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A SURVEY: CONTEMPORARY MUSIC THERAPY PRACTICE WITH  
INDIVIDUALS DIAGNOSED ON THE AUTISM SPECTRUM

by

S. Alie Chandler

A Thesis  
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Faculty of The Graduate College  
in partial fulfillment of the  
requirements for the  
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Western Michigan University  
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## ACKNOWLEDGMENTS

I dedicate this work to my former and current clients with autism spectrum disorders who never cease to amaze me with their innate musicality and unique personalities. I wish to thank them for allowing me into their worlds and broadening my view of reality with their perspectives on life.

I also wish to express deep appreciation to my friends and family who have supported me emotionally and financially in my academic endeavors for so many years. I am indebted to you all. In addition, I wish to thank my professors and mentors for their assistance in this project and for instilling in me a great respect of the profession of music therapy.

Lastly, there exist no words to accurately express how thankful I am to have had the support and love of my husband Rob throughout this arduous educational process which culminates, finally, in this paper.

S. Alie Chandler

# A SURVEY: CONTEMPORARY MUSIC THERAPY PRACTICE WITH INDIVIDUALS DIAGNOSED ON THE AUTISM SPECTRUM

S. Alie Chandler, M.M.

Western Michigan University, 2004

A variety of music therapy approaches and techniques for working with individuals with autism spectrum disorders have evolved out of the creativity of the profession, the influence of different music therapy approaches, as well as the influences of other treatment and educational theories. This study includes a review of the music therapy literature concerning this population as well as a description of common educational programs and other treatment techniques influential in this field. The underlying question of this study is how these diverse methods are being incorporated and integrated into current music therapy practice to best meet the needs of each client.

An original survey instrument was designed in order to address this question and included the following sections: Therapist Demographics, Client/Session Description, Clinical Approach, Treatment Influences, Music Therapy Techniques, Inclusion Practices, and General Questions. This instrument was adapted into a web page, and 461 music therapists, who work with this population as specified by the American Music Therapy Association, were invited to participate in the study via the Internet. Responses were submitted by 171 music therapists. The results indicated that music therapists working with these individuals are influenced in their practice by an eclectic mixture of approaches and techniques. The prevalence of the different interventions and theoretical influences are described and interpreted.

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## INTRODUCTION

Individuals with autism spectrum disorders generally have qualitative impairments in social interaction and verbal and nonverbal communication, stereotypical behavioral patterns, and unusual responses to sensory stimuli. Because of the non-verbal communicative nature of music and a heightened interest in music, music therapy can play a significant role in the treatment of these individuals. The Diagnostic and Statistical Manual, 4th Edition (DSM-IV) (American Psychiatric Association, 1994) lists autism and autism-related disorders under the general category of Pervasive Developmental Disorder. This category includes Asperger's Disorder, Autistic Disorder, Childhood Disintegrative Disorder, Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS), and Rett's Disorder. Some believe that these labels lie on a continuum or spectrum of autism, from severe to mild, while others believe that they reflect distinctly separate conditions (Snell, 2002). For the purposes of this paper, the terms *autism* and *autism spectrum disorder (ASD)* refer in general to the various diagnoses on the autism continuum.

The Autism Society of America reports that autism is growing at a rate of 10 to 17 percent per year and prevalence could reach four million Americans in the next decade (Autism Society of America, 2003). Since music therapists may be servicing an increasing number of children diagnosed with autism spectrum disorders, it is particularly important to further define and describe music therapy with this population. A variety of music therapy approaches and techniques for working with individuals with autism spectrum disorders have evolved out of the creativity of the profession, the influence of different music therapy approaches, as well as the

influences of other treatment and educational theories. The question arises of how these diverse methods are being incorporated and integrated into current music therapy practice to best meet the needs of each client.

Undoubtedly, any music therapy approach is tailored to meet the client's individual needs, resulting in a given variance in the usage of each technique. Nelson, Anderson, and Gonzalez (1984) underscore this idea particularly in regard to clients with autism, stating that "no universal rules of therapy can be applied to all these children under all conditions" (p. 113). Keeping in mind that each general technique will be used differently for each individual in therapy, this study intends to present a view of the music therapy techniques and approaches being incorporated into current music therapy practice with this population, the prevalence of each technique and approach, and the influence, if any, of current educational and treatment theories.

Several questions serve as the basis of this survey study: Is there a predominant technique or approach that is widely utilized or do most music therapists draw from several different approaches when working with this population? Do music therapists of specific schools of thought incorporate outside techniques or theories for their work with people with autism? Since there are so many differing educational and treatment theories for people with autism, which theories are currently influencing music therapy interventions?

In its broadest sense, this study hopes to lead to a clearer understanding of the possible treatment avenues for individuals with autism spectrum disorders. In order to implement the most effective and ethical treatment model for each individual, music therapists need to be cognizant of the different techniques and methods being used with this population. The following literature review examines not only the existent music therapy literature concerning this population, but also predominant educational

and treatment theories that may influence music therapy practice with individuals diagnosed with autism spectrum disorders.

## LITERATURE REVIEW

### Music Perception and Autism

An unusual responsiveness to music is frequently mentioned in the literature on children with autism. In fact, savant musical abilities are reported in several case studies (Sherwin, 1953; O'Connell, 1974; Young & Nettelbeck, 1995). Provonost (1961) found heightened response and interest in musical sounds as compared with other stimuli in twelve children diagnosed with autism. In an experiment by Applebaum, Egel, Keogel, and Imhoff (1979), children with autism performed as well as or better than a control group on imitation of individual or a series of tones.

Empirical research with this population suggests that musical stimuli may be preferred to verbal and visual stimuli. Blackstock (1978) compared the responses to verbal and musical material of ten children with autism and ten typically developing children. In Experiment I, the procedure involved the experimenter modeling the operation of two levers, one triggering a "music" tape of excerpts of 10 common songs and one activating a "speech" tape of the same lyrics but spoken. Following this orientation, the child was urged to pull either lever. Each subject was tested for one 45-minute session composed of three 15-minute segments between which the tapes in the machine were exchanged. Results indicated a clear preference ( $p < .001$ ) by the children with autism for the musical version, while the typically developing children showed no preference.

Blackstock's second experiment in this study addressed the notion that "autistic children are right-hemisphered processors and that this lateralized processing

is responsible not only for a slight shift in spatial orientation and attention but for information selection and orientation as well” (p.346). Testing eleven children with autism and twenty-five “normal” adults and children, the amount of time each subject listened at each of four speakers and with which ear he listened were recorded. Three of the speakers played contemporary popular music and one played verbal stories, poetry, or Russian. The results showed that autistic subjects oriented predominantly toward musical information and listened most of the time with their left ears, implying right-hemisphere dominance.

Thaut (1987) investigated perceptual preferences comparing auditory (musical) and visual stimuli. The subjects for the study were fifteen male children of which five were diagnosed with autism and ten were typically developing peers. In the experimental session, each child was shown how to operate two press-buttons that activated either a slide projector of animal pictures or a tape recording of instrumental music. Each child then was instructed to play with the buttons according to his preference for 10 minutes. The time each child spent with each stimulus was recorded. The results indicated a weak preference of children with autism for the auditory musical stimulus, without the data approaching statistical significance. Interestingly, children with autism stayed significantly longer in music than the group equated by developmental age ( $p < .05$ ) and longer than the group equated by chronological age ( $p < .02$ ). Thaut concluded that “autistic children at chronological and developmental ages where normal children prefer visual displays spent significantly more time with auditory musical stimulation than their normal peers” (p.432).

Kolko, Anderson, and Campbell (1980) also researched the sensory preference of this population to visual and auditory (music) stimuli. Five subjects with autism and five typically developing children participated in the study. Each child was tested in

two sessions, each for 20 minutes, and was instructed how to operate two levers. One lever activated a slide projector that presented one of 40 color slides of street and city scenes for 10 seconds each. The other lever activated a tape recorder for 10 seconds of music selections from the movie *The Sting*. Similar to findings of the previously mentioned studies, “four of the five autistic children registered a reliable preference for musical stimulation ( $p < .01$ ) and the other for visual stimulation ( $p < .05$ ), whereas none of the normal children expressed a significant difference for either modality” (p. 264).

Thaut (1988) measured the musical responsiveness of children with autism by analyzing their improvised tone sequences compared to children with mental impairments. Twenty-two children, five with autism, six with mental retardation, and eleven normally developing, were involved in the study, and groups were matched for chronological and developmental age. Each child was asked to play on a familiar pentatonic xylophone and the improvisation was recorded. A point-based rating system was designed to measure the following elements of the improvisation: rhythm, restriction (use of available elements), complexity, rule adherence, and originality. Results revealed that the children with autism scored significantly better than the children with mental impairments in terms of rhythm, restriction, originality, and total performance scores. In addition, there were no significant differences between the normally developing children and the autistic children in terms of rhythm, restriction, total performance score and originality. The author points out that “in these three aspects (rhythm, restriction, originality), autistic children showed normal features” (p.567). In terms of complexity and rule adherence, the improvisations of the children with autism, characterized by short, recurring motives, resembled those of the children with mental impairments. This suggests an inability to organize and retain complex

temporal sequences. Although the number of participants was small, the results of this study lead us to interpret the musical responsiveness of autistic children as similar in ways to that of normally developing children.

In a more recent study, the findings of Mottron, Peretz, and Menard (2000) suggest that “enhanced processing of elementary physical properties of incoming stimuli, as found previously in the visual modality, may also exist in the auditory modality” (p. 1057). Participants were thirteen high-functioning individuals with autism and Asperger’s Syndrome and thirteen normally developing individuals. They were involved in a same-different discrimination task of pairs of melodies, which were altered at local or global levels. The authors based these modifications on music perception research findings such as the theory that the right hemisphere of the brain processes global musical elements like contour, and the left hemisphere processes local elements like intervallic structure. This study revealed that the clinical group possessed the same advantage with respect to global processing of music as the control group. In addition, the authors found that individuals with high-functioning autism performed better than the comparison group when absolute pitch could be used for discrimination, indicating enhanced local processing. In sum, the findings support the notion of enhanced local processing as well as typical global processing of auditory (musical) input.

