size, Cohen’s $F$ with 5 groups, the researcher needed to have a minimum of 39 participants per group to reach a power level of 0.8 (Warner, 2008).

The researcher then checked how well the data were distributed with and without outliers for each TRR and demographic variable group. Using the Shapiro-Wilk test for normality, the null hypothesis states that the data represent a normal distribution. If the test showed significance at alpha .05 level, the researcher rejected the null, indicating that the data were not normally distributed in the population. The researcher then checked to make sure the shape of the data fell within a 95% confidence interval of each of the skewness and kurtosis statistics.

The next assumption to be tested before running the one-way ANOVA was that of homogeneity of variance. This assumes that the data of 2 or more groups from a population equally vary from the mean. The most common test for homogeneity of variance is Levene’s test (Warner, 2008). If Levene’s test indicated significance at the .05 level, the groups have significantly different variances which violated the assumption. At this point the Welch test, which is a more robust test of the one-way ANOVA is run instead of the ANOVA. If, however, the Levene’s test indicated no significance at the .05 alpha level, the researcher ran the standard
omnibus $F$ test one-way ANOVA. If the $F$ test statistic indicated significance, the researcher would then run the Tukey post hoc test which would indicate whether there is any significance difference between the mean of each group as compared to the means of the remaining groups. All results for research questions 1 and 2 are reported in Chapter 5. Research question 3 results, those related to scale development, are reported in Chapter 4.

**Non-Respondent Data Procedures**

Following data collection and analyses of study data, three weeks later, a blind-copied email with the link to the SoK Questionnaire (see Appendix H) was sent to the sample in order to solicit non-respondent data. Because this was sent after the study, the respondents are referred to as non-respondents. Procedures performed with the non-respondent data included descriptive analyses. The frequency of responses and descriptive statistic results were then compared to the study data frequencies and descriptive statistics.
Chapter 4: Scale Development

Scale development procedures included identifying and defining the latent constructs being measured, generating items, determining how the items would be measured, determining demographic items, eliciting expert review, and distributing the pilot questionnaire to a relevant convenience sample (DeVellis, 2012). Data from the pilot were then analyzed for reliability of the items in each scale. The wording of items were adjusted and Sources of Knowledge (SoK) scale items were determined and grouped based on feedback from the pilot participants and item analyses results. The study questionnaire was then distributed to a random sample of music therapists. After study data collection, item data were tested for reliability comparing Cronbach’s Alpha if-item-deleted statistics and using Exploratory Factor Analyses procedures (Warner, 2008).

Latent Constructs Identified

A latent construct is another name for a latent variable, a variable that we want to analyze but is not directly observable. According to Netemeyer, Bearden, & Sharma (2003) latent constructs are “attributes of objects that tend to be abstract” (p. 4). These are centralized themes that are based in a strong theoretical framework that emerge from data collected from a group of questions or items, in this case, in a questionnaire. When developing the questionnaire for the current study, there were several latent constructs that the researcher predicted would emerge in the music therapy participant responses. The latent constructs were labeled as Sources of Knowledge (SoK). Based on the review of literature and the
knowledge gained about music therapists’ training and current clinical practices, the researcher identified the following SoK for the pilot: Clinical Training Experiences, Current Clinical Experiences, Information from Other Professionals, Social Situations, Professional Development/Conference Sessions, Research Publications, Non-Research Publications. In order to observe if the respondents’ perceived music skill on their primary music instrument during clinical work had any impact on the SoK chosen, a latent construct, Music Skill Level, was also identified.

**Sources of Knowledge Scale Items Generated**

The next stage in scale development was to create the items for each potential SoK and Music Skill Level. Items were created based on examples of previous scales used by other professions that addressed similar sources (Dalheim et al., 2012; Estabrooks, 1998; Gerrish et al., 2007; Majid et al., 2011), on knowledge of music therapy clinical practice (AMTA, 2015b; AMTA, 2015c; AMTA, 2015d; AMTA, 2014; AMTA & CBMT, 2015), knowledge of recertification requirements of music therapists (CBMT, 2015a) and knowledge of working environments and supervision by professionals (AMTA, 2015a; Forinash, 2001). The researcher also considered the view point of the participant and what would be easy to understand when writing the items (Tourangeau, Rips, & Rasinski, 2000). The researcher ensured there were at least three items for each scale, avoided manipulative positive or negative language, and looked for signs of bad items and corrected those that were too lengthy, too high of reading level, provided two or more ideas, had
grammatical errors, and had double negatives within the items (DeVellis, 2012, pp. 76-85).

**Clinical training, clinical experiences, and information from professionals.** Clinical training experiences for music therapists were defined to include academic and clinical training. Academic training included music therapy and non-music therapy academic classes and clinical training included pre-internship and internship experiences (AMTA, 2014). Current Clinical Experiences were defined as those that have occurred after clinical training was complete, post internship. These experiences included prior music therapy sessions conducted by the therapist, current or recent clinical experiences conducted by the therapist, and clinical experiences observed by the music therapists in prior music therapy sessions (AMTA & CBMT, 2015). The Information From Professionals source defined professionals as those who served in a supervisory role (music therapy or non-music therapy) to the music therapist or those who served in a non-supervisory role but were a music therapist (Forinash, 2001).

**Social experiences and professional development.** Social Experiences were defined as any experiences that were designed primarily for social interactions of the participants. For music therapy professionals, this can be social media (e.g., Facebook, Twitter, etc.), social gatherings at a music therapy or non-music therapy conference, or social media group chats or blogs (Bates, 2015). Professional development experiences, in contrast, were defined as a wide variety of activities that bring professionals together for the specific purpose of disseminating
knowledge to help maintain and improve clinical practice. For music therapy professionals, the venues could be music therapy or non-music therapy conferences, on-the-jobsite professional development, off-jobsite professional development not at a conference, and online professional development courses. The items for the pilot included specific types of Continuing Music Therapy Education courses (CMTEs) since all music therapists are required to gain hours of credit toward their recertification of MT-BC (CBMT, 2015a).

**Research and non-research publications.** The final two SoK included in the pilot were Research and Non-Research Publications. Research Publications were defined as peer-reviewed and non-peer-reviewed articles in music therapy and non-music therapy journals (Wheeler & Murphy, 2016). An item regarding conducting the clinician's own clinical research was used in this the Research Publication source for the pilot (Waldon, 2015). Non-research publications included non-social media sources on the Internet such as websites; non social media sources such as news, television, and popular press articles; and professional association newsletters, theoretical music therapy and non-music therapy texts. Since the researcher was asking about use, the sentence stem of “I use music interventions that I....” was kept consistent throughout the pilot questionnaire as suggested by Netemeyer, Bearden, and Sharma (2003). A level of frequency, Item Time-Frame response (DeVellis, 2012) 5-point rating scale measurement, allowed participants to select (1) never, (2) seldom, (3) sometimes, (4) most of the time, or (5) always (see Appendix B).
Demographic Items Defined

According to the CBMT, there are currently 6,857 people who hold a certification of MT-BC. CBMT does not publish any other demographic statistics and this information is not easily accessible. However, the following descriptions of population demographics are cited from the most recent workforce analysis survey conducted by AMTA in 2015 (AMTA, 2015a). The survey was sent to over 10,000 potential participants from the music therapy community, nationally and internationally. Participants included student members, AMTA members, past AMTA members, potential AMTA members, and other AMTA supporters. Approximately 15% of the total invitations sent responded ($n = 1,562$). Of the respondents, 81.3% were currently practicing music therapists. It is important to recognize that the data that follows describes the sample of respondents who completed the AMTA workforce survey in 2015 and does not represent a representative sample of the MT-BC population.

**Gender and age.** Of the respondents to the 2015 workforce survey, 87.6% were female, 11.8% male with less than 2% identifying as transgender or other. Ages of respondents ranged from under aged 20 to ages 70 and over. The highest percentage of respondents were ages 20-29, (38.8%) followed by ages 30-39 (24.3%), 40-49 (15.0%), 50-59 (11.9%), 60-69 (7.8%) and 70 & over (1.5%) respectively. For the questionnaire, gender choices included Male, Female and Other.
**Highest level of education.** Respondents reported that 6% had completed doctorate degrees, 40% completed master’s degrees, 49% completed bachelor’s degrees, and 5% had no college degrees. Types of master’s degrees were varied with the most with a Master of Arts (35.49%) followed by the Master of Music (26.72%). Doctorate degrees included the majority with the Doctorate of Philosophy (84%). Other doctorate degrees included the Doctorate of Arts, Doctorate of Music Arts, Doctorate of Education, Medical Doctorate, and the Psychology Doctorate.

**Work setting and populations served.** Respondents reported working at 45 different types of work settings and with diverse client populations. The largest categories of work settings were in geriatric facilities (15%) followed by medical settings (14%), mental health settings (12%), self employed & private practice (12%), and children’s facilities/schools (11%) respectively. Regarding client populations, “the largest populations served by AMTA members are in mental health (19%) followed by developmental disabilities (14%), medical/surgical (13%), elderly populations (10%), and those with neurologic disorders (7%)” (AMTA, 2015a, p. 15). Ages reported served seem to be evenly distributed except for prenatal: seniors (16%), mature adults (15%), adults (14%), young adults (14%), teens (14%), pre-teens (13%), infant/children (13%), and prenatal (1%).

**AMTA membership and regions.** As of October, 2015, there were 3,841 members of AMTA. Of the respondents, 45.4% were professional MT-BCs, followed by undergraduate students 27.3% and graduate students 12.2%. International
members of AMTA (4%) represented over 30 countries outside of the United States. There were no numbers reported by region but by state. The most reported were New York (Mid Atlantic region), 303 music therapists followed by California (Western region), 268 music therapists; Texas (Southwest region) 248 music therapists; Pennsylvania (Mid Atlantic region), 231 music therapists, and Ohio (Great Lakes region), 197 music therapists. There are currently a total of 7 regions in the AMTA in the United States (AMTA, 2015a).

**Years practicing and year received initial MT degree.** It is possible that someone could have been in practice as a music therapist since 1950, therefore options for years in practice for 0-41 or more years were listed on the SoK questionnaire (see Appendix B). The respondents were also asked to provide what year they received their MT-BC certification. This data, though similar to the years practicing question provides more specific data that can be analyzed using scale statistical analysis procedures. The researcher could not find any recent statistics in the literature on the population of music therapists regarding years practice and the year they received their MT-BC certification.

**Music Therapy credentials and designations.** Since the credential of MT-BC did not come into existence until 1998, there are other credentials besides the MT-BC that a music therapist may hold. A Registered Music Therapist (RMT) may have gained this credential under the former NAMT national association established in 1950. A Certified Music Therapist (CMT) is someone who received their training from an AAMT school prior to unification of the NAMT and AAMT in 1998 (Davis et
An Advanced Certified Music Therapist (ACMT) is someone who holds a credential through the National Registry for Music Therapy. While the RMT, CMT, and ACMT are no longer being offered for new applicants some still hold these credentials (CBMT, 2016).

Other designations or credentials available for music therapists include the FAMI, NICU-MT, NMT, HPMT, and NRMT. The FAMI stands for a Fellow in the Association of Music and Imagery. This designee has undergone training for Guided Imagery in Music (GIM) in psychiatric treatment. A Neonatal Intensive Care Unit – Music Therapist has undergone training to be able to administer music therapy for infants and their caregivers in the NICU. An NMT, Neurologic Music Therapist, has received training in how to administer specific NMT techniques when working with clients in music therapy. Hospice and Palliative Care Music Therapists have received extensive training on how to use specific music therapy treatment techniques with the hospice and palliative care patients. Therapists with Nordoff-Robbins Music Therapy designation (NRMT) have extensive training on how to deliver techniques developed for clients with developmental disabilities by Paul Nordoff and Clive Robbins (Davis et al., 2013). The researcher could not find any recent statistics on the population of music therapists regarding credentials and designations.

**Philosophical approaches.** As discussed in Chapter 2, music therapy practitioners can be based in a variety of philosophical orientations ranging from those in music education, behavioral, cognitive-behavioral, humanistic,
psychoanalytic and biomedical philosophical orientations. The music therapy approaches based on these orientations range on a spectrum from pure music improvisation, which is based on a psychoanalytic approach, to pure music as reward or reinforcement, a behavioral approach. This spectrum of music experiences is described below as well as some of the advanced training associated with these approaches.

**Music as therapy.** The improvisational music therapy delivery model is more in line with psychodynamic approaches or humanistic approaches. In the improvisational model, the music itself begins with the client. Using music this way sometimes referred to as Music AS Therapy. The music therapist may not know how the music intervention may unfold but is able to facilitate a safe environment with the music intervention in response to the music that the client produces. It is the music itself that promotes therapeutic change the client needs. The client creates the music and the therapist responds allowing for the music to be a safe space for healing. An improvisational example might be where a music therapist observes a clients' behaviors and reflects with music their tempo, intensity, volume, and vocalizations with the goal of engaging the client. This allows the client to connect with the therapist, establishing trust and unconditional positive regard through a pure non-verbal way, improvised music (Bruscia, 1987, 1989, 1998b). Types of advanced training include the Nordoff-Robbins Creative Music Therapy approach or the Bonny Method of Guided Imagery in Music approach. Generally, these
approaches are more improvisational in nature and allow the therapist to follow and support the client musically during music therapy sessions or imagery sessions.

**Music in therapy.** On the pure behavioral end of the spectrum of music therapeutic delivery is where the music is external to the client but then through therapist manipulation, then impacts therapeutic change in the client. As an external stimulus for example, music might be used to reinforce behaviors, reward behaviors, impact changes in thinking, or promote physical responses (e.g., behavioral, cognitive/behavioral, or medical) (Darrow, 2008). In Neurologic Music Therapy (NMT) for example, there is a technique referred to as Rhythmic Auditory Stimulation where the music therapist assigns a certain tempo to help a person regain a steady walking pace or work on speech. The tempo is a behavioral cue for the brain to make the next step or help rebuild neurologic speech pathways (Thaut, 2005). The music therapist who operates on the medical or behavioral model may not have an advanced designation but may see music as an external reward or reinforcer. The music intervention is pre-planned and presented in a way to elicit certain behavioral responses in the client.

**Perceived music ability.** The Perceived Music Ability (PMA) items on the questionnaire were adapted from the AMTA Professional Competencies (AMTA, 2015c). The participants were first asked to identify their primary music instrument used most often in music therapy clinical practice: keyboard, guitar, voice, ukulele, drum or drums, autoharp, or the qchord/omnichord. The participants were then asked to rate their expertise on a 5-point rating scale (Netemeyer et al., 2003) either
as a (a) beginner/novice, (b) adequate, (c) good, (d) competent, or an (e) expert when demonstrating five different music skills. The music skills, taken directly from the AMTA music therapy professional competencies (AMTA, 2015c), were skills of leading, accompanying, sight-reading, transposing, and harmonizing on their primary instrument used in music therapy clinical practice.

The AMTA Professional Competencies and the academic and clinical training of a music therapist require depth of music-based competence (AMTA, 2015c). Music therapists are also required to maintain and improve music skills as they continue practicing as a music therapist (AMTA & CBMT, 2015). Does music expertise perception impact use of Sources of Knowledge? There has not been much research on music skills. Although not all the music skill expertise preference items were included in the final study, the relationship to Sources of Knowledge use was the original rationale for creating items for the music skills perception latent construct for the pilot (see Appendix B).

**Demographics Items Generated**

The demographic items chosen for this questionnaire were adapted from a few recent survey research articles in music therapy (Alton, 2015; Hahn, 2013; Waldon, 2015). There were 13 questions regarding demographic information for the pilot. They included gender, age, years practicing, year received initial MT degree, AMTA region, AMTA member, highest level of education, population age group, work setting, music therapy philosophical orientation, current music therapy credentials, additional credentials or designations, and primary music instrument
used in music therapy clinical practice. The intent was that by asking for a breadth of descriptive information about the sample, this information would provide a general picture of the state over various different demographic groups.

**Expert Review**

Once the initial questionnaire was developed, the researcher then asked six expert music therapist researchers and academic professors to provide feedback regarding content validity about the questionnaire (Netemeyer et al., 2003). The reviewers were selected based on their experience with reviewing questionnaires, one of whom had recently created a music therapy research barriers scale. Of the six asked, three professional reviewers provided feedback regarding the questionnaire. The pilot professional reviewer questionnaire (see Appendix B) was sent as a Microsoft Word (Version 14.6.4) document file via email to each professional reviewer so each reviewer could add comments or make adjustments via tracked changes if needed.

**Questionnaire for expert review.** The questionnaire developed for the expert review consisted of 54 questions, 40 items related to SoK and 14 demographic questions. The first question was a screening question, asking the respondent if they were currently working as a music therapist. The SoK with number of items in each source included the following: Clinical Training Experiences (4 items), Current Clinical Experiences (3 items), Other Professionals (3 items), Social Situations (7 items), Professional Development/Conference Sessions (10 items), Research Publications (3 items), Non-Research Publications (5 items),
and Music Skills Ability Perception (5 items). Questions related to how often the respondents used SoK were rated never, seldom, sometimes, frequently, or always. The music skill ability perception items were rated as beginner/novice, adequate, good, competent, and expert. A comment section was provided at the end of each SoK section, after the primary instrument question, and at the end of the questionnaire following the demographics section (see Appendix B).

**Expert review feedback.** The reviewers were asked to provide feedback regarding if the items were matched appropriately with each of the scale descriptors, if any items were missing, and what items if any were not necessary. The reviewers were also asked to provide feedback regarding understandability of the questions, and if there were any errors such as typographical errors. Once the researcher collected all the comments via email from the expert professional reviewers, she reviewed each point made and incorporated changes into the pilot questionnaire (Netemeyer et al., 2003) (see Appendix D).

The expert reviewers made suggestions related to clarity of wording and needed additions in the demographic groups. Generally, all three expert reviewers wanted better explanation and definition of terms for music intervention and each SoK. All three commented on the difficulty of the music expertise items to understand and answer. Based on the feedback, the following changes were made to the questionnaire before distributing to the sample.
Scale Changes on Questionnaire

Definitions of terms and description of the groups of scale items were provided for each scale. The first question was changed from “...as a board certified music therapist” to “... in clinical practice as a board certified music therapist.” All items were reworded from “I use treatment interventions” to “I use music interventions.” A Supervision SoK scale with two items replaced the Other Professionals source. An item in the Other Professionals source was deleted because the professional reviewers did not see talking with a non-music therapy supervisor a SoK. Observing a non-music therapy supervisor was however plausible and therefore kept in the supervision SoK scale. The word Academic was added to Clinical Training to the title of that SoK. Clinical Practice replaced the Current Clinical title. Examples were provided when needed for items (e.g., types of professional group chats, etc.).

The Research Publications and Non-Research Publications were renamed Theory/Research Readings and Non-Theory/Non-Research Readings to more accurately reflect the items. The item regarding conducting clinical research was removed because it was not a reading source but part of clinical experience. It was not added to clinical experience based on feedback from the professional reviewers that the respondent may have trouble separating clinical work with clinical research when answering the questions. The item for peer review non-research journals was added to the Non-Theory/ Non-Research Readings source. Before making any changes to the music skill ability perception scale, the researcher kept the items in
the pilot questionnaire in order to allow the pilot sample to comment if needed (see Appendix D).

**Demographics Changes on Questionnaire**

The following demographic items were changed on the pilot questionnaire based on feedback from the professional reviewers. *Primary work setting* was added as a new question. The words *or drums* were added to *drum* for the primary instrument question. *Years practicing* expanded to include 41-50 and then *51 or more* instead of *41 or more*. The item *current region outside of the US* was reworded to *I do not reside in an AMTA region*. The educational levels were divided into two demographic questions, *music therapy education* and *non-music therapy education*. An item was added to *non-music therapy education* to include *I do not have any other degrees besides those in Music Therapy*. A demographic grouping was added *I work with 2 or more age groups* where respondents could pick multiple answers. The choice *eclectic* was added to the *Philosophical Orientation* demographic. The term *psychodynamic* replaced *psychoanalytic* to encompass better that the analytic approach. The credentials, *LCAT, LMHC, and NMT Fellow* were added the *any additional current of former credential/designations* demographic.

**Pilot Study**

The purpose of the pilot study was to gain validity and reliability information in order to continue to develop the scale before distributing to larger sample. The procedures included “item-trimming (or adding if needed), initial item analysis
through internal consistency estimates, and retaining items for the study” (Netemeyer et al., 2003, p. 15).

**Pilot study sampling.** The researcher selected a purposeful sample of 60 music therapists, whom she understood to be currently practicing in music therapy, and requested that they participate in the pilot. The music therapists were chosen from a list of professional emails in the researcher’s personal address book. The researcher knew all of the music therapists as colleagues but did not work with any of them professionally, except in possible past service activities through AMTA.

**Pilot study questionnaire.** The questionnaire consisted of 57 questions, 1 screening question, 15 demographic questions, and 41 questions related to the SoK. There were 7 SoK scales for the pilot: Academic and Clinical Training (4 items), Clinical Practice (3 items), Supervision (2 items), Social Situations (7 items), Professional Development (10 items), Theory and Research Readings (4 items), non-Theory and non-Research Readings (4 items) (see Appendix D).

**Pilot data collection.** The researcher sent an email (see Appendix C) describing the study and the request for participation in the pilot, with a link to the pilot questionnaire (see Appendix D). Data was collected using Qualtrics. The data were collected over a three-week period with one reminder email sent about halfway through the three-week time period (Dillman, Smyth, & Christian, 2014). The data from Qualtrics (Version 360) were then exported to Microsoft Excel Version 14.6.4 and IBM SPSS Version 22 programs.
Forty-nine of the 60 music therapists emailed accessed the questionnaire. Of those, 37 responded that they were currently practicing music therapists, 7 of whom did not answer any questions beyond the screening question in which they identified that they were currently working as a music therapist. Therefore, the researcher deleted a total of 19 cases, 12 cases who indicated not currently practicing and 7 cases who did not complete the questionnaire past the first question, leaving the total pilot respondents at 30, a 50% response rate. Since the pilot met the 30-participant-minimum, (Johanson & Brooks, 2010), it was determined to move forward with analyzing the data.

**Pilot sample description.** The following data are reported for the pilot sample \((n = 30)\). Self-reported respondent descriptions included are the following: gender, age, years practicing as a music therapist, years since received MT-BC, primary work setting, highest level of education Music Therapy, highest level of education not Music Therapy, current AMTA region of residence, current status of AMTA membership, population setting, client age (if 1 age group) and client age (if 2 or more age groups), philosophical orientation, current professional credentials/designations, any additional former or current credential/designations, and primary music instrument in clinical work.

**Gender and age.** Of the total 30 respondents 4 (13.3%) were male and 26 (86.7%) female. Their majority of the respondents 66.6% were in the age range of 22-40 with 33.3% ages 41-63. The is similar to the AMTA (2015) workforce data male (11.8%) and female (87.6%).
**Credentials, designations, and time practicing.** All 30 respondents reported having a credential of MT-BC, with 13 of them reporting other designations respectively NMT (10), HPMT (1), and LCAT (2). Most of the respondents had been practicing in music therapy for 0-5 years (43.3%) with the next highest years in practice at 11-20 years (30%). The longest that one respondent reported she had been practicing as a music therapist was in the range 31-40 years. Of the total 29 respondents, the years since receiving the MT-BC credential ranged from 1989-2015 with 34.5% within the past five years, 2010-2015.

**Education.** The levels of education reported by the sample were 24 (80%) undergraduate/bachelor and 6 (20%) master's degree. Also, 11 (37.9%) of the respondents had undergraduate degrees in other degrees besides music therapy. One respondent had a master’s degree in another discipline. Seventeen (58%) of the respondents had no other degrees besides music therapy.

**Philosophical orientation.** The majority of respondents \((n = 12, 40\%)\), selected *Humanistic/Psychodynamic* as their primary philosophical orientation. It was suggested by a reviewer that these areas be separated. Placing the two philosophical orientations together as one choice was a typographical error by the researcher, therefore for the SoK study, these two philosophical orientation choices were separated. The remaining respondents in the pilot reported their philosophical orientations as follows: Eclectic (20%), Cognitive–Behavioral (13.3%), Behavioral (3.3%), None (13.3%), and Other (10%). *Other* responses included bio-psychosocial, feminist, and behavioral-humanistic.
**Primary music instrument.** The most used primary music instruments in clinical work were the guitar (28.6%) and voice (24.5%), respectively. Two respondents indicated keyboard as their primary with drum or drums and auto harp at one respondent each.

**Work setting.** The most prevalent work setting was salaried employee at 70% with private practice at 20%. There was an other category but not a place for someone to fill in what other was. This was corrected after the pilot for the study. Suggested comments included adding private practice and within a facility, hourly employee, and for a company or facility as an hourly employee. Additional selections to encompass several different types of work settings were added after the pilot for the study.

**Current population work setting.** Current work setting had a wide range of populations served responses (see Table 1) with the most respondents working in a school setting (20%) and the least number of respondents working in corrections, university/college clinic, community-based clinic, and community contracting.
Table 1

Current Work Setting

<table>
<thead>
<tr>
<th>Population/Facility</th>
<th>Frequency</th>
<th>Valid %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrections</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>School Setting</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Hospice</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Medical</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Private Practice</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>University/College Clinic</td>
<td>1</td>
<td>3.3</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>6.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

*Ages served.* The ages served by the sample also ranged across age groups with Children (4-7 years) being the majority at 30% of respondents followed by Mature Adults (50-64) at 16.7% and Seniors (65+) at 16.7% (see Table 2).

Table 2

Current Population Age

<table>
<thead>
<tr>
<th>Population Age</th>
<th>Frequency</th>
<th>%</th>
<th>Valid %</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants/Young Children (birth-3 years)</td>
<td>1</td>
<td>2.0</td>
<td>3.3</td>
<td>3.3</td>
</tr>
<tr>
<td>Children (4-7 years)</td>
<td>9</td>
<td>18.4</td>
<td>30.0</td>
<td>33.3</td>
</tr>
<tr>
<td>Pre-teens (8-12 years)</td>
<td>3</td>
<td>6.1</td>
<td>10.0</td>
<td>43.3</td>
</tr>
<tr>
<td>Teens (13-19 years)</td>
<td>1</td>
<td>2.0</td>
<td>3.3</td>
<td>46.7</td>
</tr>
<tr>
<td>Young Adults (20-29 years)</td>
<td>3</td>
<td>6.1</td>
<td>10.0</td>
<td>56.7</td>
</tr>
<tr>
<td>Adults (30-49 years)</td>
<td>3</td>
<td>6.1</td>
<td>10.0</td>
<td>66.7</td>
</tr>
<tr>
<td>Mature Adults (50-64 years)</td>
<td>5</td>
<td>10.2</td>
<td>16.7</td>
<td>83.3</td>
</tr>
<tr>
<td>Seniors (65 + years)</td>
<td>5</td>
<td>10.2</td>
<td>16.7</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>30</strong></td>
<td><strong>61.2</strong></td>
<td><strong>100.0</strong></td>
<td></td>
</tr>
</tbody>
</table>

*AMTA statistics.* Of the 30 respondents, 19 (63.3%) of them were current AMTA members and 11 (36.7%) were not. Most of them, (*n* = 26, 86.7%), resided in
the AMTA Great Lakes Region of the United States, with the others residing in the Southwestern region, \((n = 2, 6.7\%)\), Western, \((n = 1, 3.3\%)\), and Mid-Atlantic, \((n = 1, 3.3\%)\), respectively.

**Sources of knowledge descriptive scale statistics.** The scale labels (see Table 3) represent the following SoK: Academic and Clinical Training (ACT), Clinical Practice (CP), Supervision (S), Social Situations (SS), Professional Development (PD), Theory/Research Readings (TRR), Non-Theory/Non-Research Readings (nTnRR). The researcher computed the average scale scores using the mean function in IBM SPSS Version 22 version for all 7 scales. All respondents completed at least 70% of all items in each scale.

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>Variance</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>30</td>
<td>2.87</td>
<td>0.10</td>
<td>0.54</td>
<td>0.29</td>
<td>-0.09</td>
<td>-0.94</td>
</tr>
<tr>
<td>CP</td>
<td>30</td>
<td>3.42</td>
<td>0.09</td>
<td>0.47</td>
<td>0.22</td>
<td>1.22</td>
<td>2.88</td>
</tr>
<tr>
<td>S</td>
<td>30</td>
<td>2.45</td>
<td>0.13</td>
<td>0.70</td>
<td>0.50</td>
<td>-0.62</td>
<td>-0.02</td>
</tr>
<tr>
<td>SS</td>
<td>30</td>
<td>1.90</td>
<td>0.10</td>
<td>0.57</td>
<td>0.32</td>
<td>0.20</td>
<td>-0.89</td>
</tr>
<tr>
<td>PD</td>
<td>30</td>
<td>2.37</td>
<td>0.09</td>
<td>0.50</td>
<td>0.24</td>
<td>0.15</td>
<td>-0.24</td>
</tr>
<tr>
<td>TRR</td>
<td>30</td>
<td>2.08</td>
<td>0.11</td>
<td>0.61</td>
<td>0.37</td>
<td>0.92</td>
<td>0.63</td>
</tr>
<tr>
<td>nTnRR</td>
<td>30</td>
<td>1.88</td>
<td>0.09</td>
<td>0.49</td>
<td>0.24</td>
<td>0.29</td>
<td>-0.45</td>
</tr>
</tbody>
</table>

Not all participants completed 100% of all of the scale items (see Table 4). Data was missing from social situations, professional development, and theory/research readings.
Table 4

<table>
<thead>
<tr>
<th>Scale</th>
<th># Items</th>
<th># Responses</th>
<th>Missing</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>4</td>
<td>30</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>CP</td>
<td>3</td>
<td>30</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>S</td>
<td>2</td>
<td>30</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>SS</td>
<td>7</td>
<td>29</td>
<td>1</td>
<td>96</td>
</tr>
<tr>
<td>PD</td>
<td>10</td>
<td>30</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>TRR</td>
<td>4</td>
<td>29</td>
<td>1</td>
<td>96</td>
</tr>
<tr>
<td>nTnRR</td>
<td>4</td>
<td>30</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

**Item reliability.** To determine if there were any particular scale items that were problematic, Cronbach’s Alpha if item deleted statistical tests of item reliability were run for each of the items for each scale. The statistic for each item was then compared to the overall scale Cronbach’s Alpha statistic.

**Academic and clinical training.** Respondents in the pilot indicated that they used experiences learned in Internship ($M = 3.57$) more than they used Undergraduate classes ($M = 2.87$) and Pre-internship clinical classes ($M = 2.90$) (see Tables 5 and 6). For the item Non MT Classes, 9 of the respondents did not answer the question and several commented that this question was not appropriate for the study indicating that music therapy experiences are not learned in non-music therapy classes. For each ACT item, Cronbach’s alpha if-item-deleted statistic was at or below the overall statistic of 0.628 (see Table 7).
Table 5

Academic and Clinical Training Pilot Item Frequency Data

<table>
<thead>
<tr>
<th>ACT Item</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Most Times</th>
<th>Always</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT1 UG Classes</td>
<td>1</td>
<td>8</td>
<td>15</td>
<td>0</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>ACT2 Non MT Classes</td>
<td>4</td>
<td>17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>ACT3 Pre-Int. Clinical</td>
<td>2</td>
<td>7</td>
<td>14</td>
<td>6</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>ACT 4 Internship</td>
<td>0</td>
<td>2</td>
<td>12</td>
<td>13</td>
<td>3</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 6

Academic and Clinical Training Pilot Item Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT1 UG Classes</td>
<td>30</td>
<td>2.87</td>
<td>0.14</td>
<td>0.78</td>
<td>0.60</td>
<td>-0.23</td>
<td>-0.23</td>
</tr>
<tr>
<td>ACT2 Non MT Classes</td>
<td>30</td>
<td>2.17</td>
<td>0.12</td>
<td>0.65</td>
<td>0.42</td>
<td>-0.17</td>
<td>-0.50</td>
</tr>
<tr>
<td>ACT3 Pre-Int. Clinical</td>
<td>30</td>
<td>2.90</td>
<td>0.17</td>
<td>0.92</td>
<td>0.85</td>
<td>-0.07</td>
<td>0.11</td>
</tr>
<tr>
<td>ACT4 Internship</td>
<td>30</td>
<td>3.57</td>
<td>0.14</td>
<td>0.77</td>
<td>0.60</td>
<td>0.00</td>
<td>-0.21</td>
</tr>
</tbody>
</table>

Table 7

Academic and Clinical Training Pilot Item Reliability Statistics

<table>
<thead>
<tr>
<th>ACT Item</th>
<th>M</th>
<th>SD</th>
<th>Corrected Item Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT1 UG Classes</td>
<td>2.87</td>
<td>0.78</td>
<td>0.43</td>
<td>0.54</td>
</tr>
<tr>
<td>ACT2 Non MT Classes</td>
<td>2.17</td>
<td>0.65</td>
<td>0.29</td>
<td>0.63</td>
</tr>
<tr>
<td>ACT3 Pre-Int. Clinical</td>
<td>2.90</td>
<td>0.92</td>
<td>0.60</td>
<td>0.38</td>
</tr>
<tr>
<td>ACT4 Internship</td>
<td>3.57</td>
<td>0.77</td>
<td>0.33</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.628; 4 Items; n = 30; Excluded n = 0

Clinical practice experiences. Clinical experiences created by the therapist indicate a higher rate of use ($M = 2.63$) over other clinical experiences (See Tables 8 and 9). For CP experiences created or adapted items, Cronbach’s alpha if-item-
deleted statistic was below the overall statistic of (0.655). The Experiences

Observed item was slightly above with a Cronbach’ alpha if-item-deleted statistic at

0.67 (see Table 10).

Table 8

<table>
<thead>
<tr>
<th>Interventions are...</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Most Times</th>
<th>Always</th>
<th>Valid N</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 Created</td>
<td>0</td>
<td>0</td>
<td>13</td>
<td>15</td>
<td>2</td>
<td>30</td>
</tr>
<tr>
<td>CP2 Adapted</td>
<td>0</td>
<td>0</td>
<td>17</td>
<td>12</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>CP3 Observed</td>
<td>0</td>
<td>3</td>
<td>20</td>
<td>6</td>
<td>1</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 9

<table>
<thead>
<tr>
<th>Interventions are...</th>
<th>N</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>Var.</th>
<th>Skew.</th>
<th>Kurt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 Created</td>
<td>30</td>
<td>3.63</td>
<td>0.11</td>
<td>0.61</td>
<td>0.38</td>
<td>0.40</td>
<td>-0.57</td>
</tr>
<tr>
<td>CP2 Adapted</td>
<td>30</td>
<td>3.47</td>
<td>0.10</td>
<td>0.57</td>
<td>0.33</td>
<td>0.73</td>
<td>-0.43</td>
</tr>
<tr>
<td>CP3 Observed</td>
<td>30</td>
<td>3.17</td>
<td>0.12</td>
<td>0.65</td>
<td>0.42</td>
<td>0.65</td>
<td>1.43</td>
</tr>
</tbody>
</table>

Table 10

<table>
<thead>
<tr>
<th>CP Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 Created</td>
<td>3.63</td>
<td>0.61</td>
<td>0.43</td>
<td>0.60</td>
</tr>
<tr>
<td>CP2 Adapted</td>
<td>3.47</td>
<td>0.57</td>
<td>0.59</td>
<td>0.39</td>
</tr>
<tr>
<td>CP3 Observed</td>
<td>3.17</td>
<td>0.65</td>
<td>0.39</td>
<td>0.67</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.655; 3 Items; n = 30; Excluded n = 0

**Supervision experiences.** The supervision reliability testing was not possible because there were only two items. Respondents reported that they used their observations of music therapy supervisors ($M = 2.80$) more than their observations
of non-music therapy supervisors (\(M = 2.10\)), (See Tables 11 and 12).

Cronbach’s If Item Deleted statistics were not calculated for this scale due to two items (see Table 13). The written feedback from the participants about supervision indicating that they observe, use and adapt experiences helped inform the researcher on expanding this scale and there were more items added for the final study.

Table 11

Supervision Experiences Pilot Item Frequency Data

<table>
<thead>
<tr>
<th>Supervisors are...</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Observed MT</td>
<td>5</td>
<td>3</td>
<td>15</td>
<td>7</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>S2 Observed non MT</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 12

Supervision Experiences Pilot Scale and Item Descriptive Data

<table>
<thead>
<tr>
<th>Interventions used were...</th>
<th>N</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Std. Dev.</th>
<th>Var.</th>
<th>Skew.</th>
<th>Kurt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Observed MT</td>
<td>30</td>
<td>2.80</td>
<td>0.18</td>
<td>0.10</td>
<td>0.99</td>
<td>-0.69</td>
<td>-0.40</td>
</tr>
<tr>
<td>S2 Observed non MT</td>
<td>30</td>
<td>2.10</td>
<td>0.15</td>
<td>0.85</td>
<td>0.71</td>
<td>-0.20</td>
<td>-1.59</td>
</tr>
</tbody>
</table>

Table 13

Supervision Pilot Reliability Statistics

<table>
<thead>
<tr>
<th>Super. Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total</th>
<th>Cronbach's If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Observed MT</td>
<td>2.80</td>
<td>0.10</td>
<td>0.15</td>
<td>NA</td>
</tr>
<tr>
<td>S2 Observed non MT</td>
<td>2.10</td>
<td>0.85</td>
<td>0.15</td>
<td>NA</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha .254; 2 Items; Cronbach’s If Item Deleted was not calculated for this scale due to two items.
Social situations. Social situation that involved music therapy conferences rated the highest ($M = 2.35$) and the lowest non-professional group Internet chats ($M = 1.25$) (see Table 14 and 15). All SS item reliability statistics fell below the overall Cronbach’s Alpha if-item-deleted statistic of 0.818 (see Table 16).

Table 14

<table>
<thead>
<tr>
<th>Social Situations</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Often</th>
<th>Always</th>
<th>Valid N</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1 Internet Media</td>
<td>5</td>
<td>3</td>
<td>15</td>
<td>7</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>SS2 Not Conf.</td>
<td>8</td>
<td>13</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>SS3 MT Conf.</td>
<td>6</td>
<td>4</td>
<td>18</td>
<td>2</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>SS4 Non MT Conf.</td>
<td>14</td>
<td>11</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>SS5 Prof. Int. Chats</td>
<td>14</td>
<td>10</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>SS6 Non prof chats</td>
<td>24</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>SS7 Internet Blogs</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 15

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1 Internet Media</td>
<td>30</td>
<td>2.03</td>
<td>0.16</td>
<td>0.85</td>
<td>0.72</td>
<td>-0.07</td>
<td>-1.63</td>
</tr>
<tr>
<td>SS2 Not Conf.</td>
<td>30</td>
<td>2.03</td>
<td>0.14</td>
<td>0.77</td>
<td>0.59</td>
<td>-0.06</td>
<td>-1.23</td>
</tr>
<tr>
<td>SS3 MT Conf.</td>
<td>30</td>
<td>2.53</td>
<td>0.16</td>
<td>0.90</td>
<td>0.81</td>
<td>-0.72</td>
<td>-0.51</td>
</tr>
<tr>
<td>SS4 Non MT Conf.</td>
<td>30</td>
<td>1.70</td>
<td>0.14</td>
<td>0.75</td>
<td>0.56</td>
<td>0.57</td>
<td>-0.96</td>
</tr>
<tr>
<td>SS5 Prof. Int. Chats</td>
<td>30</td>
<td>1.73</td>
<td>0.14</td>
<td>0.79</td>
<td>0.62</td>
<td>0.52</td>
<td>-1.15</td>
</tr>
<tr>
<td>SS6 Non prof chats</td>
<td>29</td>
<td>1.24</td>
<td>0.11</td>
<td>0.58</td>
<td>0.33</td>
<td>2.37</td>
<td>4.74</td>
</tr>
<tr>
<td>SS7 Internet Blogs</td>
<td>30</td>
<td>2.00</td>
<td>0.15</td>
<td>0.83</td>
<td>0.69</td>
<td>0.00</td>
<td>-1.55</td>
</tr>
</tbody>
</table>
Table 16

<table>
<thead>
<tr>
<th>Social Situations</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item Total</th>
<th>Cronbach's If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1 Internet Media</td>
<td>2.00</td>
<td>0.85</td>
<td>0.60</td>
<td>0.79</td>
</tr>
<tr>
<td>SS2 Not Conf.</td>
<td>2.00</td>
<td>0.76</td>
<td>0.61</td>
<td>0.79</td>
</tr>
<tr>
<td>SS3 MT Conf.</td>
<td>2.52</td>
<td>0.91</td>
<td>0.61</td>
<td>0.79</td>
</tr>
<tr>
<td>SS4 Non MT Conf.</td>
<td>1.66</td>
<td>0.72</td>
<td>0.62</td>
<td>0.78</td>
</tr>
<tr>
<td>SS5 Prof. Int. Chats</td>
<td>1.69</td>
<td>0.76</td>
<td>0.66</td>
<td>0.78</td>
</tr>
<tr>
<td>SS6 Non prof chats</td>
<td>1.24</td>
<td>0.58</td>
<td>0.45</td>
<td>0.81</td>
</tr>
<tr>
<td>SS7 Internet Blogs</td>
<td>1.97</td>
<td>0.82</td>
<td>0.39</td>
<td>0.82</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha .818; 7 items; n = 29; Excluded n = 1

Respondents rated that they use music experiences that they learned in Professional Development experiences at Music Therapy clinical conferences more than other PD experiences (see Tables 17 and 18). For PD Cronbach’s alpha if-item-deleted statistics were at or below the overall statistic of 0.810 (see Table 19). Eight respondents were excluded because they answered two questions in the PD that had NA responses added to them. That data was recoded as missing data.
Table 17

<table>
<thead>
<tr>
<th>Prof. Dev.</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Most Times</th>
<th>Always</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD1 MT Job</td>
<td>3</td>
<td>2</td>
<td>15</td>
<td>0</td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td>PD2 NonMTJob</td>
<td>9</td>
<td>3</td>
<td>11</td>
<td>1</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>PD3 MT Off Job</td>
<td>0</td>
<td>4</td>
<td>18</td>
<td>7</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>PD4 NonMTOffJob</td>
<td>9</td>
<td>9</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>PD5 MT Clin. Conf</td>
<td>1</td>
<td>5</td>
<td>21</td>
<td>2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>PD6 MT Res. Conf</td>
<td>3</td>
<td>16</td>
<td>9</td>
<td>0</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>PD7 NonMTClin.Conf</td>
<td>12</td>
<td>10</td>
<td>7</td>
<td>0</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>PD8 NonMTRes.Conf</td>
<td>17</td>
<td>8</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>PD9 CMTE</td>
<td>0</td>
<td>4</td>
<td>23</td>
<td>2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>PD10 Non CMTE</td>
<td>11</td>
<td>14</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 18

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PD1 MT Job</td>
<td>22</td>
<td>2.82</td>
<td>0.21</td>
<td>1.01</td>
<td>1.01</td>
<td>0.09</td>
<td>1.40</td>
</tr>
<tr>
<td>PD2 NonMTJob</td>
<td>25</td>
<td>2.28</td>
<td>0.23</td>
<td>1.14</td>
<td>1.30</td>
<td>0.32</td>
<td>-0.52</td>
</tr>
<tr>
<td>PD3 MT Off Job</td>
<td>30</td>
<td>3.17</td>
<td>0.13</td>
<td>0.70</td>
<td>0.49</td>
<td>0.41</td>
<td>0.59</td>
</tr>
<tr>
<td>PD4 NonMTOffJob</td>
<td>30</td>
<td>2.10</td>
<td>0.15</td>
<td>0.85</td>
<td>0.71</td>
<td>-0.20</td>
<td>-1.59</td>
</tr>
<tr>
<td>PD5 MT Clin. Conf</td>
<td>30</td>
<td>2.90</td>
<td>0.13</td>
<td>0.71</td>
<td>0.51</td>
<td>0.15</td>
<td>3.05</td>
</tr>
<tr>
<td>PD6 MT Res. Conf</td>
<td>29</td>
<td>2.31</td>
<td>0.15</td>
<td>0.81</td>
<td>0.65</td>
<td>1.11</td>
<td>3.28</td>
</tr>
<tr>
<td>PD7 NonMTClin.Conf</td>
<td>29</td>
<td>1.83</td>
<td>0.15</td>
<td>0.81</td>
<td>0.65</td>
<td>0.33</td>
<td>-1.36</td>
</tr>
<tr>
<td>PD8 NonMTRes.Conf</td>
<td>30</td>
<td>1.60</td>
<td>0.14</td>
<td>0.77</td>
<td>0.59</td>
<td>0.85</td>
<td>-0.73</td>
</tr>
<tr>
<td>PD9 CMTE</td>
<td>30</td>
<td>3.00</td>
<td>0.11</td>
<td>0.59</td>
<td>0.35</td>
<td>1.10</td>
<td>4.51</td>
</tr>
<tr>
<td>PD10 Non CMTE</td>
<td>30</td>
<td>1.80</td>
<td>0.13</td>
<td>0.71</td>
<td>0.51</td>
<td>0.32</td>
<td>-0.91</td>
</tr>
</tbody>
</table>
Table 19

<table>
<thead>
<tr>
<th>Professional Development</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item Total</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD1 MT Job</td>
<td>2.82</td>
<td>1.01</td>
<td>0.31</td>
<td>0.81</td>
</tr>
<tr>
<td>PD2 NonMTJob</td>
<td>2.23</td>
<td>1.93</td>
<td>0.40</td>
<td>0.81</td>
</tr>
<tr>
<td>PD3 MT Off Job</td>
<td>3.23</td>
<td>0.75</td>
<td>0.54</td>
<td>0.79</td>
</tr>
<tr>
<td>PD4 NonMTOffJob</td>
<td>2.18</td>
<td>0.85</td>
<td>0.47</td>
<td>0.79</td>
</tr>
<tr>
<td>PD5 MTClin. Conf.</td>
<td>2.91</td>
<td>0.81</td>
<td>0.48</td>
<td>0.78</td>
</tr>
<tr>
<td>PD6 MTRes. Conf.</td>
<td>2.32</td>
<td>0.89</td>
<td>0.65</td>
<td>0.79</td>
</tr>
<tr>
<td>PD7 NonMTClin.Conf.</td>
<td>1.86</td>
<td>0.83</td>
<td>0.49</td>
<td>0.76</td>
</tr>
<tr>
<td>PD8 NonMTRes.Conf.</td>
<td>1.59</td>
<td>0.80</td>
<td>0.44</td>
<td>0.79</td>
</tr>
<tr>
<td>PD9 CMTE</td>
<td>3.09</td>
<td>0.61</td>
<td>0.44</td>
<td>0.80</td>
</tr>
<tr>
<td>PD10 Non CMTE</td>
<td>1.86</td>
<td>0.71</td>
<td>0.73</td>
<td>0.77</td>
</tr>
</tbody>
</table>

Notes: Cronbach’s Alpha 0.810; 10 Items; n = 22; Excluded n = 8

**Theory and research readings.** Music Therapy Journals ($M = 2.33$) and Music Therapy Texts ($M = 2.24$) ranked the top two Theory and Research Readings used by the respondents (see Table 20 and 21). Cronbach’s alpha if-item-deleted statistic for each item was at or below the overall statistic of 0.746 except for Non-Music Therapy Texts at 0.83 (see Table 22). The theoretical value of the Non-Music Therapy Texts item was important and the item statistics were acceptable in a small sample pilot study.
Table 20

<table>
<thead>
<tr>
<th>TRR</th>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
<th>Most Times</th>
<th>Always</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1 MT Journ.</td>
<td>4</td>
<td>16</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>R2 NonMTJourn.</td>
<td>8</td>
<td>14</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>R7 MT Text</td>
<td>6</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>29</td>
</tr>
<tr>
<td>R8 Non MT Text</td>
<td>10</td>
<td>17</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
</tbody>
</table>

Table 21

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R1 MT Journ.</td>
<td>30</td>
<td>2.33</td>
<td>0.17</td>
<td>0.92</td>
<td>0.85</td>
<td>0.95</td>
<td>1.37</td>
</tr>
<tr>
<td>R2 NonMTJourn.</td>
<td>30</td>
<td>2.00</td>
<td>0.14</td>
<td>0.74</td>
<td>0.55</td>
<td>0.00</td>
<td>-1.11</td>
</tr>
<tr>
<td>R7 MT Text</td>
<td>29</td>
<td>2.24</td>
<td>0.17</td>
<td>0.91</td>
<td>0.83</td>
<td>0.69</td>
<td>1.47</td>
</tr>
<tr>
<td>R8 Non MT Text</td>
<td>30</td>
<td>1.77</td>
<td>0.11</td>
<td>0.63</td>
<td>0.39</td>
<td>0.20</td>
<td>-0.45</td>
</tr>
</tbody>
</table>

Table 22

<table>
<thead>
<tr>
<th>TRR</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item Total</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1 MT Journ.</td>
<td>2.34</td>
<td>0.94</td>
<td>0.65</td>
<td>0.62</td>
</tr>
<tr>
<td>R2 NonMTJourn.</td>
<td>2.00</td>
<td>0.76</td>
<td>0.67</td>
<td>0.62</td>
</tr>
<tr>
<td>R7 MT Text</td>
<td>2.24</td>
<td>0.91</td>
<td>0.67</td>
<td>0.60</td>
</tr>
<tr>
<td>R8 Non MT Text</td>
<td>1.76</td>
<td>0.64</td>
<td>0.20</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.746; 4 Items; n = 29; Excluded n = 1

Non-theory and non-research readings. Non-research Music Therapy Journals \( (M = 2.33) \), equal mean to that of Music Therapy Research Journals, were used more by the respondents than the other items (see Tables 23 and 24). For nTnRR experiences created or adapted items, Cronbach’s alpha if-item-deleted
statistic was below the overall statistic of 0.609 for items except Internet WebBlogs at 0.67 (see Table 25).

Table 23

Non-Theory and Non-Research Readings Pilot Item Frequency Data

<table>
<thead>
<tr>
<th>nTnRR</th>
<th>Frequency Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3 MTJourNonR</td>
<td>4 Never, 14 Rarely, 11 Sometimes, 0 Most Times, 1 Always, 30 NA</td>
</tr>
<tr>
<td>R4 WebBlogs</td>
<td>7 Never, 8 Rarely, 15 Sometimes, 0 Most Times, 0 Always, 30 NA</td>
</tr>
<tr>
<td>R5 NonIntMedia</td>
<td>20 Never, 10 Rarely, 0 Sometimes, 0 Most Times, 0 Always, 30 NA</td>
</tr>
<tr>
<td>R6 Assoc. News</td>
<td>16 Never, 11 Rarely, 3 Sometimes, 0 Most Times, 0 Always, 30 NA</td>
</tr>
</tbody>
</table>

Table 24

Non Theory and Non Research Readings Pilot Scale and Item Descriptive Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R3 MTJourNonR</td>
<td>30</td>
<td>2.33</td>
<td>0.15</td>
<td>0.84</td>
<td>0.71</td>
<td>0.75</td>
<td>2.14</td>
</tr>
<tr>
<td>R4 WebBlogs</td>
<td>30</td>
<td>2.27</td>
<td>0.15</td>
<td>0.83</td>
<td>0.69</td>
<td>-0.55</td>
<td>-1.31</td>
</tr>
<tr>
<td>R5 NonIntMedia</td>
<td>30</td>
<td>1.33</td>
<td>0.09</td>
<td>0.48</td>
<td>0.23</td>
<td>0.75</td>
<td>-1.55</td>
</tr>
<tr>
<td>R6 Assoc. News</td>
<td>30</td>
<td>1.57</td>
<td>0.12</td>
<td>0.68</td>
<td>0.46</td>
<td>0.81</td>
<td>-0.40</td>
</tr>
</tbody>
</table>

Table 25

Non-Theory and Non-Research Readings Pilot Reliability Statistics

<table>
<thead>
<tr>
<th>nTnRR</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item Total</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>R3 MTJourNonR</td>
<td>2.33</td>
<td>0.84</td>
<td>0.44</td>
<td>0.51</td>
</tr>
<tr>
<td>R4 WebBlogs</td>
<td>2.27</td>
<td>0.83</td>
<td>0.24</td>
<td>0.67</td>
</tr>
<tr>
<td>R5 NonIntMedia</td>
<td>1.33</td>
<td>0.48</td>
<td>0.26</td>
<td>0.62</td>
</tr>
<tr>
<td>R6 Assoc. News</td>
<td>1.57</td>
<td>0.68</td>
<td>0.72</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.609; 4 Items; n = 30; Excluded n = 0

Perception of music ability. Respondents reported feeling the most competent when leading on their primary instrument ($M = 4.07$) when delivering
music intervention experiences (see Tables 26). For PMA experiences Cronbach’s alpha if-item-deleted statistic was at or below the overall statistic of 0.878 for all items except accompanying which was at 0.89 (see Table 27).

Table 26

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PMA1 Leading</td>
<td>30</td>
<td>4.07</td>
<td>0.13</td>
<td>0.69</td>
<td>0.48</td>
<td>-0.09</td>
<td>-0.77</td>
</tr>
<tr>
<td>PMA2 Accompanying</td>
<td>30</td>
<td>3.90</td>
<td>0.14</td>
<td>0.76</td>
<td>0.58</td>
<td>-0.33</td>
<td>0.04</td>
</tr>
<tr>
<td>PMA3 Sight Reading</td>
<td>30</td>
<td>3.23</td>
<td>0.20</td>
<td>1.10</td>
<td>1.22</td>
<td>-0.00</td>
<td>-0.90</td>
</tr>
<tr>
<td>PMA4 Transposing</td>
<td>30</td>
<td>3.30</td>
<td>0.19</td>
<td>1.02</td>
<td>1.05</td>
<td>-0.25</td>
<td>-0.51</td>
</tr>
<tr>
<td>PMA5 Harmonizing</td>
<td>29</td>
<td>3.48</td>
<td>0.19</td>
<td>1.02</td>
<td>1.04</td>
<td>-0.49</td>
<td>-0.11</td>
</tr>
<tr>
<td>PMA6 Improvising</td>
<td>30</td>
<td>3.33</td>
<td>0.23</td>
<td>1.27</td>
<td>1.61</td>
<td>-0.68</td>
<td>-0.64</td>
</tr>
<tr>
<td>PMA7 Composing</td>
<td>30</td>
<td>3.53</td>
<td>0.20</td>
<td>1.11</td>
<td>1.22</td>
<td>-0.75</td>
<td>0.16</td>
</tr>
</tbody>
</table>

Table 27

<table>
<thead>
<tr>
<th>PMA</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item Total</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMA1 Leading</td>
<td>4.10</td>
<td>0.67</td>
<td>0.72</td>
<td>0.86</td>
</tr>
<tr>
<td>PMA2 Accompanying</td>
<td>3.93</td>
<td>0.75</td>
<td>0.10</td>
<td>0.89</td>
</tr>
<tr>
<td>PMA3 Sight Reading</td>
<td>3.28</td>
<td>1.10</td>
<td>0.73</td>
<td>0.85</td>
</tr>
<tr>
<td>PMA4 Transposing</td>
<td>3.31</td>
<td>1.04</td>
<td>0.61</td>
<td>0.87</td>
</tr>
<tr>
<td>PMA5 Harmonizing</td>
<td>3.48</td>
<td>1.02</td>
<td>0.81</td>
<td>0.84</td>
</tr>
<tr>
<td>PMA6 Improvising</td>
<td>3.38</td>
<td>1.27</td>
<td>0.75</td>
<td>0.85</td>
</tr>
<tr>
<td>PMA7 Composing</td>
<td>3.55</td>
<td>1.12</td>
<td>0.69</td>
<td>0.86</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.878; 7 Items; n = 29; Excluded n = 1

Changes to Pilot Questionnaire for Study

Based on the feedback from the pilot study participants and results from the item analyses, the following changes were made from the pilot questionnaire to the
study Sources of Knowledge Questionnaire. When faced with decisions
regarding if an item was appropriate for a scale if the Cronbach’s alpha if-item-
deleted was in question, theoretical considerations outweighed the statistic since
the pilot study was a small sample.

**Demographic question changes.** The selection of *primary work setting* was
expanded to include *private practice* and *for a facility as a salaried employee* and *for
a facility on an hourly rate*. It was mentioned by the respondents that adding these
choices would better describe the population as some music therapists do work
both in private practice and as a salaried employee or may work for a facility on an
hourly rate, not as salaried employee. Other additions included, adding *other* to
*primary instrument used* and adding *undergraduate plus music therapy equivalency
only* as a choice for *highest level of education completed in music therapy*.

Feedback indicated that participants worked with more than one age group.
Therefore, the choice *I work equally with 2 or more age groups* was added to the
population age group question. If this choice was selected, the participant was then
directed to another question about age to select the age groups if they work with 2
or more groups equally. Based on written feedback from the respondents, for the
*populations/setting* question, *multiple populations at a community–based non-
university/college* was added as well as the words *multiple populations at a
community–based* to the *university/college clinic* option. For the *primary
philosophical orientation* question, there was an error where two options were place
on the same choice. For the study questionnaire, *Humanistic* and *Psychodynamic*
were then separated into two choices. The choices of none and other were added to the current or former professional designations.

**Scale item changes.** Based on feedback from the respondents, the measurement rating of most of the time was changed to often. It was said that most of the time was too much like always and that rating an item as often fell better the middle of sometimes and always. Based on feedback, one item was added in Academic and Clinical Training to include music therapy graduate training. The question related to music interventions learned in non-music therapy academic classes was removed from Academic and Clinical Training as the respondents stated that music therapy interventions are not learned in non music therapy academic classes. Several reported that this question was not relevant. For the Current Clinical Practice scale, one item was reworded for clarity regarding adapting music interventions from other music therapists observed.