The research cited here presents important considerations in the education and treatment of persons with autism, and further validates the implementation of music therapy with this population. Though more research with larger clinical samples is needed, it appears that many individuals with autism could be particularly receptive to, prefer, and have enhanced sensory processing of music. As reported by Toigo (1991), Dr. Temple Grandin, who was diagnosed with autism as a child, has studied treatment



programs for children with autism extensively and highly recommends that music therapy be a part of any program. However, it should be noted that negative responses to music by some persons with autism are reported in the music therapy literature (Alvin & Warwick, 1991; Nordoff & Robbins, 1971). Individual differences and preferences should always be assessed and considered in treatment programs.

### Music Therapy Approaches and Techniques

The music therapy literature concerning the autistic spectrum population reveals a variety of approaches and techniques. From structured to unstructured interventions, humanistic to neurologically based approaches, each different style has shown some level of effectiveness through qualitative or quantitative research. The following review attempts to present the breadth of music therapy interventions and approaches as found in the literature specific to this diagnosis. Categories were devised by the author in order to organize the existing literature and are not meant to be strict divisions, as crossover between some approaches exists. The categories are: Behavioral Approach, Improvisational Approach, Sensory Integration Approach, and Combined Approaches.

#### Behavioral Approach

Behaviorally oriented music therapy literature concerning this population includes techniques such as using music as a reinforcer, reciprocal inhibition, and the use of functional behavior assessments. Michel (1976) successfully used musical instruments as a contingent reinforcer to teach a boy with autism to button his shirt. Through the use of an objective rating system, Stephens and Clark (1969) found that incorporating action songs and singing resulted in significantly improved prosocial

behaviors of five boys with autism.

In a case study of a 6-year-old child with pervasive developmental disorder, Hoelzley (1991) described the use of reciprocal inhibition, a behavior therapy technique based upon the assumption that one emotional state can prevent or inhibit the occurrence of another. Various wind instruments were used to reciprocally inhibit the child's fear and anxiety of the instruments. During the course of the 114 music therapy sessions, the child's avoidance behaviors "were counter conditioned through the gradual, daily exposure to visual, then auditory and tactile modes of stimuli from the instruments" (p. 58). Results indicated that the process was successful in eliminating the child's fear of the wind instruments as well as fear and avoidance of other novel objects, activities, and persons.

Griggs-Drane and Wheeler (1997) described the use of functional assessments and individualized schedules in the treatment of autism. The authors advocate using a functional assessment of behaviors of the child to "reveal what stimuli are reinforcing and may decrease negative behaviors and likewise, and what types of music are adverse and not tolerated by the individual" (p. 89). By utilizing a scatter plot of targeted negative behaviors and of any positive attending behaviors, the music therapist can assess the types of music and instruments that are most reinforcing. Information to incorporate in the functional assessment includes: "the name of the song, the instrument on which the selection was performed, the key of the performed selection, and if the selection was performed live or recorded" (p. 89). The authors also recommend the use of visual activity schedules, first developed by the Division of Treatment in Education of Autistic and Related Communication Handicapped Children (TEACCH) at the University of North Carolina-Chapel Hill. The use of an object, pictorial, or written schedule can "guide independent progress through the session and

increase on-task behavior and success in implementing either an academic, social, or independent living task” (p. 90). It is also suggested that a “task basket” be used from which the client removes a task and then replaces it when finished. This visual structure may provide easier transitions for the client.

Kostka (1993) studied the behaviors of a nine-year old male with autism who was involved in both a special education music class, and a regular music class. Each of the classes received similar instruction including moving to music, playing instruments, singing, and listening. Using time sampling techniques, three behaviors were tracked: arm flapping, body swaying, and appropriate participation. According to the videotaped data taken from three regular and three special education classes over a time period of one month, all three behaviors occurred less frequently during the regular education class. The author concluded that “for this particular individual, being mainstreamed had a positive effect on his appropriate social behaviors,” although none of the comparisons were significantly different (p. 57).

### Improvisational Approaches

Improvisational music therapy is also used in the treatment of children diagnosed on the autism spectrum. Trevarthen, Aitken, Papoudi, and Roberts (1998) assert that in improvisational music therapy, “autistic children appear to find both security and freedom in the music...as their experiences of sympathetic relating and of self-regulation in co-activity progress” (p. 175). Consequently, this secure relationship leads to developments in many areas such as joint attention, intentionality, use of words, and communication of feelings. A case study of an eight-year-old with autism and mental impairments by Saperston (1973) revealed improvements in communication and emotional functioning through the use of improvised music to

reflect the child's movements. Another case study by Mahlberg (1973) indicated the use of movement and improvised music among other techniques to improve attention span and awareness of others in a boy diagnosed with autism. Substantial clinical documentation of improvisational approaches with children with autism was done by Alvin and Warwick (1991) and Nordoff and Robbins (1971, 1977).

Nordoff and Robbins published numerous descriptive case studies of their own improvisational approach to therapy with this population (Nordoff & Robbins, 1964, 1968, 1971, 1977). Nordoff and Robbins (1971) described the process of musical improvisation with children with autism: "The flexibility of the therapist's playing searches out the region of contact for that child, creates the emotional substance of the contact and sets the musical ground for interactivity" (p. 144). Through this humanistic approach, a nonverbal means of communication is established between the therapist and child, leading to gains in other realms of development. With the autistic population, Nordoff and Robbins have qualitatively reported therapeutic effects including improved interpersonal relationships and sense of self, decreased pathological behaviors, increased vocabulary, self-expression, use of personal pronouns, spontaneous speech and conversation, and acceptance of change and novel situations (Nordoff & Robbins, 1964, 1968, 1971, 1977).

Edgerton (1994) studied the effectiveness of improvisational music therapy, based on the Nordoff-Robbins approach, on the communicative behaviors of children with autism. The Checklist of Communicative Responses/Acts Score Sheet (CRASS) was designed specifically for this study to measure the subjects' musical and nonmusical communicative behaviors. *Communicative responses* were defined as "verbal, vocal, gestural, or instrumental behaviors demonstrated by the child which are influenced by the experimenter's improvisation, e.g., matches a fast basic beat,

simultaneously imitates the rhythm of a melodic motif, etc.” (p. 37). *Communicative acts* were defined as “verbal, vocal, or instrumental behaviors initiated by the child in an attempt to influence the experimenter’s improvisation/behaviors or for the purpose of independent expression” (p. 37).

Eleven “autistic impaired” children, ranging in age from six to nine years, were involved in individual improvisational music therapy sessions for ten weeks (30 minutes per week). A reversal phase was implemented in between two intervention phases, which consisted of playing and singing structured, pre-composed music. The sessions were videotaped, and two independent observers recorded the communicative behaviors using the CRASS. Results showed an overall increase in total scores on the CRASS for the group as a whole, indicating increased communicative behaviors. In addition, as musical vocal behaviors increased, nonmusical speech production also increased. These results suggest that children with autism can make gains in communication through an open-structured intervention.

Alvin and Warwick (1991) published several case studies of children diagnosed on the autism spectrum using a free improvisation approach that also resulted in communication and social gains. Bruscia (1987) entitled Alvin’s psychoanalytically oriented approach “Free Improvisation Therapy” because the therapist does not impose any rules, structure or themes on the client’s improvising. The child’s perceptual relationships to musical instruments were emphasized in the therapeutic process, as the child could project or displace negative feelings upon them thereby keeping the therapist-client relationship free from conflicts. Alvin recommended an open-ended improvisational approach in the early stages of therapy and a more directive approach only in the advanced stages. In this publication, Warwick also recounts her innovative work with mothers and their children with autism together in

music therapy. In two case studies and an experimental study with 10 children, the emotional relationship of the parent-child dyad is explored with progress noted.

Wigram (2000) describes the use of improvisational music therapy and Bruscia's *Improvisation Assessment Profiles (IAP)* (1987) as a mode of assessment and diagnosis of autism. He elucidates the importance of the pre-verbal conversational exchange that occurs during improvisational music therapy, considering the communication impairments of children on the autistic continuum. Through a case study example, two profiles of the IAP, *autonomy* and *variability*, were used to assess the child's level of social, emotional, and communicative interaction, with focus upon the musical elements of the improvisation. This method of assessment "gives musical criteria to work with in evaluating musical activity before attempting to form hypotheses, interpretations and conclusions" (p. 21).

### Sensory Integration Approach

In Berger's recently published book Music Therapy, Sensory Integration and the Autistic Child (2002), a physiologically based approach to treatment is clearly described and shown to be effective in qualitative case studies. The premise of the book is that the physiologic responses of children on the autistic spectrum must be systemically, and systematically, altered through sensory integrating music therapy. Based upon her various clinical experiences and neurobiological research, Berger states that "the music therapist, using the elements of music that are the tools of the profession, provides the 'continuous disturbance' to coax the brain into dealing with new, alternative conditions" (p. 132). This 'continuous disturbance' consists of the continuous repetition of treatment stimuli to alter and repattern brain processes so that new, more functional responses and behaviors can result (p. 171).

Berger states that “autistic physiologic function is nearly always in survival, flight-or-fight mode” (p. 169), thus prohibiting reason and higher cognitive processes to be involved in actions and responses. Music, which is directly interpreted by the amygdala and hypothalamus in the limbic system, allows the brain system to relax and the gates to upper learning centers (neo-cortex) to open (p. 170). Music therapy for sensory integration must first address physiologic comfort, then psycho-emotional stability, and lastly cognitive ability.

In formulating music therapy treatment for sensory adaptation goals, Berger (2002) specifies several goal areas including: adaptive responses to auditory and visual stimuli, auditory integration and discrimination, auditory-physical integration, auditory-visual integration, and auditory-mental-physical coordination. In addition, she targets sequencing, creativity, speech and language, and cognition in general. Berger states that the ultimate goals are “to make a positive impact upon functional adaptation through repatterning and reorganization of sensory precepts, and to foster that sense of well-being - that state of cenesthesia” (p. 137). A minimum of three or four 30-minute or 45-minute music therapy sessions per week is recommended for sensory adaptation.