Supervision scale items expanded from 2 to 4 items, adding two items that were similar to the previous items except the word adapt in the place of use. Reviewers indicated that they many times they adapt or use experiences that they learned from clinical supervisors. For the Social Situations scale, it was suggested that the items Web blogs was not a social situation but a source of Non-Theory and Non-Research Internet reading, therefore the Web/blog item was removed from the Social Situations scale and the word blog was added as an example on the reading from a nonsocial media on the internet item. It was suggested that interventions learned in professional development many times are adapted for use in a music
therapy session, therefore the words or adapt were added after I use at the beginning of each item in the professional development scale.

Both Theory and Research Readings (TRR) and Non-Theory/Non-Research Readings (nTnRR) had changes in items. The item non-research Music Therapy journal was moved to the TRR scale. Based on a comment from a pilot participant, the researcher looked at the journal description and found that they do accept research reports, therefore this justifies the move to the TRR scale. This left the nTnRR scale with 3 items and the TRR scale with 5 items. In addition, the word blog was added as an example to non-social media on the Internet nTnRR scale.

The professional reviewers and the pilot participants found the questions on Perceived Music Ability to be confusing separated by different specific music skills. Some respondents stated that they do not separate their skills therefore had difficulty answering questions where they were asked to evaluate this. Comments included that the scale Music Ability was not relevant to the research goals and they did not understand why it was on the questionnaire. The Music Ability items were then removed as a scale and one question on self-perceived expertise on their primary instrument used in therapy was used to better represent the intent of gaining knowledge about perceive music ability as demographic. Other additions to the questionnaire included a definition of a music intervention as defined by AMTA and better explanation of the scale groupings. Total questions on the final questionnaire for the study numbered 52 as compared to 68 questions in the pilot.
**Item Analyses and Scale Reliability**

To determine how well the items worked together in each scale and to determine if there were any items that were problematic for the scale, Cronbach’s Alpha statistical test of scale reliability was run for each of the scales. The Mean, Standard Deviation, Item Total Correlation, and Cronbach’s Alpha if-item-deleted statistics were analyzed for each item.

**Academic and Clinical Training Reliability**

The result of Cronbach’s Alpha for the scale Academic and Clinical Training was (0.570) for 4 items in the scale. When interpreting Cronbach’s Alpha, reliability should decrease when a useful item is deleted. In ACT, all items except graduate classes of Cronbach’s alpha if-item-deleted resulted below Cronbach’s Alpha of 0.570. However, the graduate class item analysis resulted in Cronbach’s alpha if-item-deleted at 0.714, above the scale statistic, indicating that the item did not necessarily fit well as worded with the other scale items (see Table 28).

**Table 28**

<table>
<thead>
<tr>
<th>ACT Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT1 UG Classes</td>
<td>3.33</td>
<td>0.948</td>
<td>0.386</td>
<td>0.475</td>
</tr>
<tr>
<td>ACT2 Grad Classes</td>
<td>2.88</td>
<td>1.329</td>
<td>0.159</td>
<td>0.714</td>
</tr>
<tr>
<td>ACT3 Pre-Int. Clinical</td>
<td>3.39</td>
<td>0.871</td>
<td>0.548</td>
<td>0.365</td>
</tr>
<tr>
<td>ACT4 Internship</td>
<td>3.83</td>
<td>0.908</td>
<td>0.439</td>
<td>0.439</td>
</tr>
</tbody>
</table>

*Notes.* Cronbach’s Alpha 0.570; 4 Items; (n = 232); Excluded (n = 44).
Clinical Practice Reliability

The result of Cronbach’s Alpha for the scale Clinical Practice was 0.621 for 3 items in the scale. Observed and adapted clinical experiences resulted with a Cronbach’s alpha if-item-deleted below is 0.621. The created clinical experience item analysis resulted in alpha if-item-deleted = 0.713, above the scale statistic, although the corrected item-total correlation = 0.290 (see Table 29).

Table 29

<table>
<thead>
<tr>
<th>CP Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP1 Created</td>
<td>3.83</td>
<td>.739</td>
<td>.290</td>
<td>.713</td>
</tr>
<tr>
<td>CP2 Observed</td>
<td>3.42</td>
<td>.691</td>
<td>.529</td>
<td>.382</td>
</tr>
<tr>
<td>CP3 Adapted</td>
<td>3.60</td>
<td>.736</td>
<td>.488</td>
<td>.434</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.621; 3 Items; (n = 267); Excluded (n = 9).

Supervision Scale Reliability

The result of Cronbach’s Alpha for the scale Supervision was 0.822 for 4 items in the scale. All items for Cronbach’s alpha if-item-deleted resulted below 0.822. All items seem to work well in this scale based on these statistics (see Table 30).
Table 30

Supervision Reliability Statistics

<table>
<thead>
<tr>
<th>Super. Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1 Observed MT</td>
<td>2.73</td>
<td>1.140</td>
<td>.672</td>
<td>.764</td>
</tr>
<tr>
<td>S2 Adapt/Obs. MT</td>
<td>2.87</td>
<td>1.141</td>
<td>.698</td>
<td>.751</td>
</tr>
<tr>
<td>S3 Obs. NonMT</td>
<td>2.36</td>
<td>.977</td>
<td>.625</td>
<td>.787</td>
</tr>
<tr>
<td>S4 Adapt/Obs. NonMT</td>
<td>2.60</td>
<td>1.101</td>
<td>.595</td>
<td>.799</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.822; 4 Items; (n = 250); Excluded (n = 26).

Social Situations Reliability

The result of Cronbach’s Alpha for the scale of Social Situations was 0.791 for 6 items in the scale. All items for Cronbach’s alpha if-item-deleted resulted below 0.791, indicating that all the items seemed to work well in this scale (see Table 31).

Table 31

Social Situations Reliability Statistics

<table>
<thead>
<tr>
<th>Super. Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1 Internet Media</td>
<td>2.22</td>
<td>.967</td>
<td>.596</td>
<td>.746</td>
</tr>
<tr>
<td>SS2 Not Conf.</td>
<td>2.39</td>
<td>.888</td>
<td>.464</td>
<td>.777</td>
</tr>
<tr>
<td>SS3 MT Conf.</td>
<td>2.73</td>
<td>.932</td>
<td>.545</td>
<td>.759</td>
</tr>
<tr>
<td>SS4 Non MT Conf.</td>
<td>2.05</td>
<td>.908</td>
<td>.516</td>
<td>.765</td>
</tr>
<tr>
<td>SS5 Prof. Int. Chats</td>
<td>2.04</td>
<td>.971</td>
<td>.601</td>
<td>.744</td>
</tr>
<tr>
<td>SS6 Non Prof. Chats</td>
<td>1.56</td>
<td>.734</td>
<td>.545</td>
<td>.762</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha .791; 6 items; (n = 248); Excluded (n = 28).

Professional Development Reliability

The result of Cronbach’s Alpha for the scale Professional Development was 0.877 for 10 items in the scale. All items for Cronbach’s alpha if-item-deleted
resulted below 0.877 indicating that all the items worked well together for this scale (see Table 32).

Table 32

<table>
<thead>
<tr>
<th>PD Item</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach's If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD1 MT Job</td>
<td>3.05</td>
<td>1.215</td>
<td>.583</td>
<td>.868</td>
</tr>
<tr>
<td>PD2 NonMTJob</td>
<td>2.54</td>
<td>1.004</td>
<td>.586</td>
<td>.866</td>
</tr>
<tr>
<td>PD3 MT Off Job</td>
<td>3.06</td>
<td>1.032</td>
<td>.590</td>
<td>.866</td>
</tr>
<tr>
<td>PD4 NonMTOffJob</td>
<td>2.51</td>
<td>1.027</td>
<td>.657</td>
<td>.861</td>
</tr>
<tr>
<td>PD5 MTClin. Conf.</td>
<td>3.18</td>
<td>.965</td>
<td>.519</td>
<td>.871</td>
</tr>
<tr>
<td>PD6 MTRes. Conf.</td>
<td>2.73</td>
<td>.955</td>
<td>.590</td>
<td>.866</td>
</tr>
<tr>
<td>PD7 NonMTClin.Conf.</td>
<td>2.26</td>
<td>.957</td>
<td>.675</td>
<td>.860</td>
</tr>
<tr>
<td>PD8 NonMTRRes.Conf.</td>
<td>1.93</td>
<td>.933</td>
<td>.650</td>
<td>.862</td>
</tr>
<tr>
<td>PD9 CMTE</td>
<td>3.30</td>
<td>.998</td>
<td>.518</td>
<td>.871</td>
</tr>
<tr>
<td>PD10 Non CMTE</td>
<td>2.32</td>
<td>1.042</td>
<td>.659</td>
<td>.860</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.877; 10 Items; (n = 220); Excluded (n = 56).

Theory and Research Readings Reliability

The result of Cronbach’s Alpha for the scale of Theory and Research Readings was 0.809 for 5 items in the scale. All items for Cronbach's alpha if-item-deleted resulted below Cronbach’s alpha statistic of 0.809 indicating that all the items worked well together for this scale (see Table 33).
Table 33

Theory and Research Readings Reliability Statistics

<table>
<thead>
<tr>
<th>TRR Items</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1 MT Journ.</td>
<td>9.68</td>
<td>8.53</td>
<td>0.680</td>
<td>0.748</td>
</tr>
<tr>
<td>R2 NonMTJourn.</td>
<td>10.19</td>
<td>8.55</td>
<td>0.605</td>
<td>0.769</td>
</tr>
<tr>
<td>R3 MT Text</td>
<td>9.87</td>
<td>8.20</td>
<td>0.595</td>
<td>0.773</td>
</tr>
<tr>
<td>R7 NonMT Text</td>
<td>10.26</td>
<td>9.06</td>
<td>0.494</td>
<td>0.802</td>
</tr>
<tr>
<td>R8 MTJourn. non Research</td>
<td>9.75</td>
<td>8.69</td>
<td>0.617</td>
<td>0.766</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.809; 5 Items; (n = 223); Excluded (n = 53).

Non-Theory and Non-Research Readings Reliability

The result of Cronbach’s Alpha for the scale of Non-Theory and Non-Research Readings was 0.617 for 3 items in the scale. All items for Cronbach’s alpha if-items-deleted resulted below 0.617 indicating that all the items worked well together for this scale (see Table 34).

Table 34

Non-Theory and Non-Research Readings Scale Reliability Statistics

<table>
<thead>
<tr>
<th>nTnRR Items</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Corrected Item-Total Correlation</th>
<th>Cronbach’s If Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4 WebBlogs</td>
<td>3.41</td>
<td>1.625</td>
<td>0.408</td>
<td>0.577</td>
</tr>
<tr>
<td>R5 NonIntMedia</td>
<td>4.29</td>
<td>2.109</td>
<td>0.495</td>
<td>0.448</td>
</tr>
<tr>
<td>R6 Assoc. News</td>
<td>4.09</td>
<td>2.083</td>
<td>0.408</td>
<td>0.544</td>
</tr>
</tbody>
</table>

Notes. Cronbach’s Alpha 0.617; 3 Items; (n = 231); Excluded (n = 45).

In general, the Cronbach’s If-Item-Deleted statistics for each scale did not indicate any particular problems with the items.
Exploratory Factor Analysis of Items

Exploratory factor analysis (EFA) allows researchers to determine if many variables, in the case of this study, many items, can be described by a few factors. While theory dictated how the items were originally organized and chosen, the data on how consistently participants answer the items determined how they grouped as factors. Adhering to procedures outlined in Warner (2008), the researcher performed three versions of principal axis factoring for all scale items, first with no limits on the number of factors and no rotation, second specifying 6 factors and no rotation, then thirdly specifying 6 factors with a varimax rotation.

The Kaiser-Meyer-Olkin measure of sampling adequacy ($KMO = 0.823$) indicated that the items had a high common degree of variance. This means that the factoring analysis procedures accounted for a large amount of the variance providing confidence that the factor analysis is accurate. Bartlett’s test of Sphericity indicated significance ($p < 0.001$). Therefore, the researcher then rejected the null hypothesis that all item-correlations are zero and accepted that the items are not independent, therefore it was reasonable to run the factor analysis.

It should also be noted that based on the pilot data results it appeared at the time that it was most appropriate to keep the item R8 non-music therapy texts as part of the Theory and Research Readings scale for the study. However, it became clearer from the final data factor analysis that R8 needs further improvement because it appeared to be measuring two constructs (factors 1 and 4, see Table 35).
Table 35

Sources of Knowledge Item Rotated Factor Matrix

<table>
<thead>
<tr>
<th>Factors</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>PD8 Research Session non MT Conference</td>
<td>.744</td>
<td>.234</td>
<td>.188</td>
<td>.203</td>
<td>.079</td>
<td>.143</td>
</tr>
<tr>
<td>PD10 non CMTE sessions</td>
<td>.726</td>
<td>.165</td>
<td>.238</td>
<td>.152</td>
<td>.045</td>
<td>-.009</td>
</tr>
<tr>
<td>PD7 Clinical Session non MT Conference</td>
<td>.663</td>
<td>.180</td>
<td>.358</td>
<td>.095</td>
<td>.041</td>
<td>.103</td>
</tr>
<tr>
<td>PD2 Non MT On Job Site Prof. Dev.</td>
<td>.584</td>
<td>-.050</td>
<td>.337</td>
<td>.141</td>
<td>.130</td>
<td>-.039</td>
</tr>
<tr>
<td>PD4 Non MT Off Job Site Prof. Dev.</td>
<td>.579</td>
<td>.018</td>
<td>.395</td>
<td>.231</td>
<td>.161</td>
<td>-.046</td>
</tr>
<tr>
<td>S4 Adapt Observed non MT Supervisor Interventions</td>
<td>.536</td>
<td>.058</td>
<td>.145</td>
<td>.202</td>
<td>.500</td>
<td>-.004</td>
</tr>
<tr>
<td>S3 Use Observed non MT interventions</td>
<td>.529</td>
<td>.086</td>
<td>.003</td>
<td>.195</td>
<td>.525</td>
<td>-.054</td>
</tr>
<tr>
<td>SS4 Non MT Conference Social Gatherings</td>
<td>.516</td>
<td>.379</td>
<td>.112</td>
<td>.115</td>
<td>-.012</td>
<td>.075</td>
</tr>
<tr>
<td>R6 Prof. Assoc. Newsletters</td>
<td>.351</td>
<td>.285</td>
<td>.259</td>
<td>.214</td>
<td>.067</td>
<td>-.043</td>
</tr>
<tr>
<td>SS2 Non Conf. Social Gatherings</td>
<td>.337</td>
<td>.302</td>
<td>.085</td>
<td>.013</td>
<td>.019</td>
<td>.173</td>
</tr>
<tr>
<td>SS1 Social Internet Media</td>
<td>.049</td>
<td>.752</td>
<td>.075</td>
<td>-.034</td>
<td>-.024</td>
<td>-.030</td>
</tr>
<tr>
<td>SS5 Professional Group Chats on the Internet</td>
<td>.105</td>
<td>.720</td>
<td>.146</td>
<td>-.026</td>
<td>.136</td>
<td>-.059</td>
</tr>
<tr>
<td>R4 Internet Websites andor Blogs/</td>
<td>.066</td>
<td>.593</td>
<td>.147</td>
<td>.174</td>
<td>.073</td>
<td>.004</td>
</tr>
<tr>
<td>SS3 MT Conference Social Gatherings</td>
<td>.093</td>
<td>.590</td>
<td>.325</td>
<td>.035</td>
<td>.087</td>
<td>.096</td>
</tr>
<tr>
<td>SS6 Non-prof. Group Chats on the Internet</td>
<td>.408</td>
<td>.510</td>
<td>-.048</td>
<td>.048</td>
<td>.106</td>
<td>.009</td>
</tr>
<tr>
<td>R5 Non internet Media (newspapers, popular press)</td>
<td>.252</td>
<td>.424</td>
<td>.084</td>
<td>.264</td>
<td>.055</td>
<td>.030</td>
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<tr>
<td>PD5 Clinical Session MT Conference</td>
<td>.135</td>
<td>.301</td>
<td>.766</td>
<td>-.054</td>
<td>.030</td>
<td>-.019</td>
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<tr>
<td>PD3 MT Off Job Site Prof. Dev.</td>
<td>.237</td>
<td>.113</td>
<td>.584</td>
<td>.262</td>
<td>.080</td>
<td>-.050</td>
</tr>
<tr>
<td>PD1 MT On Job Site Prof. Dev.</td>
<td>.401</td>
<td>.086</td>
<td>.549</td>
<td>-.004</td>
<td>.103</td>
<td>.108</td>
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<tr>
<td>PD9 CMTE sessions</td>
<td>.102</td>
<td>.355</td>
<td>.504</td>
<td>.115</td>
<td>.111</td>
<td>-.017</td>
</tr>
<tr>
<td>PD6 Research Session MT Conference</td>
<td>.293</td>
<td>.274</td>
<td>.470</td>
<td>.208</td>
<td>-.023</td>
<td>.130</td>
</tr>
<tr>
<td>CP3 Adapt Observed Interventions</td>
<td>.103</td>
<td>.197</td>
<td>.386</td>
<td>.150</td>
<td>.347</td>
<td>.217</td>
</tr>
<tr>
<td>CP1 Use Created Interventions</td>
<td>.133</td>
<td>-.015</td>
<td>.257</td>
<td>.106</td>
<td>.069</td>
<td>.029</td>
</tr>
<tr>
<td>R1 MT Journals Research</td>
<td>.004</td>
<td>.184</td>
<td>.177</td>
<td>.810</td>
<td>.082</td>
<td>.084</td>
</tr>
<tr>
<td>R2 Non MT Journals Research</td>
<td>.326</td>
<td>.102</td>
<td>.009</td>
<td>.674</td>
<td>-.014</td>
<td>.031</td>
</tr>
<tr>
<td>R3 MT Journals non Research</td>
<td>.126</td>
<td>.177</td>
<td>.396</td>
<td>.662</td>
<td>.055</td>
<td>-.034</td>
</tr>
<tr>
<td>R7 MT Textbooks</td>
<td>.171</td>
<td>.019</td>
<td>.134</td>
<td>.605</td>
<td>.073</td>
<td>.083</td>
</tr>
<tr>
<td>R8 Non MT Textbooks</td>
<td>.483</td>
<td>.100</td>
<td>-.034</td>
<td>.497</td>
<td>.019</td>
<td>-.034</td>
</tr>
<tr>
<td>ACT2 Grad Classes</td>
<td>.066</td>
<td>-.076</td>
<td>-.002</td>
<td>.280</td>
<td>.122</td>
<td>.120</td>
</tr>
<tr>
<td>S1 Use Observed MT Supervisor Interventions</td>
<td>.056</td>
<td>.091</td>
<td>.060</td>
<td>.094</td>
<td>.797</td>
<td>.202</td>
</tr>
<tr>
<td>S2 Adapt Observed MT Supervisor Intervention</td>
<td>.086</td>
<td>.134</td>
<td>.160</td>
<td>.116</td>
<td>.791</td>
<td>.223</td>
</tr>
</tbody>
</table>
Table 35: continued

| CP2 Use Observed Interventions | .036 | .083 | .284 | -.157 | .371 | .314 |
| ACT3 Pre-Internship Clinical   | -.013 | .007 | -.021 | .163 | .161 | **.729** |
| ACT4 Internship Clinical       | -.011 | -.127 | -.012 | .045 | .144 | **.709** |
| ACT1 UG Classes                | .117 | .130 | .091 | .053 | .069 | **.700** |

Notes: Extraction Method: Principal Axis Factoring; Rotation Method: Varimax with Kaiser Normalization. a; a. Rotation converged in 7 iterations.

**Item Loading Results Summary**

EFA revealed that some items in predetermined scales loaded well together and others did not. It should be noted that the TRR scale did show to be a relatively strong scale in the reliability testing in the pilot as well as during reliability and factor analysis testing in actual study. Also, non TRR scale items loaded with different items in different factors or loaded in one or more factors. Also, there were items that loaded with 2 or more factors. For example, non-music therapy texts, loaded with Theory and Research Readings and with other items related to non-music therapy related activities, indicating that the Source of Knowledge could be non-music therapy related activities. Taking into account the factor loadings from this data and adjusting items based on item analysis is highly suggested before replicating.

Overall, professional development items not related to a music therapy conference and supervision items not experienced with a music therapist loaded together as one factor. Four professional development items that were specific to music therapy conferences, on and off job site Music Therapy professional development and CMTE professional development loaded together.
While items related to the use of the Internet were dispersed amongst social situations and non-theory and non-research readings, those items loaded together. EFA indicated that none of the items in the clinical practice items scale worked together to form a factor, nor loaded with any other factor (see Table 35). Academic and clinical training items for undergraduate classes, pre-internship clinical and internship clinical loaded together. It was found that all the items in the Theory and Research Readings scale loaded together, however non-Music Therapy texts also loaded well with non-Music Therapy professional development and non-Music Therapy supervision.

**Continued Study of Scale Development**

Based on the written responses of the participants in the study, there were several questions and items that need further revision if this study is replicated. Respondents indicated needing further clarification and definition of the choice Eclectic as a Philosophical Orientation item. Comments also indicated that there should have been more combinations for work setting. The word keyboard was questioned by a respondent indicating that an acoustic piano is not a keyboard, which is considered an electronic instrument. It is suggested for future use of this questionnaire that piano or keyboard replace the word keyboard.

For one of the PD questions related to non-music therapy training, the rating scale of most of the time was inadvertently kept in. Several respondents indicated that the questionnaire needed to have NA response choices. The intent was that the never response would be the appropriate selection if the item was not applicable to
the respondent. For future research, it may be necessary to provide instructions that the respondent should select never if the question does not apply. The researcher also inadvertently left out the demographic Master plus equivalency, therefore this demographic was not considered separately in the education-level analysis. It is expected that respondents who were in this group selected Masters as the highest level attained. Therefore, those two groups are not differentiated in this question.

The scale development procedures for this study did not allow for full review of the validity of the data and reliability of the scale and depth of item analysis, due to small sample size and the lack of time and resources to use focus groups as part of the scale development process (DeVellis, 2012; Halkier, 2010; Massey, 2011). Future development of this questionnaire, including conducting focus groups (Massey, 2011) as well further item analysis and distributing the questionnaire again, would be required before distributing it again in order to have full confidence in the results. At this point, the instrument is not completely validated.
Chapter 5: Results

The purpose of this study was to describe how often a random sample of currently practicing board-certified music therapists chose seven Sources of Knowledge (SoK) to help inform their music intervention clinical decisions. After performing scale development pilot procedures, the SoK questionnaire (see Appendix F) was distributed by email to a random sample of board certified music therapists from a list provided by the Certification Board for Music Therapists (CBMT).

Sample Participants

A total of 374 participants (18.7% of the sample) accessed the study questionnaire and completed some or all of it. Of the 374 participants, 98 respondents’ cases were removed: 15 accessed the questionnaire but did not answer any questions, 54 reported not currently working as a music therapist, and 29 met non-completion criteria. Non-completion was defined as follows: the respondent did not complete at least 70% of the items of at least one SoK scale. The final total number of respondents whose data was reported and analyzed was 276 participants (13.8%) of the original sample. The researcher visually scanned the data for respondent mistakes. For example, one respondent did not select that she was an ACMT as a current credentials but typed ACMT in the other response for the same question. There were 3 similar-type responses with similar errors fixed.
Scale Data Completion

In order to discern the number of cases who completed at least 70% of the items for each scale, a mean.# was computed on IBM SPSS for each scale item. The scale labels (see Table 36) represent the following Sources of Knowledge in order as they were presented on the questionnaire: Academic and Clinical Training (ACT), Clinical Practice (CP), Supervision (S), Social Situations (SS), Professional Development (PD), Theory/Research Readings (TRR), and Non-Theory/Non-Research Readings (nTnRR).

Table 36

<table>
<thead>
<tr>
<th>Scale</th>
<th># Items</th>
<th>Mean.#</th>
<th>Responses</th>
<th>Missing</th>
<th>% Complete</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>4</td>
<td>Mean.3</td>
<td>275</td>
<td>1</td>
<td>99.6%</td>
</tr>
<tr>
<td>CP</td>
<td>3</td>
<td>Mean.3</td>
<td>267</td>
<td>9</td>
<td>96.7%</td>
</tr>
<tr>
<td>S</td>
<td>4</td>
<td>Mean.3</td>
<td>254</td>
<td>22</td>
<td>92.0%</td>
</tr>
<tr>
<td>SS</td>
<td>6</td>
<td>Mean.5</td>
<td>258</td>
<td>18</td>
<td>93.5%</td>
</tr>
<tr>
<td>PD</td>
<td>10</td>
<td>Mean.7</td>
<td>237</td>
<td>39</td>
<td>85.9%</td>
</tr>
<tr>
<td>TRR</td>
<td>5</td>
<td>Mean.4</td>
<td>231</td>
<td>45</td>
<td>83.7%</td>
</tr>
<tr>
<td>nTnRR</td>
<td>3</td>
<td>Mean.3</td>
<td>231</td>
<td>45</td>
<td>83.7%</td>
</tr>
</tbody>
</table>

The scale items were presented in the order listed on Table 36. There were two instances that there was a noted decrease in case completion, from Clinical Practice (96.7%) to Supervision (92%) and from Social Situations (93.5%) to Professional Development (85.9%). However, after Professional Development, the responses completed stayed consistent at 83.7% for Theory Research Readings and Non-Theory/Non-Research Readings scales (see Table 36).
Sample Demographics Descriptions

**Gender and age.** Total respondents for gender were 230 respondents with 46 missing responses. Of the respondents, 13.9% were male, 85.7% were female and one respondent who indicated other, 0.4%, but did not indicate which gender. This is similar to the AMTA (2015) workforce data demographics, 11.8% were male and 87.6% were female. Total respondents for age were $n = 232$ with 44 missing responses. Age groups ranged from 18-30 to 51-80. The majority of respondents ($n = 78, 33.6\%$) were ages 18-30, followed by ages 31-40, ($n = 64, 27.6\%$); ages 51-80, ($n = 64, 27.6\%$); and ages 41-50 ($n = 26, 11.2\%$), respectively. Comparisons for age from the AMTA (2015) workforce data were ages 18-29 (40.3%); ages 30-39 (24.3%); ages 40-49 (15.0%); ages 50-59 (11.9%); and ages 60 and over (9.3%).

**Years in practice and years since receiving MT-BC.** When asked how many years the respondents had been practicing as a music therapist, 34.4% of the 232 respondents indicated that they had been practicing 1-5 years. The lowest years in practice response was 21-30 years, ($n = 27, 9.8\%$) (see Table 37).
When questioned about the number of years since they received their MT-BC, the majority of the 227 responding indicated that they received their MT-BC within the past 0-5 years ($n = 97, 42.7\%$). The range of years in practice for the respondents was 0-44, with a mean of 10.92 years and standard deviation of 10.63 years (see Figure 1).
Figure 1. Frequency of Years in Practice Since Receiving MT-BC Certification 
(n = 227, M = 10.92 years, SD = 10.63 years)

**Highest level of education.** The levels of education in Music Therapy ranged across all choices with the undergraduate/bachelor’s degree having the most respondents (n = 115, 49.6%) and the doctoral degree having the least number of respondents (n = 8, 3.4%) of the 232 respondents (see Table 38). When asked about their highest level of education not in music therapy, 129 respondents indicated that they had other education not in music therapy with the most in undergraduate non-music therapy degrees (n = 79, 61.2%) and the least in doctoral degrees (n = 5, 3.9%) (see Table 39).
Table 38

<table>
<thead>
<tr>
<th>Highest MT Education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate/Bachelor’s</td>
<td>115</td>
<td>49.6</td>
</tr>
<tr>
<td>Undergraduate plus MT</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>Master’s</td>
<td>77</td>
<td>33.2</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>8</td>
<td>3.4</td>
</tr>
<tr>
<td>Total</td>
<td>232</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td></td>
</tr>
</tbody>
</table>

Table 39

<table>
<thead>
<tr>
<th>Highest MT Education</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate</td>
<td>79</td>
<td>61.2</td>
</tr>
<tr>
<td>Master’s</td>
<td>45</td>
<td>34.9</td>
</tr>
<tr>
<td>Doctoral Degree</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>Total</td>
<td>129</td>
<td>100.0</td>
</tr>
<tr>
<td>Missing</td>
<td>147</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td></td>
</tr>
</tbody>
</table>

Primary work settings and current population work setting. The primary work settings reported by 250 respondents included private practice (31.2%), facility salaried (32.8%), and facility contract (31.2%) with 4.3% of the respondents working both in private practice and facility salaried (see Table 40). When asked about which population-specific facility where they worked, respondents \( n = 211 \) reported community-based facilities with multiple populations as the highest \( n = 71, \ 33.6\% \) followed by medical facilities not for mental health \( n = 63, \ 29.9\% \), mental health facilities \( n = 43, \ 20.4\% \), and education/school facilities \( n = 34, \ 16.1\% \), respectively.
Table 40

<table>
<thead>
<tr>
<th>Primary Work Setting</th>
<th>Current Work Setting</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Practice</td>
<td>78</td>
<td>31.2</td>
<td></td>
</tr>
<tr>
<td>Facility Salaried</td>
<td>82</td>
<td>32.8</td>
<td></td>
</tr>
<tr>
<td>Both PP and FS</td>
<td>12</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>Facility Contract</td>
<td>78</td>
<td>31.2</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>26</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>276</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Current clinical population age.** Respondents were then asked about the ages of the populations that they worked with (if only one age group) and then another question with 2 or more age groups. Total respondents \( n = 112 \) who selected that they only work with one age range of clients, most \( n = 36, 32.1\% \) indicated that they worked with people who are ages 65 and older. The fewest number of respondents indicated that they worked with children birth to 3 years old \( n = 6, 5.4\% \), adults ages 20-29 years \( n = 6, 5.4\% \), and mature adults ages 50-64 years \( n = 6, 5.4\% \). Total respondents \( n = 120 \) who selected that they work with 2 or more age groups, the highest number of respondents \( n = 64, 14.4\% \) indicated that they worked with teens, ages 13-19. The lowest reported for more than one population, were with ages prenatal through age 3 \( n = 29, 6.5\% \).

**Philosophical orientation.** When asked about their primary philosophical orientation, of the total respondents \( n = 184 \) the highest responses reported were humanistic \( n = 56, 30.4\% \) and eclectic \( n = 50, 27.2\% \). Biomedical \( n = 5, 2.7\% \) ranked the lowest. Cognitive-Behavioral had 39 respondents \( 21.2\% \) and Behavioral had 23 responses \( 12.5\% \). Other respondents reported that they may
have mixed (e.g., behavioral and humanistic, or behavioral and biomedical) and several reported specific types including integrative, existential, neurologic, transpersonal, and resource-oriented.

**Professional designations or credentials.** When asked about their current professional designation, 232 respondents (98.7%) selected that they currently hold the MT-BC credential. Two of the respondents reported holding the RMT and one the ACMT designation. When asked if they currently held or in the past held any other credential or designation, 89 respondents indicated that they did with the most \((n = 50, 25.6\%)\) as NMT followed by LCAT \((n = 18, 9.2\%)\). Other credentials or professional designations responses included NMT fellow \((n = 8, 9.0\%)\), HPMT \((n = 3, 3.4\%)\), LMHC \((n = 2, 2.2\%)\), and NICU-MT \((n = 8, 9.0\%)\).

**Primary music instrument in clinical work.** When asked about the primary music instrument they use in clinical practice respondents \((n = 232)\) indicated that most \((n = 116, 50\%)\) use the guitar, followed by voice \((n = 69, 29.7\%)\); keyboard \((n = 27, 11.6\%)\); drum or drums \((n = 11, 4.7\%)\); and ukulele and autoharp \((n = 2, 0.8\%)\). Other responses included used of more than one instrument (e.g., voice and guitar equally) with one respondent saying, “I never use just one instrument.” Other primary instruments listed by respondents included acoustic piano and accordion. When asked about their perception of music ability on their primary music instrument most of the 231 total respondents ranked themselves as good \((n = 122, 52.8\%)\) followed by expert \((n = 58, 25.1\%)\), competent \((n = 40,
17.3%) and adequate \((n = 11, 4.8\%\), with no responses as a beginner/novice (see Figure 2).

![Figure 2. Frequency of Perceived Music Ability on Primary Instruments \((n = 231, SD = 0.786, M = 3.98\)).](image)

**Current AMTA region of residence and AMTA membership status.** When asked in what AMTA region they reside, of the total \((n = 232\) respondents, most of the respondents reported residing in the Mid Atlantic region \((n = 60, 25.9\%\), followed by the Great Lakes Region \((n = 53, 22.8\%\), and then the Western region \((n = 41, 17.7\%\). The smallest AMTA region represented was the New England region \((n = 9, 3.9\%\)). Most of the respondents reported being members of AMTA \((n = 156, 67.2\%\) with 76 respondents \((32.8\%\) not currently members of AMTA.
Item Responses Summary

For Academic and Clinical Training (ACT), respondents rated the item internship the highest ($M = 3.85$) and graduate classes the lowest ($M = 2.90$). Overall, ACT’s scale mean was 3.40. For Clinical Practice Experiences (CP), respondents rated the item clinical experiences created as the highest ($M = 3.82$) and the item clinical experiences observed as the lowest ($M = 3.42$). Overall, CP’s scale mean was ($M = 3.62$ ). For Supervision Experiences (S), respondents rated the item supervision experiences adapted or observed of a music therapy supervisor as the highest ($M = 2.90$) and the item supervision experiences observed of a non-music therapy supervisor as the lowest ($M = 2.36$). Overall, S’s scale mean was $M = 2.66$. For Social Situations (SS), respondents rated the item social situations experiences at music therapy conferences as the highest ($M = 2.76$) and the item non-professional group chats as the lowest ($M = 1.55$). Overall, SS’s scale mean was ($M = 2.18$). For Professional Development (PD) respondents rated the item CMTE professional development experiences as the highest ($M = 3.33$) and the item non-music therapy research conferences as the lowest ($M = 1.93$). Overall, PD’s scale mean was ($M=2.69$). For Theory and Research Readings (TRR), respondents rated the item theory and research readings found in music therapy journals as the highest ($M = 2.76$) and non-music therapy texts as the lowest ($M = 2.17$). Overall, TRR’s scale mean was ($M = 2.48$). For Non-Theory and Non-Research Readings (nTnRR), respondents rated the items non-theory and non-research readings on the Internet web-based blogs as the highest ($M = 2.49$) and the item non-Internet media
as the lowest ($M = 1.61$). Overall, nTnRR’s scale mean was ($M = 1.96$). See Appendix I for histograms which represent the item distribution for each of the scales.

**Research Question 1: Participants’ Use of Sources of Knowledge**

The first research question states this: How often do currently practicing Board Certified Music Therapists’ use each Source of Knowledge when determining what music-based intervention they will use in music therapy clinical practice? To answer this, the 35 items for the Sources of Knowledge were ranked in order by their means from highest to lowest (see Table 41). Sources of Knowledge scale descriptions and correlations with each other (see Tables 42 and 43) are provided as well as how each demographic group on average ranked each Source of Knowledge.

Responses for the top 5 highest mean responses results are internship ($M = 3.85$), therapist created interventions ($M = 3.82$), music therapy supervisor interventions that were adapted by the therapist ($M = 3.61$), music therapy supervisor interventions that were observed by the therapist ($M = 3.42$), and pre-internship clinical experiences ($M = 3.40$). The lowest ranked items included non-internet media ($M = 1.61$) and non-professional group chats on the Internet ($M = 1.55$). The item music therapy research journals ranked 14 out of 35 items ($M = 2.76$).
Table 41

Sources of Knowledge Ranked Items

<table>
<thead>
<tr>
<th>Sources</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>R</th>
<th>S</th>
<th>O</th>
<th>A</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT4 Intern.Clin</td>
<td>3.85</td>
<td>0.876</td>
<td>4</td>
<td>14</td>
<td>63</td>
<td>132</td>
<td>61</td>
<td>274</td>
</tr>
<tr>
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<td>5</td>
<td>4</td>
<td>64</td>
<td>161</td>
<td>38</td>
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<tr>
<td>CP3 Adapt Observed</td>
<td>3.61</td>
<td>0.734</td>
<td>0</td>
<td>17</td>
<td>95</td>
<td>134</td>
<td>23</td>
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<tr>
<td>CP2 Use Observed</td>
<td>3.42</td>
<td>0.689</td>
<td>0</td>
<td>20</td>
<td>128</td>
<td>112</td>
<td>11</td>
<td>271</td>
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<td>ACT3 PreInternClin</td>
<td>3.40</td>
<td>0.862</td>
<td>7</td>
<td>28</td>
<td>109</td>
<td>111</td>
<td>20</td>
<td>275</td>
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<tr>
<td>ACT1 UG Classes</td>
<td>3.34</td>
<td>0.916</td>
<td>13</td>
<td>30</td>
<td>94</td>
<td>121</td>
<td>14</td>
<td>272</td>
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<tr>
<td>PD9 CMTE sessions</td>
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<td>19</td>
<td>17</td>
<td>83</td>
<td>100</td>
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<td>232</td>
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<td>0.969</td>
<td>20</td>
<td>29</td>
<td>98</td>
<td>84</td>
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<td>PD3 MTOff Job Site PD</td>
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<td>1.033</td>
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<td>PD1 MTOn Job Site PD</td>
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<td>1.217</td>
<td>40</td>
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<td>67</td>
<td>88</td>
<td>23</td>
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<td>ACT2 Grad Classes</td>
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<td>44</td>
<td>11</td>
<td>64</td>
<td>83</td>
<td>16</td>
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<tr>
<td>S2 AdapObserMTSup</td>
<td>2.90</td>
<td>1.127</td>
<td>41</td>
<td>44</td>
<td>90</td>
<td>73</td>
<td>13</td>
<td>261</td>
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<tr>
<td>SS3 MT Conf. Social</td>
<td>2.76</td>
<td>0.951</td>
<td>30</td>
<td>63</td>
<td>113</td>
<td>52</td>
<td>4</td>
<td>262</td>
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<tr>
<td>R1 MT Journ Research</td>
<td>2.76</td>
<td>0.889</td>
<td>15</td>
<td>76</td>
<td>96</td>
<td>40</td>
<td>5</td>
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<tr>
<td>S1 Use ObserMT Sup</td>
<td>2.75</td>
<td>1.132</td>
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<td>64</td>
<td>10</td>
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<td>2.73</td>
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<td>5</td>
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<tr>
<td>R3 MT Jour nonRes</td>
<td>2.68</td>
<td>0.913</td>
<td>25</td>
<td>64</td>
<td>100</td>
<td>36</td>
<td>3</td>
<td>228</td>
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<tr>
<td>S4AdapObser nonMT Sup</td>
<td>2.59</td>
<td>1.104</td>
<td>56</td>
<td>55</td>
<td>86</td>
<td>53</td>
<td>5</td>
<td>255</td>
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<td>1.015</td>
<td>47</td>
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<tr>
<td>R7 MT Textbooks</td>
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<td>1.041</td>
<td>44</td>
<td>62</td>
<td>87</td>
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<td>231</td>
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<tr>
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<td>2.52</td>
<td>1.009</td>
<td>48</td>
<td>62</td>
<td>100</td>
<td>31</td>
<td>5</td>
<td>246</td>
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<tr>
<td>R4 Web andor Blogs/</td>
<td>2.49</td>
<td>0.998</td>
<td>43</td>
<td>72</td>
<td>82</td>
<td>31</td>
<td>4</td>
<td>232</td>
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<tr>
<td>SS2 NonConf Social</td>
<td>2.40</td>
<td>0.894</td>
<td>43</td>
<td>100</td>
<td>93</td>
<td>24</td>
<td>2</td>
<td>262</td>
</tr>
<tr>
<td>S3 Observed non MT</td>
<td>2.36</td>
<td>0.984</td>
<td>62</td>
<td>71</td>
<td>93</td>
<td>29</td>
<td>1</td>
<td>256</td>
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<td>PD10 non CMTE</td>
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<td>1.024</td>
<td>60</td>
<td>69</td>
<td>76</td>
<td>24</td>
<td>4</td>
<td>233</td>
</tr>
<tr>
<td>PD7 CinSess nonMT Conf</td>
<td>2.26</td>
<td>0.951</td>
<td>58</td>
<td>78</td>
<td>74</td>
<td>21</td>
<td>1</td>
<td>232</td>
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<tr>
<td>R2 Non MT Jour Res</td>
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<td>0.946</td>
<td>53</td>
<td>92</td>
<td>63</td>
<td>19</td>
<td>3</td>
<td>230</td>
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<tr>
<td>SS1 Social Internet</td>
<td>2.24</td>
<td>0.962</td>
<td>69</td>
<td>86</td>
<td>86</td>
<td>19</td>
<td>3</td>
<td>263</td>
</tr>
<tr>
<td>R8 NonMT Textbooks</td>
<td>2.17</td>
<td>0.957</td>
<td>67</td>
<td>73</td>
<td>74</td>
<td>12</td>
<td>3</td>
<td>229</td>
</tr>
<tr>
<td>SS5 Prof Gr Chats</td>
<td>2.06</td>
<td>0.971</td>
<td>92</td>
<td>80</td>
<td>66</td>
<td>19</td>
<td>1</td>
<td>258</td>
</tr>
<tr>
<td>SS4 NonMT Conf Social</td>
<td>2.05</td>
<td>0.906</td>
<td>88</td>
<td>85</td>
<td>77</td>
<td>10</td>
<td>1</td>
<td>261</td>
</tr>
<tr>
<td>PD8 Res nonMT Conf</td>
<td>1.93</td>
<td>0.939</td>
<td>94</td>
<td>74</td>
<td>48</td>
<td>13</td>
<td>1</td>
<td>230</td>
</tr>
<tr>
<td>R6 Prof. Assoc. News</td>
<td>1.80</td>
<td>0.799</td>
<td>99</td>
<td>81</td>
<td>49</td>
<td>2</td>
<td>0</td>
<td>231</td>
</tr>
<tr>
<td>R5 Non internet Media</td>
<td>1.61</td>
<td>0.719</td>
<td>120</td>
<td>85</td>
<td>26</td>
<td>0</td>
<td>1</td>
<td>232</td>
</tr>
<tr>
<td>SS6 Non-prof. Chats</td>
<td>1.55</td>
<td>0.733</td>
<td>146</td>
<td>72</td>
<td>30</td>
<td>2</td>
<td>0</td>
<td>250</td>
</tr>
</tbody>
</table>
Sources of Knowledge Scale Descriptions

The SoK scale means ranged from the highest \(M = 3.62\) to the lowest at \(M = 1.96\). Clinical Practice (CP), \((M = 3.62)\) and Academic and Clinical Training (ACT), \((M = 3.40)\) were used the frequently followed by Professional Development (PD), \((M = 2.69)\), Supervision (S) \((M = 2.66)\), Theory and Research Readings (TRR), \((M = 2.48)\), Social Situations (SS), \((M = 2.18)\), and Non-Theory Non-Research Readings \((nTnRR)\), \((M = 1.96)\), respectively (see Table 42).

Table 42

<table>
<thead>
<tr>
<th>Scale</th>
<th>N</th>
<th>Mean</th>
<th>Std. Err.</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>275</td>
<td>3.40</td>
<td>0.04</td>
<td>-0.58</td>
<td>0.64</td>
<td>0.570</td>
</tr>
<tr>
<td>CP</td>
<td>267</td>
<td>3.62</td>
<td>0.03</td>
<td>-0.04</td>
<td>0.14</td>
<td>0.621</td>
</tr>
<tr>
<td>S</td>
<td>254</td>
<td>2.66</td>
<td>0.06</td>
<td>-0.18</td>
<td>-0.70</td>
<td>0.822</td>
</tr>
<tr>
<td>SS</td>
<td>258</td>
<td>2.18</td>
<td>0.04</td>
<td>0.28</td>
<td>-0.33</td>
<td>0.791</td>
</tr>
<tr>
<td>PD</td>
<td>237</td>
<td>2.69</td>
<td>0.05</td>
<td>-0.19</td>
<td>0.13</td>
<td>0.877</td>
</tr>
<tr>
<td>TRR</td>
<td>231</td>
<td>2.48</td>
<td>0.05</td>
<td>-0.01</td>
<td>-0.42</td>
<td>0.809</td>
</tr>
<tr>
<td>nTnRR</td>
<td>231</td>
<td>1.96</td>
<td>0.04</td>
<td>0.39</td>
<td>-0.12</td>
<td>0.617</td>
</tr>
</tbody>
</table>

All scales are significantly correlated with each other either at the \((p < 0.01)\) or \((p < 0.05)\) levels except for Academic and Clinical Training with Non-Theory Non-Research Readings scales and Academic and Clinical Training and Social Situations (see Table 43).
Table 43

<table>
<thead>
<tr>
<th>Sources of Knowledge</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>nTnRR</th>
<th>TRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
<td>R</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td>R</td>
<td>.289**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>R</td>
<td>.291**</td>
<td>.362**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>R</td>
<td>.092</td>
<td>.242**</td>
<td>.204**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>R</td>
<td>.150*</td>
<td>.353**</td>
<td>.375**</td>
<td>.444**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>nTnRR</td>
<td>R</td>
<td>.084</td>
<td>.250**</td>
<td>.198**</td>
<td>.620**</td>
<td>.411**</td>
<td>1</td>
</tr>
<tr>
<td>TRR</td>
<td>R</td>
<td>.259**</td>
<td>.212**</td>
<td>.246**</td>
<td>.262**</td>
<td>.445**</td>
<td>.434**</td>
</tr>
</tbody>
</table>

Notes. ** Sig. at the 0.01 level (2-tailed). * Sig. at the 0.05 level (2-tailed).

Overall (see Tables 44-57 and Figures 3-16 that follow), demographic groups ranked the scales Current Clinical Practices (CP) and Academic and Clinical Training (ACT) experiences above other Sources of Knowledge in terms of amount of use when determining music therapy interventions in clinical practice. Non-Theory and Non Research Readings (nTnRR) consistently ranked the lowest across all demographic groups in terms of amount of use.

Gender. It appears the both male and female respondents both ranked their use of the SoK in the same order with CP highest and nTnRR lowest (see Table 44). Although the difference do not seem meaningful, females do on average use CP, SS, and PD more when choosing music interventions in music therapy sessions (see Figure 3).
Table 44

Gender Mean (SD) Comparison Across Scales

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>M</td>
<td>3.38</td>
<td>3.39</td>
<td>2.65</td>
<td>1.77</td>
<td>2.35</td>
<td>2.47</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.80)</td>
<td>(0.62)</td>
<td>(0.86)</td>
<td>(0.62)</td>
<td>(0.82)</td>
<td>(0.74)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[32]</td>
<td>[32]</td>
<td>[31]</td>
<td>[32]</td>
<td>[32]</td>
<td>[32]</td>
</tr>
<tr>
<td>Female</td>
<td>M</td>
<td>3.37</td>
<td>3.65</td>
<td>2.66</td>
<td>2.23</td>
<td>2.74</td>
<td>2.47</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.67)</td>
<td>(0.50)</td>
<td>(0.92)</td>
<td>(0.60)</td>
<td>(0.66)</td>
<td>(0.71)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[196]</td>
<td>[194]</td>
<td>[188]</td>
<td>[195]</td>
<td>[197]</td>
<td>[196]</td>
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</tbody>
</table>

*Figure 3. Sources of Knowledge Scale Means for Gender.*

**Age.** It appears the all 4 groups of ages of respondents ranked their use of the SoK in the same order with CP highest and nTnRR lowest (see Table 45). Also, upon visual scan of Figure 4, there seems no meaningful differences amongst the groups over any of the scales.
Table 45

Age Mean (SD) Comparison Across Scales

<table>
<thead>
<tr>
<th></th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.54</td>
<td>3.62</td>
<td>2.81</td>
<td>2.24</td>
<td>2.58</td>
<td>2.44</td>
<td>1.93</td>
</tr>
<tr>
<td>18-30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>(0.55)</td>
<td>(0.53)</td>
<td>(0.91)</td>
<td>(0.57)</td>
<td>(0.71)</td>
<td>(0.82)</td>
<td>(0.67)</td>
</tr>
<tr>
<td>N</td>
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<td>[73]</td>
<td>[77]</td>
<td>[78]</td>
<td>[78]</td>
<td>[77]</td>
</tr>
<tr>
<td>M</td>
<td>3.49</td>
<td>3.59</td>
<td>2.50</td>
<td>2.12</td>
<td>2.67</td>
<td>2.41</td>
<td>1.84</td>
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<td>31-40</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>(0.64)</td>
<td>(0.47)</td>
<td>(0.84)</td>
<td>(0.66)</td>
<td>(0.68)</td>
<td>(0.64)</td>
<td>(0.58)</td>
</tr>
<tr>
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<td>[62]</td>
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<td>[64]</td>
<td>[64]</td>
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<tr>
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<td>3.60</td>
<td>2.69</td>
<td>2.07</td>
<td>2.71</td>
<td>2.68</td>
<td>1.96</td>
</tr>
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<td>41-50</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>(0.61)</td>
<td>(0.48)</td>
<td>(0.90)</td>
<td>(0.66)</td>
<td>(0.65)</td>
<td>(0.65)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>N</td>
<td>[26]</td>
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<td>[25]</td>
<td>[26]</td>
<td>[26]</td>
<td>[26]</td>
<td>[26]</td>
</tr>
<tr>
<td>M</td>
<td>3.09</td>
<td>3.64</td>
<td>2.63</td>
<td>2.14</td>
<td>2.85</td>
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<td>51-80</td>
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<tr>
<td>SD</td>
<td>(0.84)</td>
<td>(0.59)</td>
<td>(0.95)</td>
<td>(0.61)</td>
<td>(0.69)</td>
<td>(0.67)</td>
<td>(0.61)</td>
</tr>
<tr>
<td>N</td>
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<td>[62]</td>
<td>[64]</td>
<td>[64]</td>
<td>[63]</td>
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</tr>
</tbody>
</table>

Figure 4. Sources of Knowledge Means for Age of Respondents.

**Years in practice.** It appears the all 5 groups of years in practice respondents ranked their use of the SoK in the same order with CP highest and nTnRR lowest (see Table 46). Also, upon visual scan of of the means across SoK, there seems no notable differences amongst the groups over any of the sources
except for group ages 31-50 who appear to use PD more than other groups who have been practicing fewer years (see Figure 5).

Table 46

Years in Practice Mean (SD) Comparison Across Scales

<table>
<thead>
<tr>
<th>Years in Practice</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 SD</td>
<td>3.52</td>
<td>3.55</td>
<td>2.81</td>
<td>2.17</td>
<td>2.51</td>
<td>2.52</td>
<td>1.91</td>
</tr>
<tr>
<td>1-5 N</td>
<td>95</td>
<td>95</td>
<td>90</td>
<td>94</td>
<td>95</td>
<td>95</td>
<td>95</td>
</tr>
<tr>
<td>1-5 M</td>
<td>3.43</td>
<td>3.74</td>
<td>2.49</td>
<td>2.18</td>
<td>2.73</td>
<td>2.30</td>
<td>1.98</td>
</tr>
<tr>
<td>6-10 SD</td>
<td>(0.58)</td>
<td>(0.54)</td>
<td>(0.89)</td>
<td>(0.60)</td>
<td>(0.72)</td>
<td>(0.75)</td>
<td>(0.63)</td>
</tr>
<tr>
<td>6-10 N</td>
<td>40</td>
<td>39</td>
<td>39</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>6-10 M</td>
<td>3.33</td>
<td>3.58</td>
<td>2.52</td>
<td>2.12</td>
<td>2.74</td>
<td>2.39</td>
<td>1.92</td>
</tr>
<tr>
<td>11-20 SD</td>
<td>(0.61)</td>
<td>(0.50)</td>
<td>(0.95)</td>
<td>(0.64)</td>
<td>(0.56)</td>
<td>(0.72)</td>
<td>(0.68)</td>
</tr>
<tr>
<td>11-20 N</td>
<td>41</td>
<td>42</td>
<td>40</td>
<td>41</td>
<td>42</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>11-20 M</td>
<td>3.20</td>
<td>3.68</td>
<td>2.41</td>
<td>2.15</td>
<td>2.75</td>
<td>2.55</td>
<td>2.00</td>
</tr>
<tr>
<td>21-30 SD</td>
<td>(0.82)</td>
<td>(0.62)</td>
<td>(0.92)</td>
<td>(0.73)</td>
<td>(0.65)</td>
<td>(0.67)</td>
<td>(0.65)</td>
</tr>
<tr>
<td>21-30 N</td>
<td>27</td>
<td>25</td>
<td>25</td>
<td>27</td>
<td>27</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>21-30 M</td>
<td>3.07</td>
<td>3.65</td>
<td>2.83</td>
<td>2.17</td>
<td>3.13</td>
<td>2.69</td>
<td>2.12</td>
</tr>
<tr>
<td>31-50 SD</td>
<td>(0.96)</td>
<td>(0.53)</td>
<td>(1.00)</td>
<td>(0.53)</td>
<td>(0.70)</td>
<td>(0.75)</td>
<td>(0.68)</td>
</tr>
<tr>
<td>31-50 N</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
<td>28</td>
</tr>
<tr>
<td>31-50 M</td>
<td>3.07</td>
<td>3.65</td>
<td>2.83</td>
<td>2.17</td>
<td>3.13</td>
<td>2.69</td>
<td>2.12</td>
</tr>
</tbody>
</table>

Figure 5. Sources of Knowledge Means for Years in Practice.

**Years since receiving MT-BC.** It appears the all 5 groups of years since receiving their MT-BC respondents ranked their use of the SoK in the same order
with CP highest and SS and nTnRR at the lowest (see Table 47). Also, upon visual scan of the means across SoK, there seems no notable differences amongst the groups over any of the sources except for group ages 31-50 who appear to use PD more than those who have not had their MT-BC as long (see Figure 6).

**Table 47**

<table>
<thead>
<tr>
<th>Years Since Receiving</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>0-5</td>
<td>3.52</td>
<td>(0.58)</td>
<td>3.54</td>
<td>(0.54)</td>
<td>2.77</td>
<td>(0.94)</td>
<td>2.15</td>
</tr>
<tr>
<td>6-10</td>
<td>3.41</td>
<td>(0.66)</td>
<td>3.75</td>
<td>(0.49)</td>
<td>2.55</td>
<td>(0.90)</td>
<td>2.20</td>
</tr>
<tr>
<td>11-20</td>
<td>3.32</td>
<td>(0.56)</td>
<td>3.59</td>
<td>(0.42)</td>
<td>2.49</td>
<td>(0.73)</td>
<td>2.17</td>
</tr>
<tr>
<td>21-30</td>
<td>3.16</td>
<td>(0.87)</td>
<td>3.78</td>
<td>(0.63)</td>
<td>2.63</td>
<td>(0.96)</td>
<td>2.12</td>
</tr>
<tr>
<td>31-50</td>
<td>2.97</td>
<td>(1.08)</td>
<td>3.50</td>
<td>(0.50)</td>
<td>2.71</td>
<td>(1.13)</td>
<td>2.02</td>
</tr>
<tr>
<td>31-50</td>
<td>2.97</td>
<td>(1.08)</td>
<td>3.50</td>
<td>(0.50)</td>
<td>2.71</td>
<td>(1.13)</td>
<td>2.02</td>
</tr>
<tr>
<td>31-50</td>
<td>2.97</td>
<td>(1.08)</td>
<td>3.50</td>
<td>(0.50)</td>
<td>2.71</td>
<td>(1.13)</td>
<td>2.02</td>
</tr>
</tbody>
</table>
Figure 6. Sources of Knowledge Means for Years Since Receiving MT-BC.

**Highest MT education degree attained.** It appears the all 4 groups of highest Music Therapy education degree attained respondents ranked their use of the SoK in the same order with CP highest and SS and nTnRR at the lowest (see Table 48). Also, upon visual scan of the means across SoK, there seems no notable differences amongst the groups over any of the sources except slight differences with those with only undergraduate degrees use SS sources more than the other groups and those with doctorates use TRR more than other groups (see Figure 7).
Table 48

Highest Music Therapy Education Degree Attained Mean (SD) Across Scales

<table>
<thead>
<tr>
<th>Degree Attained</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergrad</td>
<td>M</td>
<td>3.41</td>
<td>3.67</td>
<td>2.74</td>
<td>2.31</td>
<td>2.76</td>
<td>2.43</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.62)</td>
<td>(0.51)</td>
<td>(0.86)</td>
<td>(0.61)</td>
<td>(0.71)</td>
<td>(0.78)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[115]</td>
<td>[115]</td>
<td>[108]</td>
<td>[113]</td>
<td>[115]</td>
<td>[115]</td>
</tr>
<tr>
<td>Under plus Equiv.</td>
<td>M</td>
<td>3.42</td>
<td>3.60</td>
<td>2.61</td>
<td>2.06</td>
<td>2.62</td>
<td>2.41</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.69)</td>
<td>(0.58)</td>
<td>(0.88)</td>
<td>(0.55)</td>
<td>(0.59)</td>
<td>(0.49)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[31]</td>
<td>[32]</td>
<td>[32]</td>
<td>[32]</td>
<td>[32]</td>
<td>[32]</td>
</tr>
<tr>
<td>Master’s</td>
<td>M</td>
<td>3.43</td>
<td>3.56</td>
<td>2.60</td>
<td>2.03</td>
<td>2.65</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.63)</td>
<td>(0.49)</td>
<td>(0.96)</td>
<td>(0.59)</td>
<td>(0.67)</td>
<td>(0.67)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[77]</td>
<td>[75]</td>
<td>[75]</td>
<td>[77]</td>
<td>[77]</td>
<td>[77]</td>
</tr>
<tr>
<td>Doctorate</td>
<td>M</td>
<td>2.19</td>
<td>3.28</td>
<td>2.24</td>
<td>1.77</td>
<td>2.27</td>
<td>2.08</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(1.12)</td>
<td>(0.75)</td>
<td>(0.96)</td>
<td>(0.71)</td>
<td>(0.95)</td>
<td>(0.74)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[8]</td>
<td>[7]</td>
<td>[7]</td>
<td>[8]</td>
<td>[8]</td>
<td>[7]</td>
</tr>
</tbody>
</table>

Figure 7. Sources of Knowledge Means for Highest Music Therapy Education Degree Attained.