Berger (2002) describes this therapy approach as “child-centered” because “a particular child at a particular time is being addressed by the treatment” (p. 138). It is key that the therapist “integrates the psycho-emotional with the physiologic aspects of the problem, in order to evolve a truly holistic therapy intervention” (p. 138). She advocates using music and movement interventions, with the occasional use of occupational therapy items such as a trampoline, teeter-totter, and therapy ball. In addition, the instruments used in therapy to alleviate tactile defensiveness (like the cabasa) can be compared to the “brushing” technique used as part of a “sensory diet”

in occupational therapy. Berger prefers to use spontaneous music making with this population since it allows quick changes as needed in the moment.

Berger (2002) also recommends several instruments and techniques for sensory adaptation goals (pp. 137-145): the acoustic piano, or electric keyboards when hyperacusis or other auditory sensitivities exist (to reduce the amount of vibrations permeating a room); stringed instruments for tactile bilateral motor-planning issues and mid-line activities; hand percussion instruments such as the cabasa (for tactile input), claves (for mid-line parallel organization of both hands); drums and Orff-type instruments (for motor planning, sequencing, cognition, eye-hand coordination); heavy mallets with grips for proprioceptive input; blowing instruments such as recorders, harmonicas, and kazoos for oral-motor stimulation; and lastly, vocalization. Vocal sound imitation is strongly recommended to organize language articulation, breath control, and auditory acuity.

### Combined Approaches

Some of the music therapy literature advocates the use of combined approaches drawing from behavioral, sensory integration, and improvisational orientations. Nelson, Anderson, and Gonzales (1984) and Thaut (1984) both attempted to synthesize the findings of research with the autistic population and proposed a treatment model delineating techniques and goal areas for individuals diagnosed on the autism spectrum. An early case study by Goldstein (1964) indicated improvements in social and communicative behaviors through use of a creative arts combined approach. The child with autistic characteristics was involved in singing, speech exercises, dance, movement with music, and art, each experience involving varying levels of structure.



Nelson et al. (1984), all occupational therapists, described ways to synthesize music activities according to the neuropsychological characteristics of children with autism and other pervasive developmental disorders. The authors recommend that if the child has problems adapting to the therapeutic environment due to “learned failure,” “the therapist’s objective should be to structure the activity to provide a high rate of success through readily observable feedback” (p. 103). This may be accomplished by using a directive strategy involving specific, frequent expectations, or using a less directive approach. Whether using a directive or non-directive strategy, the goal is to “show the child that he or she can have predictable, positive effects on the environment through his or her own actions” (p. 104). The authors caution that while the directive strategy may quickly lead to a sense of competency, using an overly directive approach could result in mere compliance rather than self-initiated creative exploration.

Nelson et al. (1984) also advise that music therapists carefully analyze each client’s level of responsiveness to different types of music stimuli. The importance of determining whether the child has hyporeactivity or hyperreactivity to stimuli is integral to the therapeutic experience. The under-aroused child probably needs extra sensory input such as louder music with direct rhythms and movement experiences, whereas the over-aroused child needs less intense input.

In regard to generalization and transfer of learning, Nelson et al. (1984) recommend that music therapists avoid the use of extra prompts when teaching a child to play an instrument or sing, because the child “may concentrate so fully on this prompt that they fail to transfer this learning when the prompt is removed” (p. 107). For generalization to occur, the music therapy experience must enhance the child’s ability to cope with change by providing a balance of repetitiousness and variations,

musical imitation, and interactive improvisation. Nelson et al. apparently advocate a combined approach of open improvisation and structured musical activities with this population.

Another characteristic that Nelson et al. (1984) pinpoint is the hypothesized problem with temporal perception in children with autism. Given this problem, music therapists should provide stimulus patterns to minimize the processing deficits. It is suggested that the therapist use stimuli that are of very short duration, so that if the child is experiencing an echoic perception “the first stimulus does not become confused with the presentation of the second stimulus in the temporal chain” (p. 109). One-syllable verbal instructions or one-gesture signs may be more effective than longer auditory or visual input. In addition, the authors suggest that the music therapists move and speak in synchrony with the child, adapting his or her own rhythm to that of the child, similar to the principles of Nordoff-Robbins Music Therapy. Playing musical instruments and doing action songs with movement may improve temporal perception as well as rhythmic movement and auditory-motor coordination.

Thaut (1984) developed a general music therapy treatment model for children with autism directed toward four specific treatment areas. The targeted areas were (a) impaired language development, (b) impaired socio-emotional development, (c) impaired development of cognitive areas, and (d) perceptual motor disturbances. Thaut states that since “learning processes in autistic children are always hampered by perceptual problems...it is suggested that one emphasize rigid insistence on eye contact, frequent recall of attention, repetition of instruction in consistent wording... and encouragement of perseverance during performance” (p. 8). These principles were said to improve attentive behavior in children with autism.

To meet language development goals, Thaut (1984) proposed several music

therapy techniques. “On a basic level the therapist should try to support and facilitate the desire or necessity for the child to communicate” (p. 8). This can be done through improvised musical accompaniment of the child’s expressions and movements to heighten his or her awareness of the music and therapist. The author recommends that if the child has understood communicative intentions, “words or phrases may be combined with a melodic or rhythmic pattern and a body movement” (p.8). It is also recommended that the therapist use strong melodic/rhythmic patterns in verbal instructions to maintain better attention and comprehension of the spoken word, and oral motor exercises such as playing wind instruments to strengthen functional use of the mouth. At a more complex level of development, the therapist should employ gross motor and oral motor imitation sequences, melodic shaping of vocal expressions through improvisational free singing, and integrate auditory, motor, and kinesthetic processes during the vocalization exercises. Resonating instruments may support vocal volume and duration, as well as oral motor coordination. Thaut suggests that sustained singing and graphic notations be used to refine speech inflection.

Like Alvin and Warwick (1991), Thaut (1984) suggests that socio-emotional development may be improved initially by providing an object relation for the child such as playing instruments. However, it is warned that the use of an instrument should be structured to minimize motility rituals or sensory overload. Listening experiences such as piano improvisation helps to establish awareness of sound. Eventually, physical contact should be offered like moving to music and holding the child’s hands, clapping, and leading the child’s hands on instruments. Thaut also recommends imitating or reflecting the child’s vocal sounds to engage in pre-verbal conversation. At a more complex level of socio-emotional development, the child could be involved in mood improvisations, introduced to a group setting, and use Orff

methods such as dance songs or instrumental pieces that combine movement, singing, body percussion, and instrument playing. Orff methods incorporating rondo form such as that reported in Hollander and Juhrs (1974) “can foster social learning by emphasizing the contrast between self (solo) and others (tutti)” (Thaut, 1984, p. 10).

For development of cognitive functioning, Thaut (1984) specifies several conceptual areas. Playing musical instruments, recognizing sounds, shapes and names, and using instruments of different colors can target labeling, number, and color concepts. Other areas that can be enhanced through music therapy are auditory memory, auditory-motor memory, matching skills, form perception, and decoding and encoding symbols. Thaut suggests using chants with body percussion, picture cards, hand signs, building geometrical constructions with instruments, and applying graphic notations as techniques in developing these cognitive areas.

Thaut’s model proposes techniques for perceptual and motor development and the integration of different sensory experiences. On a basic level, the “child can learn to relate tactile, visual, and auditory stimuli through manual exploration of instruments” (p. 12). To break stereotyped motility patterns, rhythmic activities at tempos other than the tempo of the pattern (e.g. body rocking) may be used. The therapist should be familiar with developmental motor patterns and use movement to music activities to integrate tactile/kinesthetic and auditory perception. Movement imitation exercises should include stretching, moving arms up and down, stepping back and forward, crossing the body at mid-line while hitting each other’s lummi sticks, or imitating cross-laterally. At a more advanced level, percussion playing can be useful for right/left awareness and limb coordination. In addition, “the child can acquire command over concepts of pitch, loudness, and tempo by responding with the desired quality on percussion-type or Orff instruments” (p. 12). Such control would

represent the most mature perceptual ability.

Using a broad variety of techniques in music therapy with individuals with autism, Snell (2002) believes the music therapist “works to (a) build a trusting relationship focused on the music and (b) create physical and emotional associations with songs, sounds, musical patterns, and themes which require timed actions or inaction based in reality” (p. 267). She makes several suggestions of techniques including using both structured and improvisational music interventions; using visual representations of music, commands, feelings, etc.; establishing transition songs; and coupling gestures with the transition songs. Fading of musical cues is emphasized as a way to generalize learned skills to a different setting. She also recommends that as basic skills are expanded upon in individual therapy, they should be used in a group setting as soon as possible. Other techniques Snell supports include: using age appropriate music, providing some form of choices in each session to provide a sense of control, encouraging the use of two or more skills simultaneously, using a variety of music and instruments, supporting and encouraging rhythmic and vocal synchronization (exact or approximate) with others, and breaking down and defining gestural social skills and rules. Snell stressed that the therapist should be aware of the continuum of placements and services available to the child in order to best support increased independence and socialization.

### Educational Theories and Programs

The educational programs for children with autism may have an influence upon the practice of music therapy with this population. This survey study seeks to determine which programs are most influential. In the publication Educating Children with Autism, the National Research Council (2001) outlines ten different model

programs for children with diagnoses on the autistic spectrum. These representative models were selected objectively through a review of recent professional journals in which a frequency count of the models was conducted. Most of these ten models began as research programs and then gradually evolved into clinical programs. All of the ten models emphasize individualized, flexible programming around the needs of the child. The models and a description of each per the National Research Council follow.