**Highest non-MT education mean.** It appears the Undergraduate and Masters groups of highest non-Music Therapy education degree attained respondents ranked their use of the SoK in the same order with CP highest and SS
and nTnRR at the lowest (see Table 49). Also, upon visual scan of the means across SoK, there seems notable differences between those with doctorates and those with masters and undergraduates particularly with the ACT, S, PD, TRR, and nTnRR (see Figure 8).

Table 49

| Highest Non Music Therapy Education Mean (SD) Comparison Across Scales |
|------------------------|--------|--------|--------|--------|--------|--------|--------|
|                        | M      | SD     | N      | M      | SD     | N      | M      | SD     | N      | M      | SD     | N      | M      | SD     | N      |
|                        | ACT    | CP     | S      | SS     | PD     | TRR    | nTnRR  |
| Undergraduate          | 3.44   | 3.49   | 2.59   | 2.15   | 2.51   | 2.39   | 1.92   |
| Masters                | 3.38   | 3.75   | 2.55   | 2.06   | 2.91   | 2.70   | 1.96   |
| Doctorate              | 3.90   | 3.67   | 3.40   | 2.20   | 3.26   | 3.08   | 2.20   |
|                        | [79]   | [78]   | [77]   | [79]   | [79]   | [79]   | [79]   |
|                        | [44]   | [45]   | [42]   | [45]   | [45]   | [45]   | [45]   |
| Figure 8. Sources of Knowledge Means for Highest Non-Music Therapy Education Degree.
**Primary work setting.** It appears that all 4 groups of primary work setting ranked the SoK in the same order with CP highest and nTnRR at the lowest (see Table 50). Also, upon visual scan, there seems no notable differences amongst the groups over any of the scales (see Figure 9).

Table 50

<table>
<thead>
<tr>
<th>Primary Work Setting Mean (SD) Comparison Across Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
</tr>
<tr>
<td>Private Practice</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>Salaried</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>PrivPract</td>
</tr>
<tr>
<td>PrivPract</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Salaried</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Facility</td>
</tr>
<tr>
<td>Hourly</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>

*Figure 9. Sources of Knowledge Means for Primary Work Setting.*
**Population facility.** It appears that 3 of the population-specific facility groups ranked the SoK in the same order with CP highest and nTnRR at the lowest (see Table 51). Respondents from the Education/School group, on average, ranked S as the most used SoK with CP and ACT following. Upon visual scan there seems no other notable differences amongst the groups over any of the scales (see Figure 10).

Table 51

<table>
<thead>
<tr>
<th>Population Facility Mean (SD) Comparison Across Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Mental Health</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Education/School</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>Medical</td>
</tr>
<tr>
<td>Facilities not Mental Health</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
</tbody>
</table>
Figure 10. Sources of Knowledge Means for Primary Work Setting

**Population by age (if 1 only).** It appears that the 7 or 8 population age groups respondents overall ranked the SoK in the same order with either ACT or CP highest and SS or nTnRR at the lowest (see Table 52). Respondents from the Education/School group, on average, ranked S as the most used SoK with CP and ACT following. Upon visual scan there seems no other notable differences amongst the groups across the scales except that those who work with young adults appear to use TRR more than other groups (see Figure 11).
Table 52

Population Age Mean (SD) Comparison Across Scales

<table>
<thead>
<tr>
<th>Age Group</th>
<th>ACT M</th>
<th>ACT SD</th>
<th>CP M</th>
<th>CP SD</th>
<th>S M</th>
<th>S SD</th>
<th>SS M</th>
<th>SS SD</th>
<th>PD M</th>
<th>PD SD</th>
<th>TRR M</th>
<th>TRR SD</th>
<th>nTnRR M</th>
<th>nTnRR SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants (b-3)</td>
<td>3.65</td>
<td>0.42</td>
<td>3.89</td>
<td>0.45</td>
<td>3.27</td>
<td>0.28</td>
<td>2.23</td>
<td>0.61</td>
<td>2.91</td>
<td>0.71</td>
<td>2.37</td>
<td>0.46</td>
<td>2.00</td>
<td></td>
</tr>
<tr>
<td>Children (4-7)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre teens (8-12)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teens (13-19)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Young Adults (20-29)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults (30-49)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mature Adults (50-64)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seniors (65+)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Philosophical orientation. It appears that 4 of the 5 philosophical orientation group respondents overall ranked the SoK in the same order with either CP highest and SS or nTnRR at the lowest (see Table 53). Those with a psychodynamic orientation ranked TRR over PD. Upon visual scan there seems no other notable differences amongst the groups over any of the scales except that those who reported being primarily behaviorally oriented use TRR less that the than other groups and those with psychodynamic orientation use S and TRR more that the other groups (see Figure 12).
### Table 53

<table>
<thead>
<tr>
<th>Philosophical Orientation Mean (SD) Comparison Across Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACT</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>M</td>
</tr>
<tr>
<td>SD</td>
</tr>
</tbody>
</table>

**Figure 12. Sources of Knowledge Means for Philosophical Orientation**

- **Primary instrument.** It appears that 4 of the 5 primary instrument group respondents overall ranked the SoK in the same order with either CP highest and SS
or nTnRR at the lowest (see Table 54). Those who chose guitar as a primary instrument ranked S as their most used SoK with CP and ACT following. Upon visual scan there seems no other notable differences amongst the groups over any of the remaining scales (see Figure 13).

Table 54

<table>
<thead>
<tr>
<th>Primary Instrument</th>
<th>Mean (SD)</th>
<th>Comparison Across Scales</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ACT</td>
<td>CP</td>
</tr>
<tr>
<td>Keyboard</td>
<td>M</td>
<td>3.54</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[27]</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3.42</td>
</tr>
<tr>
<td>Guitar</td>
<td>SD</td>
<td>(0.70)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[116]</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3.41</td>
</tr>
<tr>
<td>Voice</td>
<td>SD</td>
<td>(0.68)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[68]</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2.95</td>
</tr>
<tr>
<td>Drums</td>
<td>SD</td>
<td>(0.49)</td>
</tr>
</tbody>
</table>
Perception of musical ability on primary instrument. Overall, there seemed no noticeable differences in perception of music ability groups. They ranked the SoK in the same order with CP highest and SS or nTnRR at the lowest (see Table 55). Upon visual scan there seems no other notable differences amongst the groups over any of the remaining scales except those who reported being adequate on their primary instrument on average had a lower mean for TRR that the other PMA groups (see Figure 14).
Table 55

Perception of Musical Ability on Primary Instr. Mean (SD) Across Scales

<table>
<thead>
<tr>
<th>Adequate</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.18</td>
<td>3.76</td>
<td>2.79</td>
<td>2.09</td>
<td>2.53</td>
<td>2.16</td>
<td>1.91</td>
</tr>
<tr>
<td>SD</td>
<td>(0.55)</td>
<td>(0.65)</td>
<td>(0.97)</td>
<td>(0.82)</td>
<td>(1.00)</td>
<td>(0.76)</td>
<td>(0.65)</td>
</tr>
<tr>
<td>Competent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.30</td>
<td>3.68</td>
<td>2.73</td>
<td>2.22</td>
<td>2.68</td>
<td>2.51</td>
<td>2.04</td>
</tr>
<tr>
<td>SD</td>
<td>(0.62)</td>
<td>(0.59)</td>
<td>(0.96)</td>
<td>(0.66)</td>
<td>(0.71)</td>
<td>(0.77)</td>
<td>(0.71)</td>
</tr>
<tr>
<td>N</td>
<td>[40]</td>
<td>[40]</td>
<td>[37]</td>
<td>[39]</td>
<td>[40]</td>
<td>[40]</td>
<td>[40]</td>
</tr>
<tr>
<td>Good</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.38</td>
<td>3.59</td>
<td>2.62</td>
<td>2.21</td>
<td>2.71</td>
<td>2.50</td>
<td>1.96</td>
</tr>
<tr>
<td>SD</td>
<td>(0.69)</td>
<td>(0.46)</td>
<td>(0.95)</td>
<td>(0.58)</td>
<td>(0.65)</td>
<td>(0.66)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>N</td>
<td>[122]</td>
<td>[120]</td>
<td>[117]</td>
<td>[121]</td>
<td>[122]</td>
<td>[122]</td>
<td>[121]</td>
</tr>
<tr>
<td>Expert</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>3.46</td>
<td>3.59</td>
<td>2.67</td>
<td>2.05</td>
<td>2.72</td>
<td>2.49</td>
<td>1.91</td>
</tr>
<tr>
<td>SD</td>
<td>(0.76)</td>
<td>(0.58)</td>
<td>(0.77)</td>
<td>(0.61)</td>
<td>(0.70)</td>
<td>(0.79)</td>
<td>(0.64)</td>
</tr>
<tr>
<td>N</td>
<td>[58]</td>
<td>[58]</td>
<td>[57]</td>
<td>[58]</td>
<td>[58]</td>
<td>[58]</td>
<td>[58]</td>
</tr>
</tbody>
</table>

Figure 14. Sources of Knowledge Means for Perceived Music Ability on Primary Instrument

AMTA region of residence. Overall, there seemed no noticeable differences in SoK in groups based on region of residence, except the New England region ranked TRR above PD (see Figure 15). The rest of the 6 groups ranked the SoK in the same order with CP highest and SS or nTnRR at the lowest (see Table 56).
Table 56

AMTA Region of Residence Mean (SD) Comparison Across Scales

<table>
<thead>
<tr>
<th>Region</th>
<th>ACT M (SD)</th>
<th>CP M (SD)</th>
<th>S M (SD)</th>
<th>SS M (SD)</th>
<th>PD M (SD)</th>
<th>TRR M (SD)</th>
<th>nTnRR M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Great Lakes</td>
<td>3.37 (0.68)</td>
<td>3.65 (0.46)</td>
<td>2.57 (0.88)</td>
<td>2.21 (0.60)</td>
<td>2.90 (0.69)</td>
<td>2.48 (0.70)</td>
<td>2.00 (0.61)</td>
</tr>
<tr>
<td>Mid-Atlantic</td>
<td>3.32 (0.78)</td>
<td>3.54 (0.51)</td>
<td>2.47 (0.92)</td>
<td>2.05 (0.62)</td>
<td>2.51 (0.67)</td>
<td>2.51 (0.66)</td>
<td>1.86 (0.59)</td>
</tr>
<tr>
<td>Midwestern</td>
<td>3.51 (0.72)</td>
<td>3.72 (0.69)</td>
<td>2.62 (0.81)</td>
<td>2.11 (0.62)</td>
<td>2.49 (0.67)</td>
<td>2.29 (0.66)</td>
<td>1.74 (0.51)</td>
</tr>
<tr>
<td>New England</td>
<td>3.57 (0.63)</td>
<td>3.81 (0.53)</td>
<td>2.92 (0.66)</td>
<td>2.30 (0.85)</td>
<td>2.94 (0.58)</td>
<td>3.00 (0.72)</td>
<td>2.37 (0.84)</td>
</tr>
<tr>
<td>Southeastern</td>
<td>3.37 (0.66)</td>
<td>3.45 (0.58)</td>
<td>2.65 (0.88)</td>
<td>2.08 (0.51)</td>
<td>2.69 (0.67)</td>
<td>2.65 (0.82)</td>
<td>2.01 (0.82)</td>
</tr>
<tr>
<td>Southwestern</td>
<td>3.33 (0.52)</td>
<td>3.70 (0.39)</td>
<td>2.55 (0.88)</td>
<td>2.34 (0.73)</td>
<td>2.65 (0.70)</td>
<td>2.35 (0.67)</td>
<td>2.06 (0.72)</td>
</tr>
<tr>
<td>Western</td>
<td>3.38 (0.69)</td>
<td>3.63 (0.56)</td>
<td>2.98 (0.97)</td>
<td>2.23 (0.60)</td>
<td>2.74 (0.79)</td>
<td>2.49 (0.78)</td>
<td>2.02 (0.61)</td>
</tr>
</tbody>
</table>

Figure 15. Sources of Knowledge Means for AMTA Region of Residence
**AMTA current member status.** Overall, there were noticeable differences in how the two groups, members and non-members of AMTA ranked their SoK use. Groups ranked their used in the same order with CP as the most used and SS or nTnRR the least used (see Table 57). Upon visual scan there seems no other notable differences amongst the groups over any of the remaining scales (see Figure 16).

Table 57

<table>
<thead>
<tr>
<th>Current AMTA Member Mean (SD) Comparison Across Scales</th>
<th>ACT</th>
<th>CP</th>
<th>S</th>
<th>SS</th>
<th>PD</th>
<th>TRR</th>
<th>nTnRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>M</td>
<td>3.36</td>
<td>3.63</td>
<td>2.60</td>
<td>2.15</td>
<td>2.74</td>
<td>2.53</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.71)</td>
<td>(0.55)</td>
<td>(0.88)</td>
<td>(0.61)</td>
<td>(0.66)</td>
<td>(0.70)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[156]</td>
<td>[155]</td>
<td>[151]</td>
<td>[156]</td>
<td>[156]</td>
<td>[156]</td>
</tr>
<tr>
<td>No</td>
<td>M</td>
<td>3.42</td>
<td>3.58</td>
<td>2.78</td>
<td>2.19</td>
<td>2.59</td>
<td>2.39</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>(0.64)</td>
<td>(0.47)</td>
<td>(0.94)</td>
<td>(0.63)</td>
<td>(0.75)</td>
<td>(0.74)</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>[75]</td>
<td>[74]</td>
<td>[71]</td>
<td>[74]</td>
<td>[76]</td>
<td>[75]</td>
</tr>
</tbody>
</table>

**Figure 16.** Sources of Knowledge Means for AMTA Membership.
Research Question 2: Differences in Groups Using Theory and Research Readings

The second research question was as follows: Are there differences in how often Theory and Research Readings are used by each demographic group of currently practicing Board Certified Music Therapists when determining what music-based intervention they will use in music therapy clinical practice? Demographic groups that were selected based on theoretical justification in the literature included: number of years practicing, level of music therapy education, primary population facility served, and AMTA membership status.

To observe how much variation there was amongst mean scores for the groups within each demographic on how often the Theory and Research Readings (TRR) Source of Knowledge (SoK) was used, the researcher performed a one-way between-subjects ANOVA (Warner, 2008). The null hypothesis stated that there will be no significant difference between the means of the groups. If there was a significant difference in any one of the groups, the researcher rejected the null hypothesis. Results below show statistics of assumption tests of normality and homogeneity of variance and the one-way between-subjects ANOVA results for each demographic variable: number of years practicing, level of music therapy education, primary population facility served, and AMTA membership status. Before running the one-way ANOVA, the researcher verified that the data met the assumptions of the type of data (quantitative), as well as checking for outliers, normal distribution and homogeneity of variance of the data before continuing (Warner, 2008).
**TRR by number of years in practice.** The researcher first checked for outliers and normal distribution of the data for number of years in practice groups (1-5 years, 6-10 years, 11-20 years, 21-30 years, and 31-50 years) of respondents’ use of Theory and Research Readings on a rating scale of 1-5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). When reviewing the data for any outliers, two were found, one case where someone in the years in practice group of years 11-20 rated all items as 4 and one respondent in the years in practice group 31-50 years that rated all items as 1. Outliers were not removed for data analysis. Analysis was run with and without outliers with similar significance results. The Shapiro-Wilk test for data normality indicated statistically significant non-normality for the group, years 1-5 ($SW = .969, p = .024$) (see Table 58). Skewness and kurtosis statistics for the group years in practice 1-5 years revealed acceptable confidence intervals of normality of shape, skewness 95% CI [-0.587, 0.401] and kurtosis 95% CI [-1.52, 0.439]. The one-way ANOVA is also relatively robust to non-normality (Warner, 2008).

Table 58

<table>
<thead>
<tr>
<th>Years in Practice</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5</td>
<td>.969</td>
<td>95</td>
<td>.024</td>
</tr>
<tr>
<td>6-10</td>
<td>.977</td>
<td>40</td>
<td>.583</td>
</tr>
<tr>
<td>11-20</td>
<td>.962</td>
<td>42</td>
<td>.176</td>
</tr>
<tr>
<td>21-30</td>
<td>.984</td>
<td>26</td>
<td>.944</td>
</tr>
<tr>
<td>31-50</td>
<td>.966</td>
<td>28</td>
<td>.470</td>
</tr>
</tbody>
</table>
Levene’s test of homogeneity of variance indicated non-significance \( F(4, 226) = 1.161, p = .329 \), therefore the researcher failed to reject null hypothesis for homogeneity of variances. The researcher then ran the one-way ANOVA test to compare the mean scores on the Theory and Research Readings scale by number of years in practice groups. The overall \( F \) for the one-way ANOVA was not statistically significant \( (F(4, 226) = 1.584, p = .180) \). This corresponded to a very small effect size of eta squared of .03; indicating that about 3% of the variance in Theory and Research Readings was explained by the group membership of number of years practice. The distributions of the means of the groups of TRR by Years in Practice are represented in Table 59 and Figure 17.

<table>
<thead>
<tr>
<th>TRR by Years in Practice</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in Practice Groups</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>1-5</td>
<td>95</td>
<td>2.52</td>
<td>0.75</td>
</tr>
<tr>
<td>6-10</td>
<td>40</td>
<td>2.30</td>
<td>0.72</td>
</tr>
<tr>
<td>11-20</td>
<td>42</td>
<td>2.39</td>
<td>0.60</td>
</tr>
<tr>
<td>21-30</td>
<td>26</td>
<td>2.55</td>
<td>0.67</td>
</tr>
<tr>
<td>31-50</td>
<td>28</td>
<td>2.69</td>
<td>0.75</td>
</tr>
</tbody>
</table>
Figure 17. TRR Mean Across Years In Practice Groups.

**TRR by highest level of Music Therapy education.** The researcher first checked for outliers and normal distribution of the data for the highest level of music therapy education (undergraduate/bachelors degree, undergraduate plus music therapy equivalency, master’s or specialist’s degree, doctoral degree) of respondents’ use of Theory and Research Readings on a rating scale of 1-5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). When reviewing the data for any outliers, no outliers were found on the stem and leaf plot. The Shapiro-Wilk test for data normality indicated statistically significant non-normality for the group, undergraduate/bachelor’s (SW = .975, p = .031) (see Table 60). Skewness and kurtosis statistics for the group undergraduate/bachelors revealed acceptable confidence intervals of normality of shape, skewness 95% CI [-1.158, 0.489] and kurtosis 95% CI [-2.019, 1.217]. The one-way ANOVA is also relatively robust to non-normality (Warner, 2008).
Table 60

Normal Distribution Tests for TRR by Highest Earned Music Therapy Education

<table>
<thead>
<tr>
<th>Highest Earned MT Education</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate/ Bachelor's Degree</td>
<td>.975</td>
<td>115</td>
<td>.031</td>
</tr>
<tr>
<td>Undergraduate plus Music Therapy equivalency</td>
<td>.956</td>
<td>32</td>
<td>.214</td>
</tr>
<tr>
<td>Master's OR Specialist Degree (e.g. MA, EdS)</td>
<td>.971</td>
<td>77</td>
<td>.079</td>
</tr>
<tr>
<td>Doctoral Degree (including Juris Doctor)</td>
<td>.871</td>
<td>7</td>
<td>.188</td>
</tr>
</tbody>
</table>

Levene’s test of homogeneity of variance indicated significance \( F(3, 227) = 4.123, p = .007 \), therefore the researcher rejected the null hypothesis for homogeneity of variances. Due to the variance significance, Welch’s test, a robust test of ANOVA, revealed \( F(3, 27.037) = 2.224, p = .108 \) indicating no significant differences in the means. The distributions of the means of the groups of TRR by Highest MT Education are represented in Table 61 and Figure 18.

Table 61

<table>
<thead>
<tr>
<th>TRR by Highest MT Education</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest MT Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undergrad</td>
<td>115</td>
<td>2.43</td>
<td>0.78</td>
</tr>
<tr>
<td>Under plus Equiv.</td>
<td>32</td>
<td>2.41</td>
<td>0.49</td>
</tr>
<tr>
<td>Master’s</td>
<td>77</td>
<td>2.63</td>
<td>0.67</td>
</tr>
<tr>
<td>Doctorate</td>
<td>7</td>
<td>2.08</td>
<td>0.74</td>
</tr>
</tbody>
</table>
Figure 18. TRR Mean Across Highest MT Education Attainment Groups.

TRR by population facilities. The researcher first checked for outliers and normal distribution of the data for population facilities groups (mental health facilities, education/school facilities, medical facilities not mental health, community based facilities with multiple populations) of respondents’ use of Theory and Research Readings on a rating scale of 1-5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). When reviewing the data for any outliers, no outliers were found on the stem and leaf plot. The Shapiro-Wilk test for data normality indicated no significant differences in the mean scores for any of the groups (see Table 62).
Table 62

Normal Distribution Tests for TRR by Population Facilities Served

<table>
<thead>
<tr>
<th>Population Served</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health Facilities</td>
<td>.986</td>
<td>43</td>
<td>.884</td>
</tr>
<tr>
<td>Education School / Facilities</td>
<td>.973</td>
<td>34</td>
<td>.541</td>
</tr>
<tr>
<td>Medical Facilities not Mental Health</td>
<td>.987</td>
<td>63</td>
<td>.768</td>
</tr>
<tr>
<td>Community Based Facilities Multiple Populations</td>
<td>.982</td>
<td>70</td>
<td>.411</td>
</tr>
</tbody>
</table>

Levene’s test of homogeneity of variance indicated non-significance \( (F(3, 206) = .867, p=.461) \), therefore the researcher failed to reject the null indicating that the data did not significantly vary from each other. The researcher then ran the one-way ANOVA test to compare the mean scores on the Theory and Research Readings scale by the primary population served. The overall \( F \) for the ANOVA was not statistically significant \( F (3, 206) = 1.492, p=.218 \). This corresponded to a very small effect size of eta squared of .02; indicating that approximately 2% of the variance in Theory and Research Readings was predicted by the group membership of the primary population served. The distributions of the means of the groups of TRR by Population Facility Groups are represented in Table 63 and Figure 19.
Table 63

TRR by Population Facility Groups

<table>
<thead>
<tr>
<th>Population Facility</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health</td>
<td>43</td>
<td>2.62</td>
<td>0.76</td>
</tr>
<tr>
<td>Education/School</td>
<td>34</td>
<td>2.30</td>
<td>0.59</td>
</tr>
<tr>
<td>Medical Facilities not Mental Health</td>
<td>63</td>
<td>2.54</td>
<td>0.66</td>
</tr>
<tr>
<td>Community-Based Facilities</td>
<td>70</td>
<td>2.46</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Figure 19. TRR Mean Across Population Facility Groups

**TRR by current AMTA membership status.** The researcher first checked for outliers and normal distribution of the data for AMTA membership status groups (yes, no) of respondents’ use of Theory and Research Readings on a rating scale of 1-5 (1 = never, 2 = rarely, 3 = sometimes, 4 = often, 5 = always). When reviewing the data for any outliers, two outliers were found on the stem and leaf plot. Two respondents who were not AMTA members ranked TRR 4, often, on each of the TRR
items. No outliers were removed from the analysis. The Shapiro-Wilk test for data normality indicated no significant differences in the mean scores for the groups (see Table 64). Skewness and kurtosis statistics revealed acceptable confidence intervals of normality of shape.

Table 64

<table>
<thead>
<tr>
<th>AMTA Member</th>
<th>Statistic</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>.983</td>
<td>156</td>
<td>.057</td>
</tr>
<tr>
<td>No</td>
<td>.973</td>
<td>75</td>
<td>.104</td>
</tr>
</tbody>
</table>

Levene's test of homogeneity of variance indicated non-significance ($F(1, 229) = .257, p=.612$), therefore the researcher failed to reject the null indicating that the data did not significantly vary from each other. The researcher then ran the one-way ANOVA test to compare the mean scores on the Theory and Research Readings scale by the AMTA membership status. The overall $F$ statistic for the ANOVA was not statistically significant ($F(1, 229)= 1.820, p=.179$). This corresponded to a very small effect size of eta squared of .01; indicating that approximately 1% of the variance in Theory and Research Readings was predicted by the groups of AMTA membership status. The distributions of the means of the groups of TRR by AMTA Membership are represented in Table 65 and Figure 20.
Table 65

TRR by AMTA Membership

<table>
<thead>
<tr>
<th>AMTA Member</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>156</td>
<td>2.53</td>
<td>0.70</td>
</tr>
<tr>
<td>No</td>
<td>75</td>
<td>2.39</td>
<td>0.74</td>
</tr>
</tbody>
</table>

Figure 20. TRR Mean Across AMTA Membership Groups.

Supplemental Analyses

In order to gain more information about the validity of the sample responses, a post-study questionnaire was sent to the sample, providing an opportunity for those who had not responded yet to complete the questionnaire. A post-study email was sent to the entire sample 9 weeks after the original email (see Appendix G). The post-study questionnaire had the same questions and items as the study questionnaire except the demographics questions were moved before the scale questions instead of after (see Appendix H). The decision to move the
demographics to the beginning was made based on that many respondents did not complete the demographic questions after the scale data questions during the study.

Fifty-two people accessed the post study questionnaire. Of those, a sample \( (n = 34) \) responses were usable cases. As with the study cases, cases were deleted if they were not currently practicing music therapists \( (n = 12) \) and if the respondent did not complete at least 75% of at least one of the scale items \( (n = 6) \). Once the researcher analyzed the study data, the data from the post-study questionnaire data were then compared to the study data.

**Demographics Comparison to Post Study Data**

The post study sample was similar to the study respondents in several ways. First, there were several demographic groups that ranked their groups the same from highest to lowest mean use. The include gender, age of respondents, years in practice, AMTA membership, highest level non-music therapy education, primary work setting, and philosophical orientation. Other similarities included that both had the majority of respondents who have been an MT-BC for 0-5 years. Most in both groups lived in the Midwestern AMTA region, had the Bachelor’s degree in Music Therapy education, and worked in community-based facilities with multiple populations. The top three primary instruments used in therapy ranked in the same order were guitar, voice, and keyboard respectively. Seniors were the most prevalent population group (if 1 only) for both the study and post study
respondents. The highest percentages of current or past other designations for both groups of respondents were the NMT designation (see Table 66).