### *1. Children's Unit at the State University of New York at Binghamton*

This program was designed in 1975 by Romanczyk, Lockshin and Matey as an intensive three-year program for children with severe behavioral disorders. "The program operates from a deficit-oriented perspective and primarily uses traditional applied behavior analysis techniques, although more naturalistic procedures may be implemented as children progress" (p. 142). There is an "extensive computerized assessment and monitoring system" and "an elaborate goal selection curriculum" (p. 142).

### *2. Denver Model at the University of Colorado Health Sciences Center*

Designed by Rogers and colleagues, this program opened in 1981 as the Playschool Model, which was a demonstration day treatment program. The model is developmentally oriented and based on the premise that play is a primary vehicle for learning social, emotional, communicative, and cognitive skills during early childhood. The "overarching curriculum goals are to increase cognitive levels; increase communication through gestures, signs, and words; and enhance social and emotional growth through interpersonal relationships with adults and peers" (p. 142). This model is based on principles of Piagetian theory.

### *3. Developmental Intervention Model at The George Washington University School of Medicine*

Designed by Greenspan and Weider, this program is derived from a developmental orientation and is relationship-based. There is a home component of intensive interactive “floor-time” work, in which an adult follows a child’s lead in play and interaction, and children concurrently participate in individual therapies and early education programs. Floor-time sessions at home are aimed at “pulling the child into a greater degree of pleasure” (p.142). “The curriculum is aimed at six developmental capacities: shared attention and regulation; engagement; affective reciprocity and communications through gestures; complex, pre-symbolic, shared social communication and problem-solving; symbolic and creative use of ideas; and logical and abstract use of ideas and thinking” (p. 142).

### *4. Douglass Developmental Center at Rutgers University*

This center has a continuum of three programs that serve young children including an intensive home-based intervention, a small-group segregated preschool, and an integrated preschool. The curriculum is developmentally sequenced and uses applied behavioral analysis techniques, beginning with discrete-trial formats and gradually shifting to more naturalistic procedures. Teaching goals across the three sequential programs range from compliance, toilet training, and elimination of serious behavior problems to communication, cognitive, socialization, and pre-academic skills. (p.143)

### *5. Individualized Support Program at the University of South Florida at Tampa*

This program is implemented in children’s homes and community settings

during a short period of intensive assistance and ongoing follow-up. It is meant to be an adjunctive program to other special educational services and is oriented toward helping families gain the knowledge and skills needed for effective intervention and advocacy for the child. The essential elements of this model include: development of functional communication skills, facilitation of the child's participation in socially inclusive environments, and multifaceted family support. (p. 143)

*6. Learning Experiences, an Alternative Program for Preschoolers and their Parents (LEAP) at the University of Colorado School of Education*

LEAP opened in 1982 as a federally funded demonstration program and was then incorporated into the Early Childhood Intervention Program at the University of Pittsburgh. Recently, the original classrooms continue to operate in Pittsburgh, but new LEAP classrooms are being developed in the Denver Public School System. LEAP consists of a preschool program, a behavioral skill training program for parents, and national outreach activities. This program's curriculum is known for its peer-mediated social skill interventions in inclusive classrooms. Goals are targeted in social, emotional, language, adaptive behavior, cognitive, and physical development areas. The curriculum "blends a behavioral approach with developmentally appropriate practices" (p. 144).

*7. Pivotal Response Model at the University of California at Santa Barbara*

In recent years, the primary focus of this model has been on early intervention. This program's ultimate goal is to provide individuals with autism with the social and educational proficiency to participate in inclusive settings using a parent education approach. Intervention consists of in-clinic and one-on-one home teaching while children concurrently receive special education services. Using naturalistic behavioral



interventions, the “overriding strategy is to aim at change in certain pivotal areas (e.g., responsiveness to multiple cues, motivation, self-management, and self-initiations)” (p. 144).

*8. Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) at the University of North Carolina School of Medicine at Chapel Hill*

Founded in 1972, this program is a statewide autism program that serves people of all ages. TEACCH is “based on a structured teaching approach, in which environments are organized with clear, concrete visual information” (p. 144). Parents are co-therapists and programming is individually tailored to the needs, strengths, learning style, and interests of the child as well as the needs of the family. TEACCH has developed a communication curriculum that uses behavioral procedures as well as more naturalistic procedures and alternative communication strategies for non-verbal children.

*9. The University of California at Los Angeles Young Autism Project*

Originally developed by Lovaas, this behaviorally-oriented program began during the 1970s. The curriculum is delivered in a one-to-one discrete-trial format, which is implemented by parents and trained therapists who work in a child’s home. The “treatment is focused primarily on developing language and early cognitive skills and decreasing excessive rituals, tantrums, and aggressive behaviors” (p. 145). The intervention focuses upon teaching children to respond to basic requests, to imitate, to play with toys, to interact with family, language skills, emotional discriminations, pre-academic skills, and observational learning.

### *10. Walden Early Childhood Programs at the Emory University School of Medicine*

This program was developed in 1985 at the University of Massachusetts at Amherst and relocated to Emory University in Atlanta where toddler and pre-kindergarten programs were added. The classrooms are comprised of children with autism with a majority of typical peers, and the teaching approach is behaviorally based, although goal selection has a developmental influence. Initial goals of the toddler program include “sustained engagement, functional verbal language, responsiveness to adults, tolerance and participation with typical peers, and independence in daily living (e.g., toilet training)” (p. 145). The preschool targets “language expansions and beginning peer interaction training,” and the pre-kindergarten emphasizes “elaborated peer interactions, academic skills, and conventional school behaviors” (p. 145).

#### **Augmentative and Alternative Communication**

In the music therapy literature, the use of sign language or gestures is frequently mentioned as a technique in clinical work with persons with autism. The National Research Council (2001) states that there have been numerous experimental studies of the efficacy of teaching sign language to children with autism. “These studies have demonstrated that total communication (speech plus sign language) training has resulted in faster and more complete receptive and expressive vocabulary acquisition than speech training alone for many children with autism” (p. 58). There is evidence that sign language enhances the use of speech for some children, and there is no evidence that it interferes with speech development. It is important to note that the level of competence attained in sign language may be related to a motor impairment, and it is very rare to find a child who learns to sign fluently and flexibly.

Buday (1995) studied the effects of music paired with signed and spoken words on sign and speech imitation by children with autism. The participants were ten children who had been exposed to *simultaneous communication*, the incorporation of a manual or gestural system of communication paired concurrently with speech. The number of signs and spoken words correctly imitated in a story verse song were measured in two different conditions. In one condition, the targeted seven signed and spoken words were sung with the first verse of music. In the other condition, a different set of seven signed and spoken words were rhythmically spoken without music in the second verse of the song-story. Each child was tested individually for a series of four consecutive days, five trials each day, for two weeks. Results showed that the average number of signs correctly imitated during the music condition was significantly higher than the number of signs imitated during the rhythm condition. The average number of spoken words correctly imitated during the music condition was significantly higher as well. These findings suggest that music may enable a child with autism to focus more intently to on-task behaviors and enhance short-term memory recall. Singing paired with sign language may increase attending skills as well as verbalizations in children with autism.

The use of visual communication systems has become a common augmentative communication technique with children with autistic spectrum disorders due to the visual strengths of many children. In 1994, Frost and Bondy developed a widely used visual symbol system, the Picture Exchange Communication System (PECS). PECS is “a systematic behavioral program that teaches a child to initiate communicative requests by approaching the communication partner and exchanging the symbol for the desired object” (National Research Council, 2001, p. 59). In a case review of a group of preschoolers who were taught PECS, Frost and Bondy found that “it took more

than a year after initiating PECS to observe independent speech”, and “speech tended to develop once the children were able to use 30-100 symbols to communicate” (National Research Council, p. 59). Another widely used visual system utilized in the TEACCH program in North Carolina is the visual schedule. The visual schedule enables a child with autism to understand the sequence of an activity and routine through visual input as it provides predictability during transitions.

Social stories, a visually based system of delivering social information, was first developed and described by Carol Gray in 1993. Gray (1998) describes the social story as “a short story that adheres to a specific format and guidelines to objectively describe a person, skill, event, concept or social situation” (p.171). An exact method for creating social stories involving a target ratio of different types of sentences (descriptive, perspective, directive, and control) has been delineated. The stories are individualized for each student’s goals and interests, and may be presented as solely printed words, words and pictures, or audio or videotaped for the student. This technique has been used with persons labeled with mental retardation, high and lower functioning autism, and Asperger’s Syndrome. The relatively new technique of social stories has received “widespread support and anecdotal reports of efficacy, as well as some research-based accounts” (Brownell, 2002).

Brownell (2002) investigated the effect of a musical presentation of social story information on the behaviors of four students with a primary diagnosis of autism. Using a case study format, this study involved four first- and second-grade students, all of whom were verbal and possessed at least pre-reading skills. Brownell created individualized social stories for each student using the procedure described by Gray. These stories involved specific target behaviors defined after consultation with the classroom teacher. The story topics included following directions, listening to the

teacher, minimizing “TV Talk,” and using a quiet voice. Original music was then composed using the text of each social story as lyrics. The teacher or instructional associate assigned to the student took baseline data on the target behavior. After this, the social story was either read or sung to the student by the author in private, according to an ABAC/ACAB counterbalanced multiple-treatment design. The student was then returned to the classroom for intervention data collection by the teacher or associate. Five days of data collection took place for each condition. Results from all four cases indicated that “both the reading condition (B) and the singing condition (C) were significantly more effective in reducing the target behavior than the no-contact control condition (A)” (p.117). The frequency of the target behaviors occurred least often in the singing condition, although only significantly so with one participant. These results suggest that musically adapted social stories are an effective treatment option to use with this population.