Table 66

Comparison Demographics Study Data and Post Study Data

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Groups</th>
<th>Study Data</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Gender (ranked)</td>
<td>Female</td>
<td>197</td>
<td>71.4</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>32</td>
<td>11.6</td>
<td>6</td>
</tr>
<tr>
<td>Age Groups</td>
<td>18-30</td>
<td>78</td>
<td>33.6</td>
<td>11</td>
</tr>
<tr>
<td>(ranked)</td>
<td>31-40</td>
<td>64</td>
<td>27.6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>51-80</td>
<td>64</td>
<td>27.6</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>41-50</td>
<td>26</td>
<td>11.2</td>
<td>7</td>
</tr>
<tr>
<td>Years in Practice</td>
<td>1-5</td>
<td>95</td>
<td>34.4</td>
<td>14</td>
</tr>
<tr>
<td>(ranked)</td>
<td>11-20</td>
<td>42</td>
<td>15.2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>6-10</td>
<td>40</td>
<td>14.5</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>31-50</td>
<td>28</td>
<td>10.1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>21-30</td>
<td>27</td>
<td>9.8</td>
<td>2</td>
</tr>
<tr>
<td>Year Rec.</td>
<td>0-5</td>
<td>97</td>
<td>23.2</td>
<td>15</td>
</tr>
<tr>
<td>MT-BC (not ranked)</td>
<td>6-10</td>
<td>39</td>
<td>26.3</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>11-20</td>
<td>45</td>
<td>10.1</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>21-30</td>
<td>32</td>
<td>3.9</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>31-50</td>
<td>14</td>
<td>9.2</td>
<td>0</td>
</tr>
<tr>
<td>AMTA Region (not ranked)</td>
<td>Great Lakes</td>
<td>53</td>
<td>23.2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>Mid-Atlantic</td>
<td>60</td>
<td>26.3</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Midwestern</td>
<td>23</td>
<td>10.1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>New England</td>
<td>9</td>
<td>3.9</td>
<td>2</td>
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<tr>
<td></td>
<td>Southeastern</td>
<td>21</td>
<td>9.2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Southwestern</td>
<td>21</td>
<td>9.2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Western</td>
<td>41</td>
<td>18.0</td>
<td>5</td>
</tr>
<tr>
<td>AMTA Member (ranked)</td>
<td>Yes</td>
<td>156</td>
<td>67.2</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>76</td>
<td>32.8</td>
<td>14</td>
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Table 66: continued

<table>
<thead>
<tr>
<th>Highest Level MT Ed.</th>
<th>Undergraduate/ Bachelor's Degree</th>
<th>Undergraduate plus Music Therapy equivalency</th>
<th>Master's OR Specialist</th>
<th>Doctoral Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>115</td>
<td>41.7</td>
<td>17</td>
<td>50.0</td>
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<td>32</td>
<td>11.6</td>
<td>11</td>
<td>32.4</td>
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<tr>
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<td></td>
<td>8</td>
<td>2.9</td>
<td>5</td>
<td>14.7</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Highest Level non MT Ed. (ranked)</th>
<th>Undergraduate/ Bachelor's Degree</th>
<th>Master's OR Specialist</th>
<th>Doctoral Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>79</td>
<td>34.3</td>
<td>11</td>
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<td></td>
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<td></td>
</tr>
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<td></td>
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<td>7</td>
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<td>5</td>
<td>2.2</td>
<td>1</td>
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<table>
<thead>
<tr>
<th>Primary Work Setting (ranked)</th>
<th>Salaried</th>
<th>Private Practice</th>
<th>Facility Hourly</th>
<th>Private Practice and Salaried</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82</td>
<td>29.7</td>
<td>11</td>
<td>32.4</td>
</tr>
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<td></td>
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<tr>
<td></td>
<td>78</td>
<td>28.3</td>
<td>8</td>
<td>23.5</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>4.3</td>
<td>3</td>
<td>8.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Population (not ranked)</th>
<th>Mental Health Facilities</th>
<th>Education School/ Medical Facilities not Mental Health</th>
<th>Community-Based Multiple Populations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>43</td>
<td>20.4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>34</td>
<td>16.1</td>
<td>7</td>
</tr>
<tr>
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<td>63</td>
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<td>6</td>
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<tr>
<td></td>
<td>71</td>
<td>33.6</td>
<td>9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Instrument (ranked)</th>
<th>Guitar</th>
<th>Voice</th>
<th>Keyboard</th>
<th>Drum or drums</th>
<th>Ukulele and autoharp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>115</td>
<td>50.0</td>
<td>16</td>
<td>47.1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>69</td>
<td>29.7</td>
<td>9</td>
<td>26.5</td>
<td></td>
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<tr>
<td></td>
<td>27</td>
<td>11.6</td>
<td>5</td>
<td>14.7</td>
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</tr>
<tr>
<td></td>
<td>11</td>
<td>4.7</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.8</td>
<td>0</td>
<td>0.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Population Age if 1 (not ranked)</th>
<th>Prenatal and Infants</th>
<th>Children</th>
<th>Pre Teens</th>
<th>Teens</th>
<th>Young Adults</th>
<th>Adults</th>
<th>Mature Adults</th>
<th>Seniors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>5.4</td>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>19.6</td>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8.9</td>
<td>2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>8.9</td>
<td>2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5.4</td>
<td>2</td>
<td>5.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>14.3</td>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5.4</td>
<td>1</td>
<td>2.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>32.1</td>
<td>5</td>
<td>14.7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 66: continued

<table>
<thead>
<tr>
<th>Population age if more than 1 (not ranked)</th>
<th>Infants/ Young Children</th>
<th>Children</th>
<th>Pre-Teens</th>
<th>Teens</th>
<th>Young Adults</th>
<th>Adults</th>
<th>Mature Adults</th>
<th>Seniors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>27</td>
<td>6.5</td>
<td>4</td>
<td>5.6</td>
<td>59</td>
<td>13.3</td>
<td>12</td>
<td>16.9</td>
</tr>
<tr>
<td></td>
<td>63</td>
<td>14.2</td>
<td>13</td>
<td>18.3</td>
<td>64</td>
<td>14.4</td>
<td>8</td>
<td>11.3</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>13.5</td>
<td>5</td>
<td>7.0</td>
<td>56</td>
<td>12.6</td>
<td>8</td>
<td>11.3</td>
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<tr>
<td></td>
<td>51</td>
<td>12.8</td>
<td>10</td>
<td>14.1</td>
<td>57</td>
<td>11.5</td>
<td>11</td>
<td>15.5</td>
</tr>
</tbody>
</table>

| Philosophical Orientation (ranked)         | Humanistic              | 56       | 31.3      | 11    | 32.4         |
|                                           | Eclectic                | 50       | 27.9      | 10    | 29.4         |
|                                           | Cognitive Behavioral    | 39       | 21.8      | 4     | 11.8         |
|                                           | Behavioral              | 23       | 12.8      | 2     | 5.9          |
|                                           | Psychodynamic           | 11       | 6.1       | 2     | 5.9          |

| Current or Past Other Designation or Credential | Designation MT | 232 | 99.1 | 33 | 97.1 |
| Designation or Credential (not ranked)         | Designation CMT       | 0   | 0.0  | 1  | 2.9  |
|                                               | Designation RMT       | 2   | 0.9  | 0  | 0.0  |
|                                               | Designation ACMT      | 1   | 0.4  | 0  | 0.0  |
|                                               | Designation NMT       | 50  | 56.2 | 6  | 54.5 |
|                                               | Designation NMT Fellow| 8   | 9    | 1  | 9.1  |
|                                               | Designation NRMT      | 0   | 0    | 2  | 18.2 |
|                                               | Designation LCAT      | 18  | 20.2 | 1  | 9.1  |
|                                               | Designation LMHC      | 2   | 2.2  | 1  | 9.1  |
|                                               | NICU-MT                | 8   | 9    | 0  | 0    |
|                                               | HPMT                   | 3   | 3.4  | 0  | 0    |

The scale item that was considered a demographic was self-perceived music ability on the therapist’s primary instrument used in clinical practice (see Table 67).

Table 67

<table>
<thead>
<tr>
<th>Perceived Music Ability Comparisons Study and Post Study</th>
<th>Study Data</th>
<th>Post Study Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td>PMA</td>
<td>231</td>
<td>3.98</td>
</tr>
</tbody>
</table>
Scale and Item Comparisons to Post Study Data

The study data and post study data Sources of Knowledge (SoK) scale means ranked that same from highest to lowest in all SoK: Clinical Practice, Academic and Clinical Training, Professional Development, Supervision, Theory and Research Readings, Social Situations, and Non-Theory Non-Research Readings (see Table 68).

Table 68

<table>
<thead>
<tr>
<th></th>
<th>Study Data</th>
<th></th>
<th></th>
<th>Post Study Data</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>CP</td>
<td>267</td>
<td>3.62</td>
<td>0.54</td>
<td>34</td>
<td>3.48</td>
<td>0.47</td>
</tr>
<tr>
<td>ACT</td>
<td>275</td>
<td>3.40</td>
<td>0.67</td>
<td>33</td>
<td>3.45</td>
<td>0.62</td>
</tr>
<tr>
<td>PD</td>
<td>237</td>
<td>2.69</td>
<td>0.69</td>
<td>32</td>
<td>2.70</td>
<td>0.62</td>
</tr>
<tr>
<td>S</td>
<td>254</td>
<td>2.66</td>
<td>0.92</td>
<td>33</td>
<td>2.54</td>
<td>0.82</td>
</tr>
<tr>
<td>TRR</td>
<td>231</td>
<td>2.43</td>
<td>0.64</td>
<td>31</td>
<td>2.33</td>
<td>0.63</td>
</tr>
<tr>
<td>SS</td>
<td>258</td>
<td>2.18</td>
<td>0.64</td>
<td>34</td>
<td>2.01</td>
<td>0.59</td>
</tr>
<tr>
<td>nTnRR</td>
<td>232</td>
<td>2.14</td>
<td>0.72</td>
<td>30</td>
<td>1.82</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Scale item ranks showed similarity in the study data and post study data responses. Internship clinical experiences and interventions created by the therapist in clinical experience ranked as the top two item SoK for both data sets. Items, pre-internship clinical experiences and adapting observed interventions, both ranked in the top 5 SoK for both data sets. Music Therapy research journals ranked similar (14, 15) for the study data and post study data responses (see Table 69).
Table 69

<table>
<thead>
<tr>
<th>Item Study Data</th>
<th>Rank</th>
<th>N</th>
<th>M</th>
<th>Item Post Study Data</th>
<th>Rank</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship Created Interventions</td>
<td>1</td>
<td>274</td>
<td>3.85</td>
<td>Internship Created Interventions</td>
<td>1</td>
<td>34</td>
<td>4.00</td>
</tr>
<tr>
<td>Adapt/ Observed Interventions</td>
<td>2</td>
<td>272</td>
<td>3.82</td>
<td>Pre-Internship Clinical</td>
<td>2</td>
<td>34</td>
<td>3.62</td>
</tr>
<tr>
<td>Observe Interventions</td>
<td>3</td>
<td>269</td>
<td>3.61</td>
<td>Adapt/ Observe Interventions</td>
<td>3</td>
<td>33</td>
<td>3.55</td>
</tr>
<tr>
<td>Pre-Internship Clinical</td>
<td>4</td>
<td>271</td>
<td>3.42</td>
<td>CMTE Sessions</td>
<td>4</td>
<td>34</td>
<td>3.47</td>
</tr>
<tr>
<td>UG Classes</td>
<td>5</td>
<td>275</td>
<td>3.40</td>
<td>Use Observed Interventions</td>
<td>5</td>
<td>32</td>
<td>3.37</td>
</tr>
<tr>
<td>CMTE sessions</td>
<td>6</td>
<td>272</td>
<td>3.34</td>
<td>MT Off Job Site</td>
<td>6</td>
<td>34</td>
<td>3.35</td>
</tr>
<tr>
<td>MT Journals Research</td>
<td>7</td>
<td>232</td>
<td>3.31</td>
<td>MT Journals Research</td>
<td>7</td>
<td>32</td>
<td>3.28</td>
</tr>
<tr>
<td>MT Journals non-Research</td>
<td>14</td>
<td>262</td>
<td>2.76</td>
<td>TRR Rank</td>
<td>15</td>
<td>31</td>
<td>2.61</td>
</tr>
<tr>
<td>MT Journals non-Research</td>
<td>17</td>
<td>228</td>
<td>2.68</td>
<td></td>
<td>17</td>
<td>31</td>
<td>2.45</td>
</tr>
</tbody>
</table>

Results Summary

Results indicate that the top SoK areas that music therapist respondents used were in the areas of Academic and Clinical Training (ACT) experiences and current Clinical Practice (CP) experiences. Specifically, music therapists indicated that their top ranked SoK was that from internship clinical experiences in the ACT scale and current interventions used in clinical practice in the CP scale. The Theory Research Readings (TRR) ranked 5 of 7 in use as compared to the other SoK scales for both study data and post study data results. Specifically, Music Therapy research journals
ranked 15th with items in the study data. The sample demographics and the scale and item rankings were consistent with post study data results and items rankings.

When using the one-way ANOVA statistical test to observe if there were any differences in means of groups (number of years practicing, highest level of Music Therapy education, primary population served, and AMTA membership status) with the respondents’ use of the Theory and Research Readings (TRR) scale, no statistically significant differences were found in any of the demographic group variables with the TRR scale.
Chapter 6: Conclusions and Recommendations

The results of this study indicate a disconnect with what Sources of Knowledge (SoK) are currently being used by practicing music therapists to inform music intervention choices and what is expected that music therapists will use, research evidence (AMTA & CBMT, 2015). Results from this study indicate that music therapy research evidence was used, on average, rarely to sometimes by the random sample of practicing music therapist respondents. While AMTA allocates resources to publish two nationally distributed Music Therapy journals and to promote activities related to the AMTA Strategic Research Priority (AMTA, 2015a), the results of this study indicate that the resources provided by AMTA and supported by its members are not being utilized by a majority of the respondents. Also, CBMT requires 100 credit hours of professional development (PD), every 5 years, for MT-BC recertification. Results in this study indicate that however PD sources were reported being used, on average, rarely to sometimes (see Table 82). PD experiences, run and managed by the CBMT), and many times very costly to its participants, are not being used to inform what music interventions are being used in therapy. Therefore, the assumption that music therapists are using research evidence to inform their clinical practice is in question based on the findings in this study.

Respondents Use of TRR Item Sources

The most relevant finding of this study was that the majority of music therapists did not report using Music Therapy research journals, nor any theoretical
or research reading, as a primary source when choosing music interventions for their music therapy clinical sessions. Using the rating scale (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always, on average, respondents used Clinical Practice (CP) and Academic and Clinical Training (ACT) SoK sometimes to often when choosing music interventions. On average, respondents used Professional Development (PD), Supervision (S), Theory and Research Readings (TRR), and Social Situations (SS) sources rarely to sometimes. The Non-Theory and Non-Research Readings (nTnRR) source was used, on average, never to rarely (see Table 70 with ranked scales and descriptive statistics).

Table 70

<table>
<thead>
<tr>
<th>Scale Description</th>
<th>N</th>
<th>Rating (min,max)</th>
<th>M</th>
<th>SD</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. CP</td>
<td>267</td>
<td>(2,5.00)</td>
<td>3.62</td>
<td>0.54</td>
<td>-.043</td>
<td>.141</td>
</tr>
<tr>
<td>2. ACT</td>
<td>275</td>
<td>(1,5.00)</td>
<td>3.40</td>
<td>0.67</td>
<td>-.584</td>
<td>.636</td>
</tr>
<tr>
<td>3. PD</td>
<td>237</td>
<td>(1,4.80)</td>
<td>2.69</td>
<td>0.69</td>
<td>-.187</td>
<td>.128</td>
</tr>
<tr>
<td>4. S</td>
<td>254</td>
<td>(1,5.00)</td>
<td>2.66</td>
<td>0.92</td>
<td>-.181</td>
<td>.697</td>
</tr>
<tr>
<td>5. TRR</td>
<td>231</td>
<td>(1,4.40)</td>
<td>2.48</td>
<td>0.72</td>
<td>-.012</td>
<td>.416</td>
</tr>
<tr>
<td>6. SS</td>
<td>258</td>
<td>(1,4.17)</td>
<td>2.18</td>
<td>0.64</td>
<td>.279</td>
<td>-.334</td>
</tr>
<tr>
<td>7. nTnRR</td>
<td>231</td>
<td>(1,4.33)</td>
<td>1.96</td>
<td>0.64</td>
<td>.385</td>
<td>-.122</td>
</tr>
</tbody>
</table>

*Notes.* Refer to the rating scale for the mean statistics (1) never, (2) rarely, (3) sometimes, (4) often, and (5) always.

In reference to specific items in the SoK scales, respondents reported, on average, that music interventions learned at internship in academic and clinical training \((n = 274, M = 3.85)\) was used the most of all items, often to always.
Following internship, the Clinical Practice (CP) source item that was used most often by the respondents, was the therapist-created music interventions in current clinical practice experiences item \( n = 272, M = 3.82 \), equal in mean to the ACT internship item (see Table 72). Another relevant finding was that the item for CP, interventions learned at Music Therapy conference social gatherings \( n = 262, M = 2.76 \), had the same mean as Music Therapy research journals \( n = 262, M = 2.76 \) (see Table 71). This indicates that the respondents, on average, use music interventions that they learned in social gatherings at music therapy conferences, rarely to sometimes, similar to how often they use music interventions they learn about in Music Therapy research journals, rarely to sometimes.
Table 71

Sources of Knowledge Selected Items: Ranked by Means Highest to Lowest

<table>
<thead>
<tr>
<th>Source</th>
<th>Mean</th>
<th>SD</th>
<th>N</th>
<th>R</th>
<th>S</th>
<th>O</th>
<th>A</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Internship</td>
<td>3.85</td>
<td>0.876</td>
<td>4</td>
<td>14</td>
<td>63</td>
<td>132</td>
<td>61</td>
<td>274</td>
</tr>
<tr>
<td>2. Therapist Created Interventions</td>
<td>3.82</td>
<td>0.754</td>
<td>5</td>
<td>4</td>
<td>64</td>
<td>161</td>
<td>38</td>
<td>272</td>
</tr>
<tr>
<td>3. Adapt Observed Interventions</td>
<td>3.61</td>
<td>0.734</td>
<td>0</td>
<td>17</td>
<td>95</td>
<td>134</td>
<td>23</td>
<td>269</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. MT Conference Social Gatherings</td>
<td>2.76</td>
<td>0.951</td>
<td>30</td>
<td>63</td>
<td>113</td>
<td>52</td>
<td>4</td>
<td>262</td>
</tr>
<tr>
<td>14. MT Journals Res.</td>
<td>2.76</td>
<td>0.889</td>
<td>15</td>
<td>76</td>
<td>96</td>
<td>40</td>
<td>5</td>
<td>232</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. MT Journals non Research</td>
<td>2.68</td>
<td>0.913</td>
<td>25</td>
<td>64</td>
<td>100</td>
<td>36</td>
<td>3</td>
<td>228</td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. MT Textbooks</td>
<td>2.55</td>
<td>1.041</td>
<td>44</td>
<td>62</td>
<td>87</td>
<td>31</td>
<td>7</td>
<td>231</td>
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<td>...</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Non internet Media</td>
<td>1.61</td>
<td>0.719</td>
<td>120</td>
<td>85</td>
<td>26</td>
<td>0</td>
<td>1</td>
<td>232</td>
</tr>
<tr>
<td>35. Non-prof. Group Chats on the Internet</td>
<td>1.55</td>
<td>0.733</td>
<td>146</td>
<td>72</td>
<td>30</td>
<td>2</td>
<td>0</td>
<td>250</td>
</tr>
</tbody>
</table>

Notes: The ‘…’ indicates that there are items in between those listed that are not reported in this table. There were a total of 35 items in the SoK questionnaire.

The primary source item in Theory and Research Readings (TRR) reported were Music Therapy research journals and theoretical texts, followed by Music Therapy non-research journal, the Music Therapy theoretical texts (see Table 72). Although the TRR sources are not near the top of the list of most-used sources, those who do use the journals are choosing the journals from the music therapy profession. However, in a profession where research evidence is considered a cornerstone when delivering appropriate treatment (AMTA, 2015e), the knowledge gained that the respondents do not use the TRR source as primary may be of concern to the profession and worth further inquiry.
**Group Membership and the TRR Source**

Another relevant finding was that there were no significant differences in groups who used TRR as a SoK. This does not contradict the current literature in music therapy but provides a different view of utilization of research by practicing music therapists. Waldon (2015) found that educational background and the population work setting were positively correlated with utilization of the research, specifically with accessing the research. While Waldon’s results provide information on research access of certain groups of music therapists, his results do not provide information on if their respondents actually incorporated the research evidence into their clinical practice once they accessed it. However, finding this information was not in the scope of Waldon’s study.

The data from the current study, however, indicates that group membership (years in practice, education level, population-specific work setting, and AMTA membership) are not significantly different between the groups who use TRR as a source of knowledge. Since the TRR source items, specifically the Music Therapy journals items, are currently the primary sources for dissemination of research evidence in music therapy in the United States, gaining more knowledge about which groups are accessing the research may not be as critical as finding out more about how if therapists are incorporating the evidence into their practices.

**Group Membership Compared Across All SoK**

When comparing group membership across all SoK scales, there were notable mean differences related to highest level of education (MT and nonMT),
philosophical orientation, primary instrument used in sessions, perceived music ability, and region of residence. There were also several notable differences in groups for the Supervision scale. Refer to the tables and figures in Chapter 5 for details on groups membership statistics \((n, M, \text{ and } SD)\) across scales.

Currently practicing music therapists in the sample whose highest degree is at an undergraduate level in Music Therapy use Social Situations (SS) more than their peers who have other music therapy degrees, although undergraduates use Theory and Research Readings more than they use SS. Those who have doctorate degrees in Music Therapy use Theory and Research Readings more than their peers with other Music Therapy degrees. At a time when the profession of Music Therapy is considering the impact of moving from Bachelor’s entry to Master’s Level Entry (AMTA, 2015g), information about how people with different levels of education in music therapy use SoK should be investigated further. Further, it was found that those respondents who have a doctorate in another degree besides Music Therapy are using Supervision sources one full mean point more than any other group of highest education attained, MT and nonMT.

Also notable was how different groups used Supervision more than other groups when choosing music-based interventions in music therapy sessions. Groups included those who chose guitar as their primary instrument, worked in an education/school population facility, worked with children ages 4-7, those who identified with a psychodynamic philosophical orientations, and those with a doctorate in a non-Music Therapy degree. See Table 72 for comparison of means
Supervision in music therapy has not been studied that much in recent years, even though much weight is placed on supervision being provided by experienced MT-BCs for pre-professionals and professionals (AMTA, 2014).

Table 72

Comparison of Means Across Select Groups for Supervision

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Groups</th>
<th>Supervision Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Instrument</strong></td>
<td><strong>Guitar</strong></td>
<td>3.69</td>
</tr>
<tr>
<td></td>
<td>Keyboard</td>
<td>2.65</td>
</tr>
<tr>
<td></td>
<td>Voice</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>Drums</td>
<td>2.67</td>
</tr>
<tr>
<td><strong>Philosophical Orientation</strong></td>
<td><strong>Psychodynamic</strong></td>
<td>3.06</td>
</tr>
<tr>
<td></td>
<td>Cognitive/Behavioral</td>
<td>2.61</td>
</tr>
<tr>
<td></td>
<td>Humanistic</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>Eclectic</td>
<td>2.66</td>
</tr>
<tr>
<td></td>
<td>Behavioral</td>
<td>2.37</td>
</tr>
<tr>
<td><strong>Population Served</strong></td>
<td><strong>Children</strong></td>
<td>3.88</td>
</tr>
<tr>
<td></td>
<td>Infants</td>
<td>3.27</td>
</tr>
<tr>
<td></td>
<td>Pre-Teens</td>
<td>2.59</td>
</tr>
<tr>
<td></td>
<td>Teens</td>
<td>2.63</td>
</tr>
<tr>
<td></td>
<td>Young Adults</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td>Adults</td>
<td>3.12</td>
</tr>
<tr>
<td></td>
<td>Mature Adults</td>
<td>3.27</td>
</tr>
<tr>
<td></td>
<td>Seniors</td>
<td>2.46</td>
</tr>
<tr>
<td><strong>Primary Work Setting</strong></td>
<td><strong>Education/School</strong></td>
<td>3.69</td>
</tr>
<tr>
<td></td>
<td>Mental Health</td>
<td>2.50</td>
</tr>
<tr>
<td></td>
<td>Medical</td>
<td>2.62</td>
</tr>
<tr>
<td></td>
<td>Community-Based</td>
<td>2.76</td>
</tr>
<tr>
<td><strong>Highest Education</strong></td>
<td><strong>Doctorate nonMT</strong></td>
<td>3.40</td>
</tr>
<tr>
<td></td>
<td>Undergraduate MT</td>
<td>2.74</td>
</tr>
<tr>
<td></td>
<td>Undergraduate plus Equiv. MT</td>
<td>2.61</td>
</tr>
<tr>
<td></td>
<td>Master’s MT</td>
<td>2.60</td>
</tr>
<tr>
<td></td>
<td>Doctorate MT</td>
<td>2.24</td>
</tr>
<tr>
<td></td>
<td>Undergraduate nonMT</td>
<td>2.59</td>
</tr>
<tr>
<td></td>
<td>Masters nonMT</td>
<td>2.55</td>
</tr>
</tbody>
</table>
Scope

It is important for the readership to understand that the knowledge gained from this study does not speak to if the music therapy interventions used are based on research evidence. In fact, it is suspected that the clinicians learned evidence-based music interventions. For example, the types of experiences learned in an approved academic and clinical training program are based in theory and evidence otherwise they would not be a part of the curriculum. The results of this study only look at how often sources, those places and situations where clinicians seek the knowledge they need in order to make current clinical treatment decisions, in this case sources that inform the music interventions choices, are used by the music therapist. The results of this study do however bring to question how music therapists are staying current with the most recent discoveries of evidence of intervention effectiveness and adjusting what they know from their training to be better in line with current best practices.

Limitations

Sample size. The number of respondents from the random sample ($n = 2,000$) who accessed the questionnaire was lower than expected ($n = 374, 18.7\%$). Of those who accessed the questionnaire, 276 of the respondents (13.8% of the sample) met criteria for completing the questionnaire. Due in part to the low percentage rate of response from the sample and that a larger than expected portion of the sample who did not complete most of demographic section of the study questionnaire, the researcher sent a follow up email with a link to the questionnaire,
making a final request for responses. This post study data questionnaire was reorganized placing the demographic questions at the beginning of the questionnaire followed by the scale item questions. The post study data was analyzed and results were then compared to the study data. There were 34 participants (2% of the sample) who met completion criteria for the post study questionnaire.

The sample sizes for the groups analyzed in the one-way ANOVA were most of the time adequate, based on a medium effect size, Cohen’s $f$ with 5 groups, the researcher needed to have a minimum of 39 participants per group at a power level of 0.8 (Warner, 2008). Population facility groups participants ranged from 34 – 70 in each group. Highest Music Therapy education group participant numbers ranged from 32-115. Participant numbers in groups for years in practice as an MT-BC ranged from 26-95. AMTA membership group participants were 75 and 156.

**Volunteer bias.** According to Heiman (2001), people complete questionnaires because they are motivated to do so because of their interests in the topic or have higher social status and intelligence. Therefore, it is assumed that there was a large group of people, in this case 86.2% of the random sample, who could have answered the questions, but chose not to. The post-study procedures allowed for those in the sample who had not responded previously a chance to complete the questionnaire, therefore providing some information of the validity of the sample data.
**Distribution of emails.** The researcher had limited experience using the Qualtrics software and did not use the email function. While this should not impact the results of the study, to have full disclosure, it is important to report these errors. The emails were distributed through the researcher’s personal computer email system, sending groups of 200 and 500 emails to a random sample of 2,000 potential participants (blind-copied) through the Apple Mail Version 3.2. However, this meant that there was not an accurate way to keep track of which emails were used to accessed Qualtrics and which did not. The researcher emailed all the participants each time for reminder emails.

An inherent problem with online email is that one person could have used different email programs to access the questionnaire more than one time. There is no way of knowing if one person responded to the questionnaire more than one time. Also, on one of the reminder emails, one time the researcher neglected to blind-copy the prospective participants, 200 of the 2,000 emails. This allowed participants to be able to see other participants’ emails in the study. The researcher realized this soon after sending out the email reminder and used the function to unsend the emails, however this did not guarantee that it was not opened by any of the participants.

**Recommendations**

**Dissemination of research evidence and EBMTP knowledge.** In order to fully assess the current state of EBMTP with music therapists, we need a clearer picture of where and how actual sources of knowledge are being used, what of those
sources include music interventions that are based in evidence, and how well these concepts are being taught and practiced. Information is needed on if music interventions used from clinical practice, academic and clinical training, and professional development are based in research evidence as it is defined by AMTA. The profession will then have a better understanding of how to provide necessary resources needed for clinicians to consistently apply evidence-based practice in their clinical sessions.

Consider the following model proposed by the researcher, designed to illustrate areas for future inquiry and program development based on results of this study (see Figure 21). To summarize, this model illustrates the 3 most used SoK by the respondents of the study, Current Clinical Practice ($M = 3.62$), Academic and Clinical Training ($M = 3.40$) and Professional Development ($M = 2.69$). The idea is that we as a profession should target our resources to promote the use of research evidence and promote application of EBMTP to those areas. This could include trainings, program development and recommending standard additions to curriculum and to the domains in the Music Therapy Scope of Practice. The model is named the Music Therapy Clinical Practice, Academic and Clinical Training, and Professional Development (MT-CAP): A Model of Education About Music Therapy Evidence and EBMTP (see Figure 21).
Current clinical practice. According to the results of this study, music therapists, on average, rely on their own clinical practice experiences more than other SoK ($n = 267, M = 3.62$) when choosing the music interventions for their music therapy sessions. The researcher recommends that the profession begin by supporting music therapists’ ability to apply EBMTP where they are, in the session. One idea would be to have music therapists who are knowledgeable about current research evidence and theoretical groundings of music therapy interventions, observe music therapists using interventions in sessions, talk with them on why they chose the intervention that they did, find out if and why they view the intervention as evidence-based, and then offer advice on explaining the theory of their intervention to others and helping them identify evidence if it exists that
supports what they are already doing if they need. It is recommended that the profession gain more knowledge through systematic research about what music interventions music therapists use most often, how they determined what to use, and what research evidence (if any) supports the intervention that they use. It is also recommended that we ask music therapists what they define as evidence so the profession has a better understanding of how music therapists view their own EBMTP.

Further, the profession does not yet know if the evidence in the journals is adequate for what music therapists need. One suggestion is to provide an in-depth systematic review of evidence needed for certain music interventions for specific populations not investigated as of yet. This information could help the profession focus their efforts for research and promote the much-needed generation of evidence for the diverse populations music therapists serve.