### Controversial Treatments

#### Auditory Integration Training

A controversial treatment program involving the application of modified music is gaining popularity among parents of children with autism. Auditory Integration Training (AIT) was originally developed by Guy Berard in France in the 1960s and was introduced to the United States in 1991. The first step of AIT is “to obtain a detailed audiogram which determines auditory thresholds to a larger series of frequencies (octave and interactive frequencies) than are typically used to measuring hearing ability” (Committee on Children with Disabilities, 1998, p. 431). After examination of the audiogram to determine existence of hyperacusis, treatment

consists of listening to music that has been computer-modified to remove frequencies to which the individual is hypersensitive, and to reduce the predictability of the auditory patterns. The treatment program requires 20 half-hour sessions during a 10- to 12-day period, with two sessions conducted daily. Audiograms are repeated midway through the treatment and at the end to determine progress. AIT practitioners report that individuals in treatment demonstrate many benefits: “improved attention, improved auditory processing, decreased irritability, reduced lethargy, and improved expressive language and auditory comprehension” (p.431).

Several limitations of AIT were reported by the Committee on Children with Disabilities (1998). Concerning the basic audiogram procedures, it was noted that “current objective electrophysiologic measures such as auditory-evoked brainstem responses fail to demonstrate differences in hearing sensitivity between autistic and nonautistic children” (p. 431). It was also mentioned that there could be potentially unsafe sound levels produced by the equipment used in AIT. In addition, little scientific documentation exists to support the claimed benefits listed above.

Rimland and Edelson (1995) conducted a pilot study with 17 subjects diagnosed with autism. One group received auditory training and the other group listened to the same unmodified music under identical conditions. Findings indicated improvements in behavior, auditory memory, comprehension, and ability to communicate in the treatment group. However, random assignment to groups was not used and a portion of the subjects showed no evidence of hypersensitivity to sound prior to the study. These issues detract from the validity of the findings.

Bettison (1996) studied AIT with 80 children diagnosed with autism or Asperger’s Syndrome as well as hyperacusis. The subjects were randomized to two groups; one group received AIT and the other listened to unmodified music. Each

child attended two thirty-minute listening sessions at least four hours apart each day for ten consecutive days. The music used was not described in detail except that it was of different styles and “met the treatment requirements of a wide frequency range and maximum variety of different, short tracks” (p. 364). In the AIT condition, the music for each child was modified according to his or her individual pretest audiogram as specified by Berard. The children were assessed at one month, three months, six months, and one year after the intervention using the individual’s audiograms and various behavior checklists and vocabulary tests. Significant improvements “in behavior and severity of autism were maintained for 12 months by both groups” (p. 361). Verbal and performance IQ increased significantly 3 to 12 months after interventions. These findings suggest that both AIT and “the program of structured listening to selected music may lead to reductions in not only hypersensitivity to sound but at least some of the other abnormal responses to sound commonly associated with autism” (p. 373).

#### Facilitated Communication

The Committee on Children with Disabilities of the American Academy of Pediatrics (1998) describes Facilitated Communication (FC) as “a method of providing physical assistance to a nonverbal person in typing out words using a typewriter, computer keyboard, or other communication device” (p. 431). This manual prompting is claimed to provide expressive language abilities to a wide range of individuals, including those with autism. This technique is controversial because several scientific studies have revealed that facilitators may unintentionally influence the communication. In fact, in 1994 the American Speech-Language-Hearing Association stated that “there is a lack of scientific evidence validating FC skills and a

preponderance of evidence of facilitator influence on messages attributed to communicators” based upon over 50 research studies of FC (National Research Council, 2001, p. 62). Despite research findings, several states have supported the use of FC and anecdotal success stories have attracted parents to this technique.

In her book I Dreamed I was Normal, music therapist Ginger Clarkson (1998) supports the use of FC and describes her experiences using this technique with individuals with autism. She states that “after years of practice, some individuals with autism have been weaned completely from physical touch, so that they can type without support” (p. 33). She further explains that “the element of physical touch in FC may counter motor problems that are similar to those of patients with Parkinson’s disease, and thus encourage them to undertake the movements required for typing” (p. 34). Clarkson describes three clients and their mind-opening communications made through the incorporations of this technique. Topics communicated through FC ranged from musical preferences and personal feelings about music therapy, to dreams and spiritual philosophies. The use of FC in the music therapy sessions also enabled Clarkson to implement Guided Imagery and Music (GIM) techniques. Using GIM with the autistic population is rarely found in the music therapy literature and presents an interesting treatment option for those who have some form of verbal communication. However, the National Research Council (2001) warns that “any significant message communicated by a child through FC should be validated through qualitative and experimental analysis” (p. 62).



## METHOD

### Participants

The researcher submitted a request, including a description of this study and a copy of the survey instrument, to the American Music Therapy Association (AMTA) for a list of music therapists who currently work with clients diagnosed with autism spectrum disorders. Permission to use this list was obtained from the AMTA, and the organization supplied the researcher a list of 642 current AMTA members/music therapists. Of these music therapists, 543 had listed emails and were invited via email to participate in this study. However, the initial email invitation failed in transmission to 82 of these 543 music therapists (possibly due to email blocking technology or address changes) leaving a total of 461 potential participants. The demographic information of these participants was questioned in a section of the survey and is described later in the results section of this paper.

### Survey Instrument

The researcher designed an original survey instrument after a thorough review of pertinent literature (see Appendix C). This preliminary instrument was then discussed with six esteemed music therapists with expertise in treating the autistic population, as well as the three members of the thesis committee. From the revisions, a pilot survey was created and sent to six expert music therapists for their review in order to determine validity of the instrument. Four of the six music therapists participated in this pilot process. Their comments and suggestions, as well as those of

the thesis committee, were incorporated into the final survey instrument. This final version was adapted into an Internet web page using an online survey company, Websurveyor®.

The 38-item survey included seven topic areas: Therapist Demographics, Client/Session Description, Clinical Approach, Treatment Influences, Music Therapy Techniques, Inclusion Practices, and General Questions. The Therapist Demographics section included questions designed to describe the participants' background such as experience with this population, region of practice, level of education, and credentials. Questions about the clients' ages, diagnoses, and the characteristics of the sessions (length, individual or group, etc.) comprised the Client/Session Description section. The Clinical Approach subheading included questions about music therapy theoretical orientations commonly used, as determined through the literature review, when working with the autistic population. The Treatment Influences section included questions about techniques and theories that originated in disciplines other than music therapy, but may influence music therapy practice. The Music Therapy Techniques section consisted of questions about techniques and interventions specific to music therapy practice. Questions about music therapy with this population in an inclusive setting, including inclusion goals and interventions, were in the Inclusion Practices section. This section was added as a specific request by the pilot study participants to further define music therapy inclusion practices. The General Questions section consisted of questions about the musical receptivity and ability of this population, the effectiveness of music therapy, and a comments section to provide an opportunity for additional feedback.

## Procedure

After obtaining approval of this study by the University's Human Subjects Institutional Review Board (see Appendix A), the 461 music therapists identified by the AMTA database were contacted via an email consent letter (see Appendix B) containing a hyperlink to the online survey. As clearly stated on the survey page, completion of the survey was considered as consent to participate in the study. The web page was made available to the participants for three weeks. After the second week, a reminder email was sent to the 461 music therapists. At the end of the third week, the data was downloaded using Websurveyor®'s software to the researcher's personal computer to which only she had access. All survey data was received anonymously, showing only the answers to survey questions without email addresses or other identifiers. The results were graphed using the Websurveyor® software and described in narrative form.

## Limitations

Using an online survey format rather than the traditional paper survey format excludes those music therapists with no computer access and unlisted or no email addresses. However, considering the accessibility of computers and the reported response speed, high response rate, and cost efficiency of online surveys (Sheehan, 2001), this format was deemed acceptable. In addition, the use of the AMTA database for selection of participants may exclude credentialed music therapists who are not members of AMTA. It also may include music therapists who have very little experience with the autism population. However, the demographics section of this survey study incorporates questions about the extent of experience with this population in an effort to illuminate this issue and make comparisons.

## RESULTS

Of the 461 survey links distributed by email, 171 completed surveys were submitted online, yielding a 37% response rate. It should be noted that there is a possibility that more than 461 music therapists received the survey hyperlink due to participants forwarding the email invitation to other music therapists. The results of each question as well as cross tabulations of questions are presented below.

### Demographics: Therapist

*Question 1: What is the length in years of your experience with this population?*

As shown in Figure 1, 39% of the respondents ( $n = 65$ ) reported having five or less years of experience working with this population. Twenty-nine percent or 49 respondents have six to ten years of experience, 12% have 11 to 15 years of experience, 9% have 16 to 20 years, and 11% of respondents have over twenty years of experience in this area. Therefore, the majority of participants in this survey (61%) have at least six years of experience working with individuals diagnosed on the autism spectrum. The level of experience was correlated to answers to the other survey questions in following sections.

What is the length in years of your experience with this population?

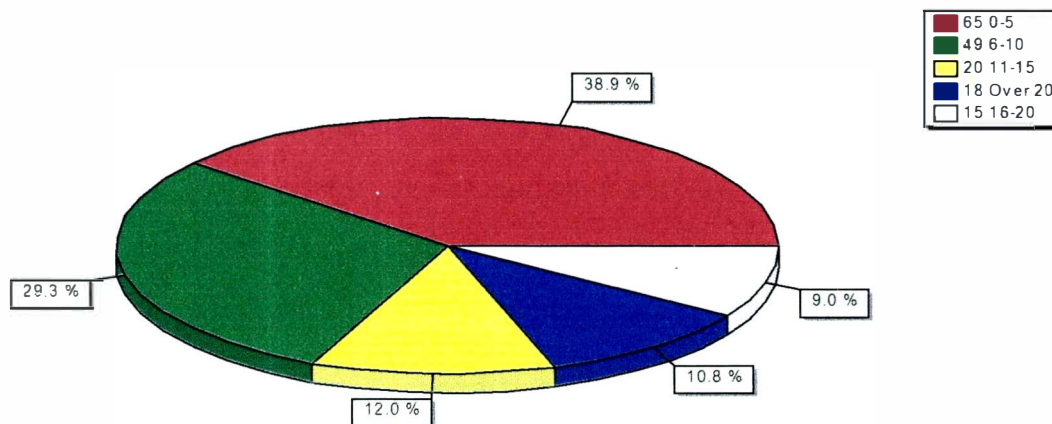


Figure 1. Level of Experience

*Question 2: If you work in a school district, please specify the name of the district and city/state.*

The respondents specified 103 different school districts in 28 states, with California ( $n = 18$ ) and Texas ( $n = 14$ ) accounting for the most responses. Nine districts were identified in Ohio and seven in Massachusetts. Respondents work with children on the autism spectrum in five districts in each state of Tennessee, New York, and Michigan. Four districts each were identified in the states of Virginia and Connecticut, and three districts in Illinois and Missouri. Two districts each were specified in Arizona, Georgia, New Mexico, Maryland, and Pennsylvania. Respondents indicated one district each in the states of Indiana, Alabama, Utah, Wisconsin, Kansas, Delaware, North Carolina, Kentucky, Nevada, and South Carolina. In addition, respondents indicated working in “various” New Jersey and Southwestern Pennsylvania school districts, but the number of districts was not specified.

*Question 3: AMTA Region in which you work:*

Figure 2 portrays the geographical distribution of the 171 respondents. Although fairly evenly distributed, the two regions most represented in this survey were the Great Lakes (23%) and Mid-Atlantic (21%) regions. Sixteen percent of respondents work in the Western region and 12% in the Southwestern region. Nine percent of respondents reported working in the Midwest, and the same percentage works in the Southeastern region. The region with the least number of respondents ( $n = 13$ ) is New England with approximately 8% of the total respondents. Two respondents reported working outside of the United States. No respondents reported working in the South Central region.

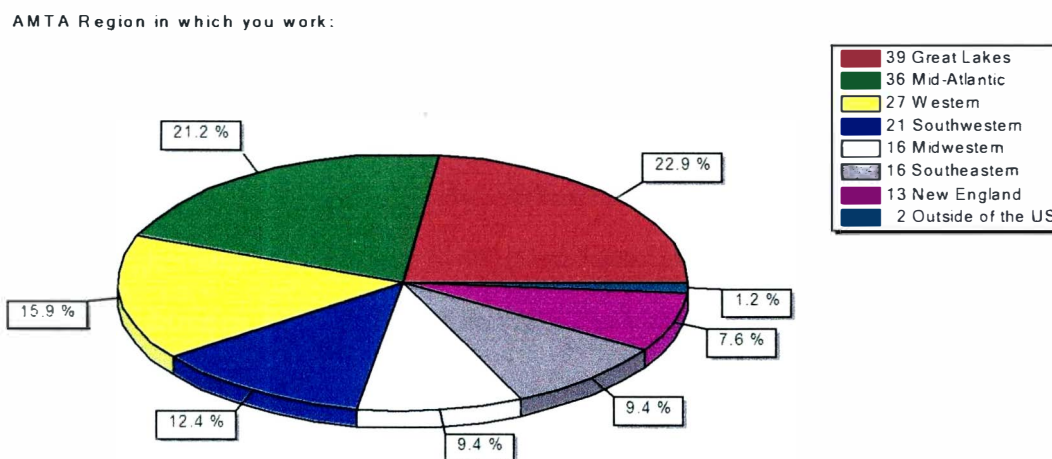


Figure 2. AMTA Region of Respondents

*Question 4: Your Credentials/Professional Designations:*

Ninety-one percent of the respondents ( $n = 155$ ) hold the Music Therapist-Board Certified (MT-BC) credential, 4% ( $n = 7$ ) are Certified Music Therapists

(CMT), and only 2 respondents (1%) selected Advanced Certified Music Therapist (ACMT). Nineteen percent ( $n = 33$ ) selected “Other” and submitted responses including CCC-SLP (Speech Language Pathologist), Licensed Mental Health Counselor, Licensed Professional Counselor, MTA (Canadian credential), MT-BVM (German credential), Nordoff-Robbins Music Therapist, Neurologic Music Therapist, OTR/L, Teaching Certification in Music Education, and Wisconsin Music Therapist-Registered. The credential RMT (Registered Music Therapist) was offered as a response option, but no one responded with this answer.

*Question 5: Type of facility in which you work with this population:*

Forty-three percent of respondents work with this population in a public school setting. At a close second, 40% of the respondents service this population in private practice. Twenty-five percent of the survey participants selected “Other” and responses included an Autism Society, Early Intervention programs, community music schools, day programs, ICF/MR facility, In-home, rehabilitation hospital, retail music store, summer camp for children with disabilities, and University Music Therapy Clinics. Thirty-one or 18% of respondents work in a Preschool/Day Care setting, 13% work in a Music Therapy Agency, and 8% work in a Group Home. Eleven of the participants (6%) work with individuals on the autism spectrum at a treatment center. Six music therapists participating in the survey work with this population in a medical hospital setting, and only two respondents work in each a mental health center and a nursing home/assisted living facility. One music therapist reported working in an inpatient psychiatric unit. A graphic presentation of this data can be seen in Figure 3.

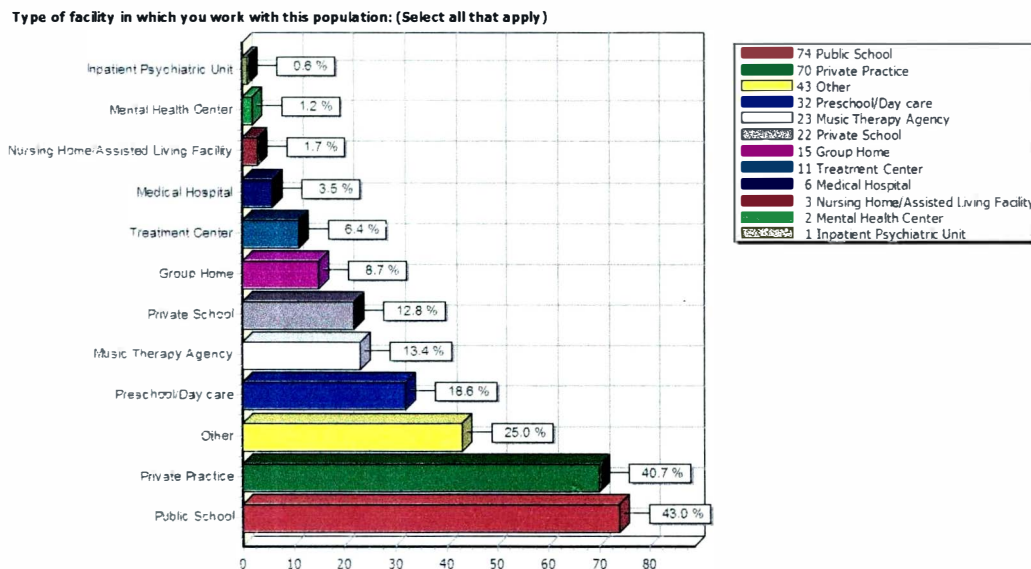


Figure 3. Type of Facility

*Question 6: Highest level of education completed:*

Forty-eight percent ( $n = 81$ ) of the music therapists surveyed answered that a Bachelor's degree (or its equivalent) in Music Therapy is the highest level of education completed. Twenty-eight percent ( $n = 48$ ) hold a Master's degree in Music Therapy, while 14% ( $n = 23$ ) have a Master's degree in a field other than Music Therapy. Three respondents (2%) have a Bachelor's degree in another field, and three have a Doctoral degree in another field. Only two respondents (1%) hold a Doctoral degree in Music Therapy. Five percent of the music therapists ( $n = 9$ ) selected "Other" and specified degrees in other fields as well as post-graduate music therapy certification.



## Client/Session Description

*Question 7: Approximately what percentage of your entire caseload holds a diagnosis of an autism spectrum disorder (ASD)?*

As shown in Figure 4, 32% of the respondents indicated that 25 to 50% of their entire caseload holds an ASD diagnosis. An almost equal percentage of music therapists (31.5%) reported that less than 25% of their caseload is diagnosed on the autism spectrum. Twenty-two percent of the music therapists selected the response of 50 to 75% having ASD, and 14% of respondents answered that 75 to 100% of their caseload is diagnosed with ASD.

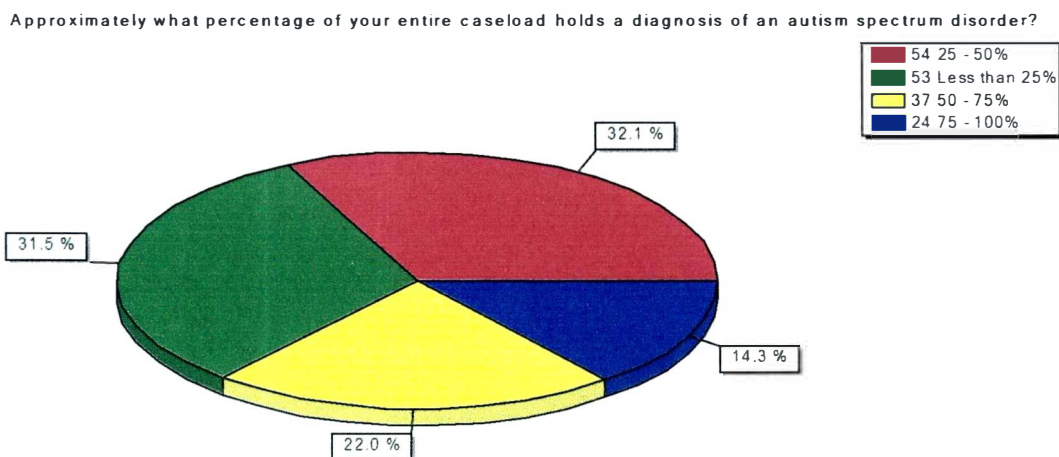


Figure 4. Percentage of Caseload with Autism Spectrum Disorders

*Question 8: What is the current age range of your clients on the autism spectrum?*

Figure 5 shows that nearly 70% of music therapists work with clients who are five to twelve years of age. Thirty-nine percent of respondents work with youth aged

13 to 20 years, and 38% work with children within the zero to four age range. Fifteen percent of the music therapists surveyed work with clients with autism who are 21 and over. Nineteen percent of those surveyed selected “All of the above,” indicating that they work with all ages of clients with ASD.