**Academic and clinical training.** The music therapy profession needs to take a closer look at the professional competencies related to research methods and evidence-based music therapy practice. The respondents of this study identify music interventions learned in internship on average as the top-ranked SoK item ($n = 273, M = 3.85$). Pre-internship and undergrad classes ranked 5th and 6th ($n = 275, M = 3.40; n = 272, M = 3.34$) respectively. These results reinforce the impact Academic and Clinical Training has on music intervention choices of music therapists in current clinical practice.
The researcher recommends that AMTA focus its efforts on assisting educators and internship directors to provide a way for students to learn how to apply EBMTP based on the current AMTA Standards for Education and Clinical Training (AMTA, 2014) and the AMTA Professional Competencies (AMTA, 2015c). The standards require that music therapy research methods be covered in the music therapy theoretical portion of the curriculum but not in the clinical foundations portion (AMTA, 2014, p. 5). This may imply that these concepts, research methods, evidence in the research, etc. are separate from application in clinical practice.

The AMTA Professional Competencies are organized by areas of practice, which include treatment planning, treatment implementation, and research methods. The following are relevant excerpts from the AMTA Professional Competencies related treatment planning, treatment implementation, followed by research methods competencies (AMTA, 2015c).

17. Treatment Planning

17.1 Select or create music therapy experiences that meet the client’s objectives.

17.2 Formulate goals and objectives for individuals and group therapy based upon assessment findings.

17.5 Select and adapt music consistent with strengths and needs of the client.

17.6 Formulate music therapy strategies for individuals and groups based upon the goals and objectives adopted.
18. Treatment Implementation

18.11 Implement music therapy program according to treatment plan.

25. Research Methods

25.1 Interpret information in the professional research literature.

25.4 Apply selected research findings to clinical practice. (pp. 5, 6 & 8)

Currently, there are no professional competencies that require a student to learn about EBMTP nor is there language in the treatment planning and treatment implementation sections that speak to how the research evidence play a role in how this should happen when selecting music. It is recommended that if the profession wants the music therapist to apply the research evidence in clinical practice, through EBMTP, there needs to be some connection between the areas of learning research methods and treatment planning and implementation. Future research on how the needs of educators and internship directors on connecting research method theory and application in treatment these for students during their academic and clinical training, specifically targeting experiences during internship, is recommended.

Professional development. A Music Therapist – Board Certified (MT-BC) must gain 100 credit hours of music therapy professional development, as specified in the CBMT (2015a) re-certification manual in order to maintain their MT-BC certification. The Board Certification Domains “…defines the body of knowledge that represents competent practice in the profession of music therapy… Continuing Music Therapy Education credits must relate to an area identified in the CBMT
Board Certification Domains” (CBMT, 2015a, p. 4). When scanning the domains looking for items related to research and evidence, three were found that refer to finding research, designing interventions for the music therapy session, and documenting the evidence-based outcomes (CBMT, 2015a).

I. D. Treatment Planning

2. Consult the following in the treatment planning process:
   a) clinical and research literature and other resources.
   b) client’s family, caregivers, or personal network, when appropriate.
   c) other professionals, when appropriate.

10. Design music therapy experiences that address client goals and objectives based on available research; clinical expertise; and the needs, values, and preferences of the client.

III. A. Documentation

7. Provide written documentation that demonstrates evidence-based outcomes related to address goals/interventions. (pp. 1,2,&3)

When creating professional development trainings for music therapists that allow them to gain CMTE credit, the trainer submits a proposal to CBMT for the PD, outlining the goals and objectives for the training, and documenting which of the domain items are addressed and assessed in the training. With these domain items in place for CMTE proposals for PD in music therapy, it is very possible that a therapist could attend a session about finding evidence, designing music therapy experiences based on the available research, and documenting the results. The
profession needs to investigate further how well those who take PD trainings on EBMTP apply it to their settings.

Items that are not clearly delineated in the CBMT domains are how to interpret the literature and how to actually apply the evidence in clinical practice. It is recommended that CBMT review the domains for possible refinement or addition to include understanding and interpreting the literature and applying it. One recommendation would be to add a research domain. It is also recommended that more study focus on how effective the professional development opportunities are for transfer of knowledge to application into clinical practice.

**Further research on music therapists’ sources of knowledge.** As discussed in Chapter 5, Scale Development, the questionnaire was researcher-created and therefore could certainly benefit from further item analysis and scale development procedures. This could include conducting a mixed-method design study, such as a exploratory sequential design (Teddlie & Tashakkori, 2009) where the researcher gathers qualitative data from focus groups about the questionnaire, applies the knowledge gained to refining the questionnaire and then distributes to another random sample of music therapists.

Sources of Knowledge information may be helpful for other help professions. The Nursing profession has explored this extensively and the results have helped informed best practicing in nursing care. Others disciplines such as psychology, social work, speech and language therapy, and education, have studied the barriers to applying evidence in the prospective disciplines but have not yet asked their
professionals if they use the evidence and how. As this questionnaire was adapted from the nursing literature, it could be adapted to be discipline specific for other professions.

**Summary**

The purpose of this study was to provide a breadth of information regarding how often music therapists use various Sources of Knowledge when deciding on music-based interventions in their clinical practice. Results indicated that music therapists draw from their own clinical experiences and clinical experiences, primarily internship, and not the current resources readings in research and non-research journals. Results from this study indicate that it is not only just a question of group membership access and attitude toward research (Hahn, 2013; Waldon, 2015), it is now also a question of if the research evidence that exists is being used.

In order to advocate for Music Therapy services for their clients and make the case that they are operating on current evidence, music therapists must stay current on best practices when using music therapy interventions and the evidence of its effectiveness. If music therapists are not using the research evidence from journals and texts, it is important for the profession to find out why. This may involve identifying areas of evidence that are missing and direct research efforts toward that as well as identifying where clinicians are finding the evidence they are using. The results of this study can potentially be a catalyst for change for the music therapy profession to build a bridge of knowledge from the best available research evidence to use of the research evidence in the music therapy clinical practice.
This results of this study do not provide enough information on the types of interventions that are being used, whether they are based in research evidence or not. Finding out that information is beyond the scope of this study. However, in light of the results that music therapists are not using the journals as a primary source, the profession of Music Therapy must face the possibility that not all music therapists are not staying current when using research evidence-based music interventions. If this is the case, it is important for the profession to look at the issue straight on and find out why. It is very important for the music therapy profession to investigate who is applying research evidence in their sessions and find out what they consider the best evidence for their clinical practice. If clinicians are not incorporating evidence-based music interventions into their sessions, the profession needs to find out how and where the music therapists are getting their ideas.

In the short term, the profession needs to better strategically place the research evidence that exists in the hands of music therapy educators, internship supervisors, students, and practicing clinicians, meanwhile creating innovative ways to support practitioners on how to learn to interpret the evidence and apply in their sessions. To address a long-term goal, defining evidence in music therapy, the profession must work together, those who use the research evidence and those who may not use research evidence to inform clinical practice, and come to consensus on what is evidence in music therapy. Researchers and clinicians can then coordinate efforts to incorporate what is evidence in Music Therapy into clinical practice, in
turn advancing the profession, and continuing to promote health and wellness through music for the clients served.
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Appendix A: IRB Approval

A determination has been made that the following research study meets the criteria for exemption under the following category(ies):

Project Title: Sources of Knowledge That Inform Music Therapists' Choices of Music Therapy Interventions

Primary Investigator: Kamile Geist

Co-Investigator(s):

Advisor: Gordon Brooks

Department: Music Therapy

Rebecca Cale 6/23/15

Office of Research Compliance Staff
Rebecca Cale, AAB, CIP
Robin Stack, CIP
Shelly Rex, BS

The approval remains in effect provided the study is conducted exactly as described in your approved application. Any additions or modifications to the project must be reviewed and approved by the IRB (as an amendment) prior to implementation.

IRB approval does not supersede other regulatory requirements, such as HIPAA, FERPA, PPRA, etc.

Adverse events/unexpected problems must be reported to the IRB promptly.
Appendix B: Expert Review Questionnaire

Thank you for taking time to review my questionnaire for my dissertation study.

The purpose of the professional review is for validity purposes. In general, do the items measure what they are expected to measure?, what is missing if anything from the area listed?, what is not necessary?, and do the questions make sense? Feel free to comment anywhere on the document as you feel is necessary. I have placed questions below each section as well.

APPENDIX B: QUESTIONNAIRE TOOL

1. I currently work as a board certified music therapist.
   Y  N  (If no, skip logic to end of survey.)

   Questions 2-36 refer to what extent (never, seldom, sometimes, frequently, or always) you use certain Sources of Knowledge to inform your music therapy intervention choices.

   Note to Reviewer: On the questionnaire, the scale will be listed under each question.
   The following are grouped by constructs. The constructs may or may not be listed on the actual questionnaire.

   Directions: Please answer questions below each section related to the section above it. Feel free to add comments throughout as needed.

   1 = never; 2 = seldom; 3 = sometimes; 4 = sometimes; 5 = always

   Clinical Training Experiences

   2. I use treatment interventions I learned in my past music therapy pre-internship clinical training.
   3. I use treatment interventions I learned in my past music therapy internship clinical training.
   4. I use treatment interventions that I learned from my music therapy classes I attended at my college/university.
   5. I use treatment interventions that I learned from my non-music therapy classes I attended at my college/university.

   REVIEWER COMMENTS:
   Do the questions measure the construct?
   What is missing for this construct?
   What is not needed?
   Any other comments related to this section.

   Current Clinical Experiences

   6. I use treatment interventions I have used in prior music therapy sessions in my professional practice.
   7. I use treatment interventions I created in my current clinical work.
   8. I use treatment interventions I have observed in prior music therapy sessions in my professional practice.

   REVIEWER COMMENTS:
   Do the questions measure the construct?
   What is missing for this construct?
   What is not needed?
   Any other comments related to this section.
**Other Professionals**

9. I use treatment interventions that I learn in consultation with a music therapy supervisor.
10. I use treatment interventions that I learn when I speak to a non-music therapy supervisor.
11. I use treatment interventions that I learn when I speak to a music therapy colleague who is not my supervisor.

**REVIEWER COMMENTS:**
- Do the questions measure the construct?
- What is missing for this construct?
- What is not needed?
- Any other comments related to this section.

**Social Situations**

12. I use treatment interventions that I learn from social media (e.g. Facebook, Twitter).
13. I use treatment interventions that I learn at professional social gatherings (not at a conference).
14. I use treatment interventions that I learned from a conference social gathering at a music therapy conference.
15. I use treatment interventions that I learned from a conference social gathering at a non music therapy conference.
16. I use treatment interventions that I learned from professional group chats on the internet.
17. I use treatment interventions that I learned from non-professional group chats on the internet.
18. I use treatment interventions that I learned from blogs that I read on the internet.

**REVIEWER COMMENTS:**
- Do the questions measure the construct?
- What is missing for this construct?
- What is not needed?
- Any other comments related to this section.

**Professional Development/Conference Sessions**

19. I use treatment interventions that I learned from music therapy training or professional development on site for my current job.
20. I use treatment interventions that I learned from non-music therapy training or professional development on site for my current job.
21. I use treatment interventions that I learned from music therapy training or professional development away from my job setting.
22. I use treatment interventions that I learned from non-music therapy training or professional development away from my job setting.
23. I use treatment interventions that I learned at a clinical session at a music therapy conference.
24. I use treatment interventions that I learned from a research presentation at a music therapy conference.
25. I use treatment interventions that I learn from attending music therapy research presentations at non-music therapy conferences.
26. I use treatment interventions that I learn from attending non-music therapy research presentations at non-music therapy conferences.
27. I use treatment interventions that I learn from continuing music therapy education courses.
28. I use treatment interventions that I learn from non-music therapy continuing education courses.

**REVIEWER COMMENTS:**
- Do the questions measure the construct?
- What is missing for this construct?
- What is not needed?
- Any other comments related to this section.
**Sources of Knowledge: Music Therapy**

### Research Publications

29. I use treatment interventions that I learn from peer-reviewed research articles published in music therapy research journals.

30. I use treatment interventions that I learn from peer-reviewed research articles published in non-music therapy research journals.

31. I use treatment interventions that I learn from when I conduct clinical research.

**Reviewer Comments:**
- Do the questions measure the construct?
- What is missing for this construct?
- What is not needed?
- Any other comments related to this section.

### Non-Research Publications

32. I use treatment interventions that I learn from non-social media on the internet (e.g. websites)

33. I use treatment interventions that I learn from the non internet media (e.g. news, television, popular press).

34. I use treatment interventions that I learn from professional associations' newsletters.

35. I use treatment interventions that I learn from music therapy theoretical texts.

36. I use treatment interventions that I learn from non-music therapy texts.

**Reviewer Comments:**
- Do the questions measure the construct?
- What is missing for this construct?
- What is not needed?
- Any other comments related to this section.

37. What is the primary instrument you currently use most often when you deliver a music therapy intervention in a session? (select one only)

- keyboard
- guitar
- voice
- ukulele
- drum
- autoharp
- Q chord/Omnichord
- Other

**Reviewer Comments:**
- Is the question clear?
- What if any instruments should be listed?
- What is not needed?
- Any other comments related to this question.
Music Skills Perception
The next section of this questionnaire is related to how you perceive your music skills,
specifically on your primary accompaniment instrument (Leading, Accompanying, Sight-
reading, Transposing, Harmonizing)
The following questions are related to your own perceived skill level on your primary instrument
in music therapy session.
1=Beginner/Novice  2=Adequate  3=Good  4=Competent  5=Expert
38. What is your perceived music skill level when leading on your primary instrument during a
music therapy session?
39. What is your perceived music skill level when accompanying on your primary instrument during
a music therapy session?
40. What is your perceived music skill level when sight-reading on your primary instrument during a
music therapy session?
41. What is your perceived music skill level when transposing on your primary instrument during a
music therapy session?
42. What is your perceived music skill level when harmonizing on your primary instrument during a
music therapy session?

REVIEWER COMMENTS:
Do the questions measure the construct?
What is missing for this construct?
What is not needed?
Any other comments related to this section.

PART III: DEMOGRAPHICS
Directions for Reviewer: Please feel free to make comments and/or suggestions for the
demographics section in RED anywhere in this section.
43. What is your gender?
M  F  Other
44. What is your age in years?
18-21  22-30  31-40  41-50  51-63  63 or older
45. How many years have you been practicing as a music therapist?
0-5  6-10  11-20  21-40  41 or more
46. In what year did you receive your initial music therapy degree?
Drop down menu for year beginning 1950 - 2015
47. In what AMTA region do you currently reside?
   Great Lakes
   Mid-Atlantic
   Midwestern
   New England
   Southeastern
   Southwestern
   Western
   Outside of the United States

48. Are you currently an AMTA member?
   Y
   N

49. What is the highest level of education that you have completed (whether or not that degree
is in Music Therapy or a related field)?
   Undergraduate/Bachelor’s Degree
   Master’s OR Specialist Degree (e.g., M.A., Ed.S)
   Doctoral Degree (including Juris Doctor)

50. Consider your current/or most recent Music Therapy position. With which age group do or
did you primarily work? (Choose one)
   Pre-natal
   Infants/Young Children (birth - 3 years)
   Children (4 - 7 years)
   Pre-teens (8 - 12 years)
   Teens (13 - 19 years)
   Young Adults (20 - 29 years)
   Adults (30 - 49 years)
   Mature Adults (50 - 64 years)
   Seniors (65 + years)

51. Consider your current/or most recent Music Therapy clinical position. Which
characterizes that primary work setting? (choose one)
   Corrections
   Education/School Setting (pre, K - 12)
   Hospice
   Inpatient/Outpatient Medical
   Inpatient/Outpatient Psychiatric
   Military (including Veteran’s Affairs)
   Private Practice/Contractual
   Rehabilitation (physical, speech, occupational)
   Skilled Nursing
   University/College Clinic
   Other ____________

52. What is your primary philosophical orientation?
   Behavioral
   Cognitive-behavioral
SOURCES OF KNOWLEDGE
MUSIC THERAPY

Humanistic
Psychoanalytic
Biomedical
Other
I do not have a primary philosophical orientation.

53. **What are your current professional credentials? (Check all that apply)**
MT-BC
RMT
CMT
ACMT
Other

54. **What is/are your current and former additional music therapy designations** (check all that apply)
FAMI
NICU
NMT
HPMT
NRMT
Other

REVIEWER COMMENTS
Any Comments and/or Suggestions for the Questionnaire not included above.

THANK YOU!!!!
Kamile
Appendix C: Pilot Participants Email

Dear Colleagues,

As some of you may or may not know, I’m almost done completing my PhD in Education, specifically Curriculum and Instruction with a Cognate in Educational Research Methods.

I was wondering if you could take a little bit of time to complete my pilot survey and offer comments.

The survey is about the Sources of Knowledge Music Therapists Use When Making Music Intervention Choices

Basically, where you do you draw from when you are deciding what music intervention to use. Are you using an intervention from your internship, from a class you took recently, from the literature, etc.

I think it’s very important to know this information as we in Music Therapy work to figure out how to best inform clinicians about the evidence in music therapy.

If you are not currently working as a music therapist, that’s ok... this questionnaire is for currently working music therapists only.

Thanks again and let me know if you have questions.

Here is the link:

https://ohio.qualtrics.com/SE/?SID=SV_0Ch2tAWtx2Eyp4R

All the best,

Kamilie Geist
Appendix D: Pilot Questionnaire

Sources of Knowledge Pilot

Q59 Dear Colleagues,

Thank you for agreeing to take part as a pilot participant in my dissertation study. You and approximately 39 other Music Therapy Clinicians have agreed to help me by answering the questions listed and providing feedback at the end of each section. Once the pilot data is collected, I expect to submit the questionnaire to the population of Music Therapists who are registered through CBMT. Thank you for your help with providing me with valuable feedback regarding this important topic, "Music Therapists’ Sources of Knowledge When Making Music Intervention Choices" Even though we may know each other, please provide the most honest responses possible as it only helps in the validation procedures for the tool. All the best to you and thank you again. Kamile Geist, MA, MT-BC Doctoral Candidate, Ohio University, Patton College of Education

Q2 1. I currently work in clinical practice as a board certified music therapist.
   ☑ Yes (1)
   ☑ No (2)

If No Is Selected, Then Skip To End of Survey

Q58 2. I primarily work in the following setting (pick one).
   ☑ Private Practice (1)
   ☑ For a Company or Facility as a Salaried Employee (2)
   ☑ Other (3)

Q60 Please make any comments about questions 1 and 2 regarding difficulty to answer, understandability, and provide any suggestions you may have.

Q3 The next section of questions refer to what extent (never, seldom, sometimes, most of the time, or always) you use certain Sources of Knowledge to inform your Music Intervention choices during Music Therapy. "Music interventions are used to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program...Music interventions may include creating, singing, moving to, and/or listening to music." (AMTA, 2015).

Q53 Consider your academic and clinical training to become a board-certified music therapist and the extent to which the academic coursework, the pre internship clinical experiences and internship clinical experiences have influenced your current choices of music interventions.
Q6 3. I use music interventions that I learned from my music therapy academic classes I attended at my college/university.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q7 4. I use music interventions that I learned from my non-music therapy academic classes I attended at my college/university.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q4 5. I use music interventions that I learned from my music therapy pre-internship clinical training.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q5 6. I use music interventions that I learned from my music therapy internship clinical training.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q61 Please make any comments about questions 3-6 regarding difficulty to answer, understandability, and provide any suggestions you may have.

Q57 Consider your Music Therapy clinical experiences since your academic and clinical training as a board-certified music therapist and the extent to which these experiences influence your current music intervention choices.
Q11 7. I use music interventions that I created in previous music therapy sessions of my previous clinical work.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q8 8. I use music interventions that I adapted from others in previous music therapy sessions in my previous clinical work.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q12 9. I use music interventions that I observed in music therapy sessions of other music therapists whom I've observed.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q65 Please make any comments about questions 7-9 regarding difficulty to answer, understandability, and provide any suggestions you may have.

Q62 Consider the supervision experiences since your academic and clinical training and the extent to which these experiences influence your current music intervention choices. Supervision may occur by a Music Therapist or non music therapy colleague who is your direct work supervisor at your facility. It may be from a music therapy or non music therapy colleague whom you’ve asked to provide you with supervision feedback of your work.

Q13 10. I use music interventions that I learned from a music therapy clinical supervisor since my academic and clinical training.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)
Q14 11. I use music interventions that I learned from a non music therapy clinical supervisor since my academic and clinical training.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q66 Please make any comments about questions 10 and 11 regarding difficulty to answer, understand-ability, and provide any suggestions you may have.

Q56 Consider Social situations that influence your music intervention choices. These may include Social Media (e.g. Facebook, Twitter), Social gatherings, Internet Chat groups, etc.

Q16 12. I use music interventions that I learned from social media (e.g. Facebook, Twitter).
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q17 13. I use music interventions that I learned at professional social gatherings (not at a conference).
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q18 14. I use music interventions that I learned from a social gathering at a music therapy conference.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)
Q19  15.  I use music interventions that I learned from a social gathering at a non music therapy conference.
   ☐ Never (1)
   ☐ Rarely (2)
   ☐ Sometimes (3)
   ☐ Most of the Time (4)
   ☐ Always (5)

Q20  16.  I use music interventions that I learned from professional group chats on the internet.
   ☐ Never (1)
   ☐ Rarely (2)
   ☐ Sometimes (3)
   ☐ Most of the Time (4)
   ☐ Always (5)

Q21  17.  I use music interventions that I learned from non-professional group chats on the internet.
   ☐ Never (1)
   ☐ Rarely (2)
   ☐ Sometimes (3)
   ☐ Most of the Time (4)
   ☐ Always (5)

Q22  18.  I currently use music interventions that I learned from blogs that I read on the internet.
   ☐ Never (1)
   ☐ Rarely (2)
   ☐ Sometimes (3)
   ☐ Most of the Time (4)
   ☐ Always (5)

Q67 Please make any comments about questions 12-18 regarding difficulty to answer, understand-ability, and provide any suggestions you may have.

Q64 Consider your Professional Development trainings since your academic and clinical training as a board-certified music therapist and the extent to which these experiences influence your current music intervention choices.
Q23 19. I currently use interventions that I learned from music therapy training or professional development on site for my current job.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)
- I do not have on site trainings. (6)

Q24 20. I use music interventions that I learned from non-music therapy training or professional development on site for my current job.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)
- I do not have on site trainings (6)

Q25 21. I use music interventions that I learned from music therapy training or professional development away from my job setting.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)

Q26 22. I use music interventions that I learned from non-music therapy training or professional development away from my job setting.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Most of the Time (4)
- Always (5)
Q27
23. I use music interventions that I learned at clinical sessions at music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q28
24. I use music interventions that I learned from research presentations at music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q30
25. I use music interventions that I learned when attending clinical presentations at non-music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q29
26. I use music interventions that I learned when attending research presentations at non-music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q31
27. I use music interventions that I learned from continuing music therapy education courses.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)
Q32
28. I use music interventions that I learned from non-music therapy continuing education courses.
  - Never (1)
  - Rarely (2)
  - Sometimes (3)
  - Most of the Time (4)
  - Always (5)

Q68 Please make any comments about questions 19-28 regarding difficulty to answer, understandability, and provide any suggestions you may have.

Q69 Consider what you typically read and the extent to which the readings you choose influence your current music intervention choices.

Q33
29. I use music interventions that I learn about from peer-reviewed research articles published in music therapy research journals (i.e. The Journal of Music Therapy, The Nordic Journal of Music Therapy, etc.)
  - Never (1)
  - Rarely (2)
  - Sometimes (3)
  - Most of the Time (4)
  - Always (5)

Q34
30. I use music interventions that I learn about from peer-reviewed research articles published in non-music therapy research journals (i.e. Nursing, Young Children, etc.)
  - Never (1)
  - Rarely (2)
  - Sometimes (3)
  - Most of the Time (4)
  - Always (5)

Q70 31. I use music interventions that I learn about from peer-reviewed non-research articles published in music therapy research journals (i.e. Music Therapy Perspectives, Imagine).
  - Never (1)
  - Rarely (2)
  - Sometimes (3)
  - Most of the Time (4)
  - Always (5)
Q36
32. I use music interventions that I learn about from non-social media on the internet (e.g. websites).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q37
33. I use music interventions that I learn about from the non internet media (e.g. news, television, popular press).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q38
34. I use music interventions that I learn about from professional associations' newsletters.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q39
35. I use music interventions that I learn from music therapy theoretical texts.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

Q40
36. I use music interventions that I learn from non-music therapy texts.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)
Q71 Please make any comments about questions 29-36 regarding difficulty to answer, understand-ability, and provide any suggestions you may have.

Q72 This next section is related to how you perceive your music skills, specifically on the instrument that you use the most when delivering music interventions in your sessions.

Q10 37. What instrument do you use most often when you deliver a music intervention in a session? (select one only)
   ☑ keyboard (1)
   ☑ guitar (2)
   ☑ voice (3)
   ☑ ukulele (4)
   ☑ drum or drums (5)
   ☑ autoharp (6)
   ☑ Q Chord/Omnichord (7)

Q73 Consider the instrument you chose as the one you use most often when you deliver a music intervention in a session and answer the following questions related to that instrument.

Q42 38. What is your perceived music skill level when leading on this instrument during a music therapy session?
   ☑ Beginner/Novice (1)
   ☑ Adequate (2)
   ☑ Good (3)
   ☑ Competent (4)
   ☑ Expert (5)

Q43 39. What is your perceived music skill level when accompanying with this instrument during a music therapy session?
   ☑ Beginner/Novice (1)
   ☑ Adequate (2)
   ☑ Good (3)
   ☑ Competent (4)
   ☑ Expert (5)

Q44 40. What is your perceived music skill level when sight-reading with this instrument during a music therapy session?
   ☑ Beginner/Novice (1)
   ☑ Adequate (2)
   ☑ Good (3)
   ☑ Competent (4)
   ☑ Expert (5)
Q46 41. What is your perceived music skill level when transposing on this instrument during a music therapy session?
- Beginner/Novice (1)
- Adequate (2)
- Good (3)
- Competent (4)
- Expert (5)

Q47 42. What is your perceived music skill level when harmonizing on this instrument during a music therapy session?
- Beginner/Novice (1)
- Adequate (2)
- Good (3)
- Competent (4)
- Expert (5)

Q74 43. What is your perceived music skill level when improvising on this instrument during a music therapy session?
- Beginner/Novice (1)
- Adequate (2)
- Good (3)
- Competent (4)
- Expert (5)

Q84 44. What is your perceived music skill level when composing using this instrument during a music therapy session?
- Beginner/Novice (1)
- Adequate (2)
- Good (3)
- Competent (4)
- Expert (5)

Q75 Please make any comments about questions 37-44 regarding difficulty to answer, understand-ability, and provide any suggestions you may have.

Q48 45. What is your gender?
- Male (1)
- Female (2)
- Other (3)
Q49 46. What is your age in years?
☑ 18-21 (1)
☑ 22-30 (2)
☑ 31-40 (3)
☑ 41-50 (4)
☑ 51-63 (5)
☑ 64 or older (6)

Q50 47. How many years have you been practicing as a music therapist?
☑ 0-5 (1)
☑ 6-10 (2)
☑ 11-20 (3)
☑ 21-30 (4)
☑ 31-40 (5)
☑ 41-50 (6)
☑ 51 or more (7)
Q51 48. In what year did you receive your MT-BC certification? (e.g. 1967, 2015)

- 1950 (1)
- 1951 (2)
- 1952 (3)
- 1953 (4)
- 1954 (5)
- 1955 (6)
- 1956 (7)
- 1957 (8)
- 1958 (9)
- 1959 (10)
- 1960 (11)
- 1961 (12)
- 1962 (13)
- 1963 (14)
- 1964 (15)
- 1965 (16)
- 1966 (17)
- 1967 (18)
- 1968 (19)
- 1969 (20)
- 1970 (21)
- 1971 (22)
- 1972 (23)
- 1973 (24)
- 1974 (25)
- 1975 (26)
- 1976 (27)
- 1977 (28)
- 1978 (29)
- 1979 (30)
- 1980 (31)
- 1981 (32)
- 1982 (33)
- 1983 (34)
- 1984 (35)
- 1985 (36)
- 1986 (37)
- 1987 (38)
- 1988 (39)
- 1989 (40)
- 1990 (41)
- 1991 (42)
- 1992 (43)
Q76. In what AMTA region do you currently reside?
- Great Lakes (1)
- Mid-Atlantic (2)
- Midwestern (3)
- New England (4)
- Southeastern (5)
- Southwestern (6)
- Western (7)
- I do not reside in an AMTA region (8)

Q77. Are you currently an AMTA member?
- Yes (1)
- No (2)

Q78. What is the highest level of education that you completed in Music Therapy?
- Undergraduate/Bachelor's Degree (1)
- Master's OR Specialist Degree (e.g. MA, EdS) (2)
- Doctoral Degree (including Juris Doctor) (3)
Q79 52. What is the highest level of education that you have completed other than in Music Therapy?
- Undergraduate/Bachelor's Degree (1)
- Master's OR Specialist Degree (e.g. MA, EdS) (2)
- Doctoral Degree (including Juris Doctor) (3)
- I do not have any other degrees besides those in Music Therapy (4)

Q80 53. Consider your current Music Therapy position. With which age group do you primarily work?
- Pre-natal (1)
- Infants/Young Children (birth-3 years) (2)
- Children (4-7 years) (3)
- Pre-teens (8-12 years) (4)
- Teens (13-19 years) (5)
- Young Adults (20-29 years) (6)
- Adults (30-49 years) (7)
- Mature Adults (50-64 years) (8)
- Seniors (65 + years) (9)

Q81 54. Consider your current Music Therapy clinical position. Which characterizes that primary work setting? (choose one)
- Corrections (1)
- Education/School Setting (pre, K-12) (2)
- Hospice (3)
- Inpatient/Outpatient Medical (4)
- Inpatient/Outpatient Psychiatric (5)
- Military (including Veteran's Affairs) (6)
- Private Practice/Contractual (7)
- Rehabilitation (physical, speech, occupational) (8)
- Skilled Nursing (9)
- University/College Clinic (10)
- Other (11) ____________________

Q82 55. What is your primary philosophical orientation?
- Behavioral (1)
- Cognitive-behavioral (2)
- Humanistic/Psychodynamic (3)
- Biomedical (4)
- Eclectic (5)
- Other (6) ____________________
- I do not have a primary philosophical orientation. (7)
Q83 56. What are your current professional designations or credential?
- MT-BC (1)
- RMT (2)
- CMT (3)
- ACMT (4)

Q85 57. What are your current or former professional designations and/or
- NMT (1)
- NMT Fellow (2)
- HPMT (3)
- NRMT (4)
- LPHC (5)
- LCAT (6)
- LMHC (7)

Q86 Please make any comments about questions 45-57 regarding difficulty to answer, understand-ability, and provide any suggestions you may have.