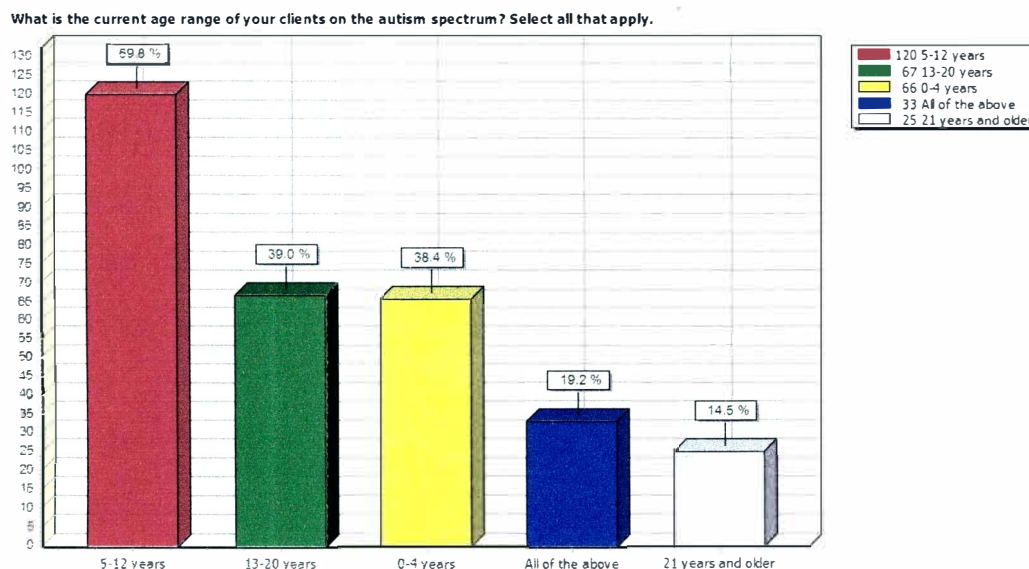


Figure 5. Age Range of Clients

*Question 9: What is the most common diagnosis among your clients on the autism spectrum?*

The responses to this question give a view of the prevalence of the different diagnoses within the autism spectrum. The majority of respondents (84%,  $n = 140$ ) most often work with individuals diagnosed with Autism/Autistic Disorder. Thirty-eight percent of music therapists ( $n = 21$ ) reported that the most common diagnosis among their clients with ASD is Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS). Four respondents (2%) find Asperger's Syndrome to be the most common diagnosis among their clients on the autism spectrum. One respondent

each reported most often working with individuals diagnosed with Rett's Syndrome and Childhood Disintegrative Disorder.

*Question 10: What is the average length of music therapy treatment for your clients with autism spectrum disorders?*

As shown in Figure 6, the most common length of treatment is 1 to 3 years, with 35% of respondents selecting this option. Nearly 29% of music therapists work with this population for 3 to 5 years on average. Fourteen percent of respondents treat clients for 5 to 8 years, and 13% of the respondents treat clients with this diagnosis for six months to one year on average. A small percentage of music therapists (2%) selected an average treatment length of one to six months.

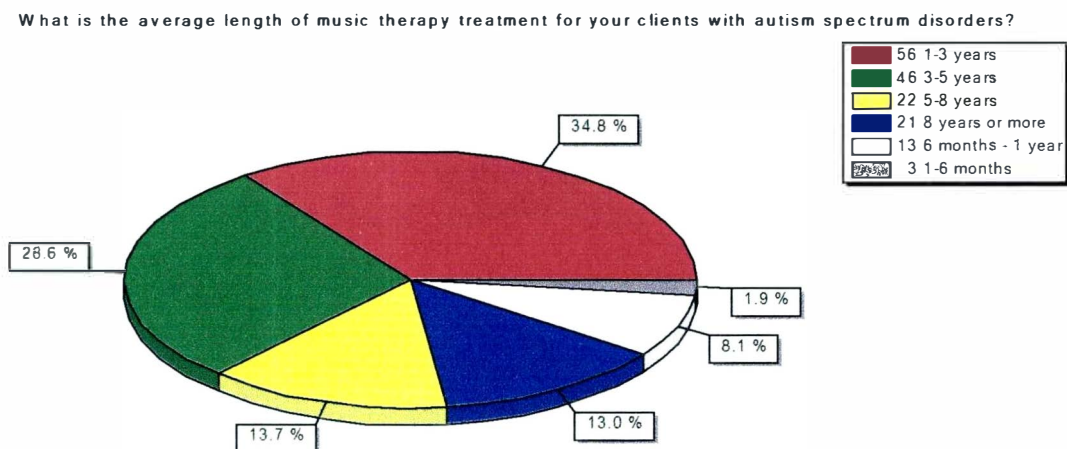


Figure 6. Average Length of Treatment

*Question 11: Approximately what percentage of your caseload diagnosed with autism spectrum disorders is involved in individual sessions?*

Response options for this question were: (a) None, (b) Less than 25%, (c) 25-

50%, (d) 50-75%, and (e) 75-100%. Sixty-six (40%) of the music therapists surveyed work with 75 to 100% of their clients with ASD in an individual session format. The second largest percentage of respondents (22%) reported working with less than 25% of their clients with ASD in this format. Thirteen percent of music therapists do not work individually with their clients on the autism spectrum. Another 13% of respondents reported working with 25 to 50% of their clients individually, and 12% work with 50 to 75% of their clients in individual sessions. (See Figure 7.)

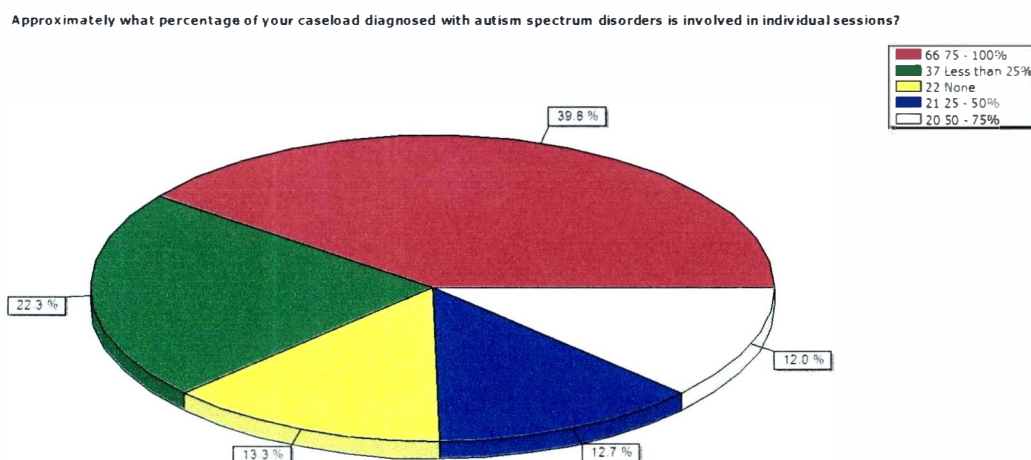


Figure 7. Individual Session Format

*Question 12: Approximately what percentage of your caseload diagnosed with autism spectrum disorders is involved in group or dyadic sessions?*

As Figure 8 shows, 29% ( $n = 48$ ) of the music therapists surveyed work with 75 to 100% of clients of this diagnosis in a group or dyadic setting. Twenty-three percent of respondents work with less than 25% of their clients in this setting, and 18% of respondents indicated no group or dyadic sessions. Seventeen percent of the music therapists have 25 to 50% of their clients in group or dyadic sessions. Lastly,

14% of respondents see 50 to 75% of their clients with ASD in group or dyadic sessions.

Approximately what percentage of your caseload diagnosed with autism spectrum disorders is involved in group or dyadic sessions?

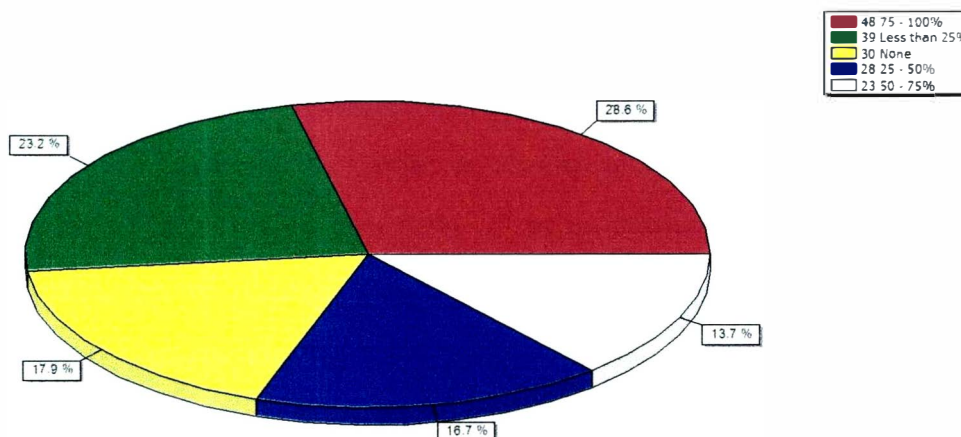


Figure 8. Group or Dyadic Session Format

*Question 13: In general, how often do you have sessions with your clients with this diagnosis per week?*

The majority (67%) of the music therapists have sessions once a week with this clientele. Twenty-five percent of respondents see clients twice weekly, and only 2% of respondents answered three times per week. Two percent also answered having sessions four times per week with these clients. Five percent of the music therapists hold sessions five or more times per week.

*Question 14: In general, approximately how long is each of these clients' sessions?*

The majority of respondents (55%) have sessions with their clients diagnosed with ASD for approximately thirty minutes. Generally, 26% of music therapists

conduct 45-minute sessions, and 15% of respondents treat their clients in one-hour sessions. Only six respondents have sessions less than 30 minutes in length.