Q87 General Comments about the Questionnaire Tool:

Q88 THANK YOU for taking the time to complete the questionnaire and for your energy with providing me with feedback. All the best to you, Kamile
Appendix E: Study Participants Email

Dear Music Therapist,

Greetings! My name is Kamile Geist and I'm conducting a study titled: Sources of Knowledge That Inform Music Therapists’ Choices of Music Therapy Interventions.

The purpose of this study is to find out from board-certified music therapists, what their Sources of Knowledge when deciding on music therapy clinical treatment.

The questionnaire is divided into 3 parts: 1) Questions (34) related to your sources of knowledge when making treatment choices, 2) Questions (2) related to your self-perceived music skill, and 3) Questions (16) related to general demographic information. The questionnaire should take no more than 10 minutes to complete.

The data collected from this study has the potential to inform the field of Music Therapy on the best ways to disseminate evidence to where music therapists are looking on a daily basis when making clinical treatment decisions. Your participation in this study is voluntary, your information will be kept anonymous, and you must be a music therapist certified through CBMT in order to participate.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:

* Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;

* Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU;

Reminders: By completing this survey you are attesting that your are 18 years of age or older. You also may choose to withdraw from this study at any time with no penalty to you.

Contact Information: If you have any questions regarding this study, please contact the researcher Kamile Geist at geistk@ohio.edu or my research advisor Gordon Brooks at brooksg@ohio.edu

If you have any questions regarding your rights as a research participant, please contact Chris Hayhow, Director of Research Compliance, Ohio University, (740) 593-0664 or hayhow@ohio.edu.

Thank you,

Kamile Geist, MA, MT-BC
Appendix F: Study Questionnaire

10/31/2015 Qualtrics Survey Software

Default Question Block

Dear Music Therapy Colleagues,

The purpose of this study is to find out how often Music Therapists utilize various Sources of Knowledge when using music therapy interventions in their clinical settings.

Sources of Knowledge in this study are defined as past clinical training experiences, current clinical experiences, social situations, professional development, and text sources.

Your participation in this study will provide critical information needed to help inform where we as a discipline need to provide the best information about music interventions, whether in best teaching and clinical practices, social media, professional development, and/or in text sources.

If we know what Sources of Knowledge you as a clinician draw from the most, we as a profession can then move to strategically place the best information in the most accessible places to promote best evidence-based music therapy practices.

This survey (52 questions total) is designed to take about 10 minutes maximum to complete!

All responses are coded to make sure your identifying email is kept anonymous from the researcher.

Thank you again for your contribution to advancing the field of Music Therapy by participating in this research study.

Sincerely, the researcher...

Kamile Geist, MA, MT-BC
Doctoral Candidate, Ohio University, Patton College of Education
giestk@ohio.edu

Kamile Geist's Dissertation Advisor

Gordon Brooks, PhD
Professor of Educational Research Methods, Ohio University, Patton College of Education
brooksg@ohio.edu

1. I currently work in clinical practice as a board certified music therapist.
   - Yes
   - No

2. I primarily work in the following setting (pick one).
   - Private Practice
The next section of questions refers to what extent (never, seldom, sometimes, often, or always) you use certain *Sources of Knowledge* to inform your music therapy intervention choices during your clinical work.

"Music interventions are used to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program...Music interventions may include creating, singing, moving to, and/or listening to music" (AMTA, 2015).

You will be asked questions about your *Sources of Knowledge* in the areas of

- Academic and Clinical Training
- Clinical Practice Experiences
- Supervision Experiences
- Social Situations
- Professional Development and
- Readings

### Academic and Clinical Training

Consider your undergraduate and/or graduate academic and clinical training to become a board-certified music therapist and the extent to which the academic coursework, the pre-internship clinical experiences and internship clinical experiences have influenced your current choices of music interventions.

#### 3. I use music interventions that I learned from my undergraduate music therapy academic classes at my college/university.

<table>
<thead>
<tr>
<th>Never</th>
<th>Rarely</th>
<th>Sometimes</th>
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#### 4. I use music interventions that I learned from my graduate music therapy academic classes at my college/university.

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#### 5. I use music interventions that I learned from my music therapy pre-internship clinical training.
10/31/2015

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<td>6. I use music interventions that I learned from my music therapy internship clinical training.</td>
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<td>7. I use music interventions that I created in my previous clinical work.</td>
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<td>8. I use music interventions that other music therapists use whom I have observed.</td>
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<td>9. I adapt music interventions that other music therapists use whom I have observed.</td>
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**Clinical Practice Experiences**

Consider your music therapy clinical experiences since your academic and clinical training as a board-certified music therapist and the extent to which these experiences influence your current music intervention choices.

**Supervision Experiences**

Consider the supervision experiences since your academic and clinical training and the extent to which these experiences influence your current music intervention choices.

Supervision may occur by a Music Therapist or non music therapy colleague who is your direct work supervisor at your facility. It may be from a music therapy or non music therapy colleague, not a direct work supervisor, whom you’ve asked to provide you with supervision feedback of your work. Supervision may occur in the form of talking and/or observing the supervisor’s clinical work.

10. I use music interventions that I learned from a music therapy clinical supervisor since my academic and clinical training.
11. I adapt music interventions that I learned from a music therapy clinical supervisor since my academic and clinical training.

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12. I use music interventions that I learned from a non music therapy clinical supervisor since my academic and clinical training.

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13. I adapt music interventions that I learned from a non music therapy clinical supervisor since my academic and clinical training.

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**Social Situations**

Consider *social situations* that influence your music intervention choices.

These may include Social Media (e.g. Facebook, Pinterest, Twitter), Social gatherings, and/or Internet Chat groups.

14. I use music interventions that I learned from social internet media (e.g. Facebook, Twitter, Pinterest).

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15. I use music interventions that I learned at professional social gatherings (not at a conference).

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16. I use music interventions that I learned from social gatherings at music therapy conferences.

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17. I use music interventions that I learned from social gatherings at non music therapy conferences.

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18. I use music interventions that I learned from professional group chats on the internet (e.g. discussion boards, list serves).

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19. I use music interventions that I learned from non-professional group chats on the internet (e.g. discussion boards, list serves).

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**Professional Development**

Consider your *Professional Development trainings* since your academic and clinical music therapy training and the extent to which these experiences influence your *current music intervention choices*.

20. I use or adapt interventions that I learned from music therapy or professional development trainings on site for my current job.

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21. I use or adapt music interventions that I learned from non-music therapy training or professional development on site for my current job.

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22. I use or adapt music interventions that I learned from music therapy or professional development trainings away from my job setting.

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23. I use or adapt music interventions that I learned from non-music therapy training or professional development away from my job setting.

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24. I use or adapt music interventions that I learned at clinical sessions at music therapy conferences.

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25. I use or adapt music interventions that I learned from research presentations at music therapy conferences.

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26. I use or adapt music interventions that I learned when attending clinical presentations at non-music therapy conferences.

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27. I use or adapt music interventions that I learned when attending research presentations at non-music therapy conferences.

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28. I use or adapt music interventions that I learned from continuing music therapy education courses.

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29. I use or adapt music interventions that I learned from non-music therapy continuing education courses.

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### Readings

Consider what you typically read to inform your knowledge of music therapy interventions and the extent to which the readings you choose influence your current music intervention choices.

#### 30. I use music interventions that I learn about from peer-reviewed research articles published in music therapy research journals (i.e. The Journal of Music Therapy, The Nordic Journal of Music Therapy, etc.).

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#### 31. I use music interventions that I learn about from peer-reviewed research articles published in non-music therapy research journals (i.e. Nursing, Young Children, etc.).

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#### 32. I use music interventions that I learn about from peer-reviewed non-research articles published in music therapy research journals (i.e. Music Therapy Perspectives, Imagine).

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#### 33. I use music interventions that I learn about from non-social media on the internet (e.g. websites, blogs).

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#### 34. I use music interventions that I learn about from the non internet media (e.g. news, television, popular press).

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#### 35. I use music interventions that I learn about from professional associations’ newsletters.

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### 36. I use music interventions that I learn from music therapy theoretical texts.

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### 37. I use music interventions that I learn from non-music therapy texts.

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The next couple of questions are related to the *music instrument* you use most often in your music therapy clinical practice and *how you perceive your skills*.

The researcher is curious as to whether the perception of music skill has any influence on music therapist’s *Sources of Knowledge* choices.

### 38. What instrument do you use most often when you deliver a music intervention in a session? (select one only)

- ☐ keyboard
- ☐ guitar
- ☐ voice
- ☐ ukulele
- ☐ drum or drums
- ☐ autoharp
- ☐ Q Chord/Omnichord
- ☐ Other

### 39. What is your perceived music skill level on the instrument you use most often during a music therapy session?

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### Demographics Section

The rest of the survey (questions 40-52) are questions related to your demographics.

Once you complete these questions, you are done!
40. What is your gender?

- Male
- Female
- Other

41. What is your age in years?

- 18-21
- 22-30
- 31-40
- 41-50
- 51-63
- 64 or older

42. How many years have you been practicing as a music therapist?

- 0-5
- 6-10
- 11-20
- 21-30
- 31-40
- 41-50
- 51 or more

43. In what year did you receive your MT-BC certification? (e.g. 1967, 2015)

44. In what AMTA region do you currently reside?

- Great Lakes
- Mid-Atlantic
- Midwestern
- New England
- Southeastern
45. Are you currently an AMTA member?
   - Yes
   - No

46. What is the highest level of education that you completed in Music Therapy?
   - Undergraduate/Bachelor's Degree
   - Undergraduate plus Music Therapy equivalency
   - Master's OR Specialist Degree (e.g. MA, EdS)
   - Doctoral Degree (including Juris Doctor)

47. What is the highest level of education that you have completed other than in Music Therapy?
   - Undergraduate/Bachelor's Degree
   - Master's OR Specialist Degree (e.g. MA, EdS)
   - Doctoral Degree (including Juris Doctor)
   - I do not have any other degrees besides those in Music Therapy

48. Consider your current Music Therapy position. With which age group do you primarily work?
   - Pre-natal
   - Infants/Young Children (birth-3 years)
   - Children (4-7 years)
   - Pre-teens (8-12 years)
   - Teens (13-19 years)
   - Young Adults (20-29 years)
   - Adults (30-49 years)
   - Mature Adults (50-64 years)
   - Seniors (65 + years)
   - I work equally with 2 or more age groups.
48b. Consider your current Music Therapy position. If you work equally with 2 or more age groups, select below.

- Pre-natal
- Infants/Young Children (birth-3 years)
- Children (4-7 years)
- Pre-teens (8-12 years)
- Teens (13-19 years)
- Young Adults (20-29 years)
- Adults (30-49 years)
- Mature Adults (50-64 years)
- Seniors (65 + years)
- Other (Please Specify)

49. Consider your current Music Therapy clinical position. Which characterizes your primary work setting? (choose one)

- Corrections
- Education/School Setting (pre, K-12)
- Hospice
- Inpatient/Outpatient Medical
- Inpatient/Outpatient Psychiatric
- Military (including Veteran's Affairs)
- Private Practice/Contractual
- Rehabilitation (physical, speech, occupational)
- Skilled Nursing
- Multiple Populations at a Community-Based University/College Clinic
- Multiple Populations at a Community-Based Clinic not at a university/college
- Other

50. What is your primary philosophical orientation?

- Behavioral
- Biomedical
- Cognitive-behavioral
- Eclectic
- Humanistic
51. What are your current professional designations or credentials?

☐ MT-BC
☐ RMT
☐ CMT
☐ ACMT

52. What are your current or former professional designations?

☐ HPMT
☐ LCAT
☐ LMHC
☐ LPHC
☐ NICU-MT
☐ NMT
☐ NMT Fellow
☐ NRMT
☐ None
☐ Other

Thank you for taking the time to take this survey. If you selected that you are not currently working as a Music Therapist, you are done with completing the survey.

If you have any questions about the survey, please feel free to contact me, the researcher, Kamile Geist geistk@ohio.edu or my dissertation advisor Gordon Brooks brooksg@ohio.edu.

THANK YOU for taking the time to complete the survey and for your contribution to the research evidence in Music Therapy!

If you have any questions about the survey, please feel free to contact me, the researcher, Kamile Geist geistk@ohio.edu or my dissertation advisor Gordon Brooks brooksg@ohio.edu
Appendix G: Post Study Non-Response Email

Dear Music Therapist,

Greetings and Happy New Year! My name is Kamile Geist and I’m conducting a study titled: Sources of Knowledge that Inform Music Therapists’ Choices of Music Therapy Interventions.

If you have completed this survey, please ignore this email. If you have not, the survey is complete and my advisor has asked for those who still want to complete the survey to feel free to do so. I will use the data to validate the study and the responses from others. You will need to use this link: https://ohio.qualtrics.com/SE/?SID=SV 6rR7sJ8fABUYBL

As a reminder:
The purpose of this study is to find out from board-certified music therapists, what their their Sources of Knowledge when deciding on music therapy clinical treatment.

The questionnaire is divided into 3 parts: 1) Questions (34) related to your sources of knowledge when making treatment choices, 2) Questions (2) related to your self-perceived music skill, and 3) Questions (16) related to general demographic information. The questionnaire should take no more than 10 minutes to complete.

The data collected from this study has the potential to inform the field of Music Therapy on the best ways to disseminate evidence to where music therapists are looking on a daily basis when making clinical treatment decisions. Your participation in this study is voluntary, your information will be kept anonymous, and you must be a music therapist certified through CBMT in order to participate.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:

* Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;

* Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU;

Reminders By completing this survey you are attesting that your are 18 years of age or older. You also may choose to withdraw from this study at any time with no penalty to you.

Contact Information If you have any questions regarding this study, please contact the researcher Kamile Geist at geistik@ohio.edu or my research advisor Gordon Brooks at brooksg@ohio.edu

If you have any questions regarding your rights as a research participant, please contact Chris Hayhow, Director of Research Compliance, Ohio University, (740) 593-0664 or hayhow@ohio.edu.

Thank you,

Kamile Geist, MA, MT-BC
Appendix H: Post Study Non-Response Questionnaire

Sources of Knowledge Survey - Copy

Dear Music Therapy Colleagues,  The purpose of this study is to find out how often Music Therapists utilize various Sources of Knowledge when using music therapy interventions in their clinical settings.  Sources of Knowledge in this study are defined as past clinical training experiences, current clinical experiences, social situations, professional development, and text sources.  Your participation in this study will provide critical information needed to help inform where we as a discipline need to provide the best information about music interventions, whether in best teaching and clinical practices, social media, professional development, and/or in text sources.  If we know what Sources of Knowledge you as a clinician draw from the most, we as a profession can then move to strategically place the best information in the most accessible places to promote best evidence-based music therapy practices.  This survey (52 questions total) is designed to take about 10 minutes maximum to complete!  All responses are coded to make sure your identifying email is kept anonymous from the researcher.  Thank you again for your contribution to advancing the field of Music Therapy by participating in this research study.  Sincerely, the researcher...  Kamile Geist, MA, MT-BC Doctoral Candidate, Ohio University, Patton College of Education  geistk@ohio.edu  Kamile Geist’s Dissertation Advisor  Gordon Brooks, PhD  Professor of Educational Research Methods, Ohio University, Patton College of Education  brooksg@ohio.edu

1. I currently work in clinical practice as a board certified music therapist.
   ☐ Yes (1)
   ☐ No (2)
   If No Is Selected, Then Skip To THANK YOU for taking the time to comp...

Demographics Section  The next section questions related to your demographics.  Once you complete these questions, you will be asked a series of questions related to your sources of knowledge when making clinical intervention decisions.

2. What is your gender?
   ☐ Male (1)
   ☐ Female (2)
   ☐ Other (3) ____________________
3. What is your age in years?
- 18-21 (1)
- 22-30 (2)
- 31-40 (3)
- 41-50 (4)
- 51-63 (5)
- 64 or older (6)

4. How many years have you been practicing as a music therapist?
- 0-5 (1)
- 6-10 (2)
- 11-20 (3)
- 21-30 (4)
- 31-40 (5)
- 41-50 (6)
- 51 or more (7)
5. In what year did you receive your MT-BC certification? (e.g. 1967, 2015)
   - 1950 (1)
   - 1951 (2)
   - 1952 (3)
   - 1953 (4)
   - 1954 (5)
   - 1955 (6)
   - 1956 (7)
   - 1957 (8)
   - 1958 (9)
   - 1959 (10)
   - 1960 (11)
   - 1961 (12)
   - 1962 (13)
   - 1963 (14)
   - 1964 (15)
   - 1965 (16)
   - 1966 (17)
   - 1967 (18)
   - 1968 (19)
   - 1969 (20)
   - 1970 (21)
   - 1971 (22)
   - 1972 (23)
   - 1973 (24)
   - 1974 (25)
   - 1975 (26)
   - 1976 (27)
   - 1977 (28)
   - 1978 (29)
   - 1979 (30)
   - 1980 (31)
   - 1981 (32)
   - 1982 (33)
   - 1983 (34)
   - 1984 (35)
   - 1985 (36)
   - 1986 (37)
   - 1987 (38)
   - 1988 (39)
   - 1989 (40)
   - 1990 (41)
   - 1991 (42)
   - 1992 (43)
6. In what AMTA region do you currently reside?
   - Great Lakes (1)
   - Mid-Atlantic (2)
   - Midwestern (3)
   - New England (4)
   - Southeastern (5)
   - Southwestern (6)
   - Western (7)
   - I do not reside in an AMTA region (8)

7. Are you currently an AMTA member?
   - Yes (1)
   - No (2)

8. What is the highest level of education that you completed in Music Therapy?
   - Undergraduate/Bachelor's Degree (1)
   - Undergraduate plus Music Therapy equivalency (4)
   - Master's OR Specialist Degree (e.g. MA, EdS) (2)
   - Doctoral Degree (including Juris Doctor) (3)
9. What is the highest level of education that you have completed other than in Music Therapy?
   - Undergraduate/Bachelor's Degree (1)
   - Master's OR Specialist Degree (e.g. MA, EdS) (2)
   - Doctoral Degree (including Juris Doctor) (3)
   - I do not have any other degrees besides those in Music Therapy (4)

10. I primarily work in the following setting (pick one).
    - Private Practice (1)
    - For a Facility as a Salaried Employee (2)
    - Private Practice and For a Facility as a Salaried Employee (4)
    - For a Facility on an Hourly Rate (5)
    - Other (3) 

11. Consider your current Music Therapy position. With which age group do you primarily work?
    - Pre-natal (1)
    - Infants/Young Children (birth-3 years) (2)
    - Children (4-7 years) (3)
    - Pre-teens (8-12 years) (4)
    - Teens (13-19 years) (5)
    - Young Adults (20-29 years) (6)
    - Adults (30-49 years) (7)
    - Mature Adults (50-64 years) (8)
    - Seniors (65 + years) (9)
    - I work equally with 2 or more age groups. (10)

If Pre-natal Is Selected, Then Skip To 49. Consider your current Music Thera...If Infants/Young Children (bir... Is Selected, Then Skip To 49. Consider your current Music Thera...If Children (4-7 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Pre-teens (8-12 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Teens (13-19 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Young Adults (20-29 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Adults (30-49 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Mature Adults (50-64 years) Is Selected, Then Skip To 49. Consider your current Music Thera...If Seniors (65 + years) Is Selected, Then Skip To 49. Consider your current Music Thera...If I work equally with 2 or mo... Is Selected, Then Skip To 48b. Consider your current Music Ther...
11b. Consider your current Music Therapy position. If you work equally with 2 or more age groups, select below.
- Pre-natal (1)
- Infants/Young Children (birth-3 years) (2)
- Children (4-7 years) (3)
- Pre-teens (8-12 years) (4)
- Teens (13-19 years) (5)
- Young Adults (20-29 years) (6)
- Adults (30-49 years) (9)
- Mature Adults (50-64 years) (10)
- Seniors (65 + years) (11)
- Other (Please Specify) (7) ____________________

12. Consider your current Music Therapy clinical position. Which characterizes your primary work setting? (choose one)
- Corrections (1)
- Education/School Setting (pre, K-12) (2)
- Hospice (3)
- Inpatient/Outpatient Medical (4)
- Inpatient/Outpatient Psychiatric (5)
- Military (including Veteran's Affairs) (6)
- Private Practice/Contractual (7)
- Rehabilitation (physical, speech, occupational) (8)
- Skilled Nursing (9)
- Multiple Populations at a Community-Based University/College Clinic (10)
- Multiple Populations at a Community-Based Clinic not at a university/college (12)
- Other (11) ____________________

13. What is your primary philosophical orientation?
- Behavioral (1)
- Biomedical (4)
- Cognitive-behavioral (2)
- Eclectic (5)
- Humanistic (3)
- Psychodynamic (8)
- Other (6) ____________________
- I do not have a primary philosophical orientation. (7)

14. What are your current professional designations or credentials?
- MT-BC (1)
- RMT (2)
- CMT (3)
- ACMT (4)
15. What are your current or former professional designations?
- HPMT (3)
- LCAT (6)
- LMHC (7)
- LPHC (5)
- NICU-MT (8)
- NMT (1)
- NMT Fellow (2)
- NRMT (4)
- None (9)
- Other (10) ____________________

The next section of questions refers to what extent (never, seldom, sometimes, often, or always) you use certain Sources of Knowledge to inform your music therapy intervention choices during your clinical work. AMTA's Definition of Music Intervention: “Music interventions are used to accomplish individualized goals within a therapeutic relationship by a credentialed professional who has completed an approved music therapy program...Music interventions may include creating, singing, moving to, and/or listening to music” (AMTA, 2015). You will be asked questions about your Sources of Knowledge in the areas of Academic and Clinical Training Clinical Practice Experiences Supervision Experiences Social Situations Professional Development and Readings

Academic and Clinical Training Consider your undergraduate and/or graduate academic and clinical training to become a board-certified music therapist and the extent to which the academic coursework, the pre internship clinical experiences and internship clinical experiences have influenced your current choices of music interventions.

16. I use music interventions that I learned from my undergraduate music therapy academic classes at my college/university.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Always (5)

17. I use music interventions that I learned from my graduate music therapy academic classes at my college/university.
- Never (1)
- Rarely (2)
- Sometimes (3)
- Often (4)
- Always (5)
18. I use music interventions that I learned from my music therapy pre-internship clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

19. I use music interventions that I learned from my music therapy internship clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

Clinical Practice Experiences  Consider your music therapy clinical experiences as a board-certified music therapist since your academic and clinical training and the extent to which these experiences influence your current music intervention choices.

20. I use music interventions that I created in my previous clinical work.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

21. I use music interventions that other music therapists use whom I have observed.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

22. I adapt music interventions that other music therapists use whom I have observed.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

Supervision Experiences  Consider the supervision experiences since your academic and clinical training and the extent to which these experiences influence your current music intervention choices.  Supervision may occur by a Music Therapist or non music
therapy colleague who is your direct work supervisor at your facility. It may by a Music Therapist or non music therapy colleague, who is not a direct work supervisor. Supervision may also occur in the form of talking with the supervisor and/or observing the supervisor's clinical work.

23. I use music interventions that I learned from a music therapy clinical supervisor since my academic and clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

24. I adapt music interventions that I learned from a music therapy clinical supervisor since my academic and clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

25. I use music interventions that I learned from a non music therapy clinical supervisor since my academic and clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

26. I adapt music interventions that I learned from a non music therapy clinical supervisor since my academic and clinical training.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

Social Situations  Consider social situations that influence your music intervention choices. These may include Social Media (e.g., Facebook, Pinterest, Twitter), Social gatherings, and/or Internet Chat groups,
27. I use music interventions that I learned from social internet media (e.g. Facebook, Twitter, Pinterest).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

28. I use music interventions that I learned at professional social gatherings not at a conference.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

29. I use music interventions that I learned from social gatherings at music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

30. I use music interventions that I learned from social gatherings at non music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

31. I use music interventions that I learned from professional group chats on the internet (e.g. discussion boards, list servs).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)
32. I use music interventions that I learned from non-professional group chats on the internet (e.g. discussion boards, list serves).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

Professional Development Consider your Professional Development trainings since your academic and clinical music therapy training and the extent to which these experiences influence your current music intervention choices.

33. I use or adapt interventions that I learned from music therapy or professional development trainings on site for my current job.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

34. I use or adapt music interventions that I learned from non-music therapy training or professional development on site for my current job.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Most of the Time (4)
   - Always (5)

35. I use or adapt music interventions that I learned from music therapy or professional development trainings away from my job setting.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

36. I use or adapt music interventions that I learned from non-music therapy training or professional development away from my job setting.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)
37. I use or adapt music interventions that I learned at clinical sessions at music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

38. I use or adapt music interventions that I learned from research presentations at music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

39. I use or adapt music interventions that I learned when attending clinical presentations at non-music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

40. I use or adapt music interventions that I learned when attending research presentations at non-music therapy conferences.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

41. I use or adapt music interventions that I learned from continuing music therapy education courses.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)
42. I use or adapt music interventions that I learned from non-music therapy continuing education courses.
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

Readings  Consider what you typically read to inform your knowledge of music therapy interventions and the extent to which the readings you choose influence your current music intervention choices.

43. I use music interventions that I learn about from peer-reviewed research articles published in music therapy research journals (i.e. The Journal of Music Therapy, The Nordic Journal of Music Therapy, etc.).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

44. I use music interventions that I learn about from peer-reviewed research articles published in non-music therapy research journals (i.e. Nursing, Young Children, etc.).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)

45. I use music interventions that I learn about from peer-reviewed non-research articles published in music therapy research journals (i.e. Music Therapy Perspectives, Imagine).
   - Never (1)
   - Rarely (2)
   - Sometimes (3)
   - Often (4)
   - Always (5)
46. I use music interventions that I learn about from non-social media on the internet (e.g. websites, blogs).
   ◯ Never (1)
   ◯ Rarely (2)
   ◯ Sometimes (3)
   ◯ Often (4)
   ◯ Always (5)

47. I use music interventions that I learn about from the non internet media (e.g. news, television, popular press).
   ◯ Never (1)
   ◯ Rarely (2)
   ◯ Sometimes (3)
   ◯ Often (4)
   ◯ Always (5)

48. I use music interventions that I learn about from professional associations’ newsletters.
   ◯ Never (1)
   ◯ Rarely (2)
   ◯ Sometimes (3)
   ◯ Often (4)
   ◯ Always (5)

49. I use music interventions that I learn about from music therapy theoretical texts.
   ◯ Never (1)
   ◯ Rarely (2)
   ◯ Sometimes (3)
   ◯ Often (4)
   ◯ Always (5)

50. I use music interventions that I learn about from non-music therapy texts.
   ◯ Never (1)
   ◯ Rarely (2)
   ◯ Sometimes (3)
   ◯ Often (4)
   ◯ Always (5)

The next couple of questions are related to the music instrument you use most often in your music therapy clinical practice and how you perceive your skills.
Appendix I: Item Scale Sources of Knowledge Distributions