*Question 15: Approximately what percentage of your clients is involved in music therapy sessions with typically developing peers?*

Fifty-two percent of respondents ( $n = 86$ ) replied that none of their clients are included in music therapy with typically developing peers. Another 30% of music therapists ( $n = 49$ ) treat less than 25% of these clients in this session format. Therefore, 82% of the respondents have none or less than 25% of their clients included with typically developing peers during music therapy. Nine percent ( $n = 15$ ) of the respondents conduct music therapy in an inclusive environment for 25 to 50% of their clients. Only 2% of music therapists ( $n = 3$ ) responded that they treat 50 to 75% of their clients with ASD in sessions with typically developing peers. Seven percent of music therapists ( $n = 12$ ) reported that a large percentage of their clients with ASD (75-100%) are in sessions with typical peers. (See Figure 9.)

Approximately what percentage of your clients are involved in music therapy sessions with typically developing peers?

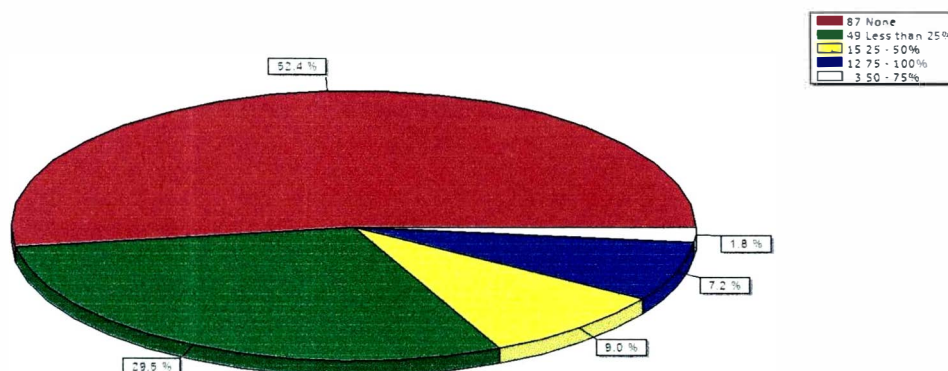


Figure 9. Music Therapy With Typical Peers



*Question 16: For approximately what percentage of your clients with autism spectrum disorders is music therapy included in the Individualized Education Program (IEP)?*

The largest percentage of respondents (36%) reported that none of their clients with ASD have music therapy services included in the IEP. In addition, 23% of music therapists responded that less than 25% of their clients have IEP-indicated music therapy. However, 29% of respondents specified that 75 to 100% of their clients have music therapy services designated in the IEP. Six percent of the survey participants reported music therapy services in the IEP for 50 to 75% of their clients with ASD, and another 6% reported this for 25 to 50% of their clients with this diagnosis.

For approximately what percentage of your clients with autism spectrum disorders is music therapy included on the Individualized Education Program?

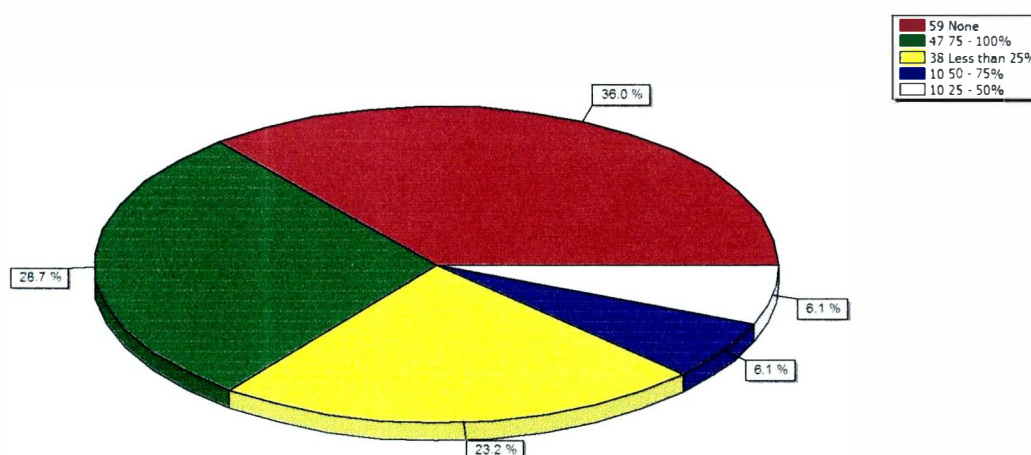


Figure 10. Music Therapy Included in IEP

*Question 17: Approximately what percentage of your sessions involves co-treatment with other professionals?*

As shown in Figure 11, 40% of music therapists co-treat with other professionals for less than 25% of their sessions. Thirty-five percent of the

respondents do not co-treat when working with this population. Almost 13% co-treat with other professionals in 25 to 50% of their sessions. Only 8% of music therapists co-treat in 75 to 100% of sessions with clients with ASD. A small percentage of respondents (4%) co-treat in 50 to 75% of their sessions.

Approximately what percentage of your sessions involves co-treatment with other professionals?

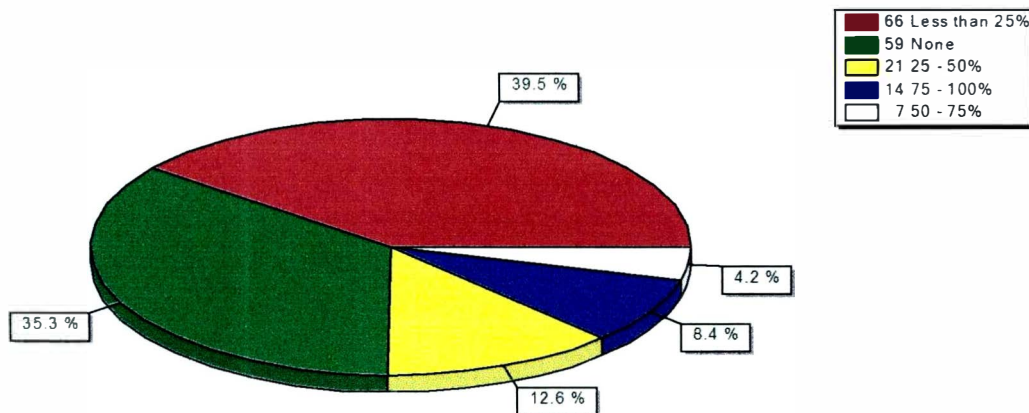


Figure 11. Co-treatment Practices

### Clinical Approach

*Question 18: Select any and all of the following clinical approaches that influence your work with persons diagnosed with autism spectrum disorders.*

Sixty-nine percent of the respondents selected “Behavioral Music Therapy (Madsen)” as influencing their work with this population. The second most influential approach was “Clinical Improvisation (Bruscia),” selected by 47% of the music therapists. At a close third place, “Nordoff-Robbins Music Therapy” was indicated as influential in music therapy with this population by 44% of respondents. Almost 36%



of the music therapists are influenced by the “Orff-Schulwerk (Orff)” approach, and 28% of respondents selected “Free Improvisation (Alvin).” “Neurologic Music Therapy (Thaut)” influences the practice of 23% of respondents. Eleven of the music therapists surveyed (6%) are influenced by the “Didactic Music Therapy” approach as defined by the Argentinean psychiatrist and music therapist Rolando Benenzon. Four percent of respondents are influenced by the “Guided Imagery and Music (Bonny)” in the treatment of individuals on the autism spectrum. (See Figure 12).

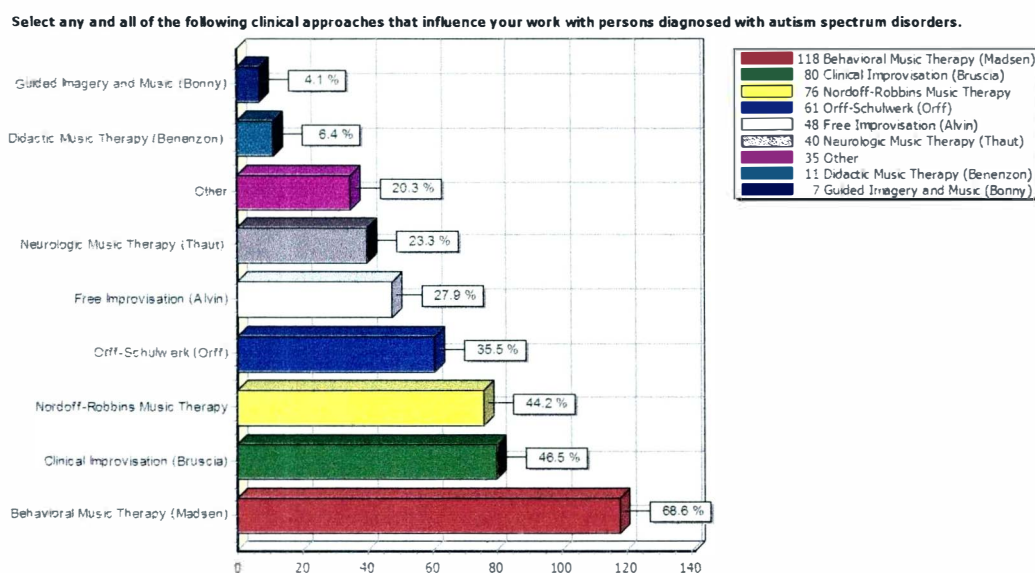


Figure 12. Clinical Approach (All Respondents)

Thirty-five respondents (20%) selected “Other” and specified music therapy approaches not listed in the response options, as well as approaches from outside of the field that are addressed in other sections of the survey. Some of the influences mentioned are: Authentic Movement and Authentic Voice, Biomedical Music Therapy, Continuum of Awareness (Boxhill), Dalcroze Eurythmics, Developmental

Music Therapy (Wood), Music therapy utilizing paraverbal techniques, Object Relations Music Therapy (Dvorkin), and Sensory Integration in Music Therapy (Berger).

Interestingly, the influences of different music therapy approaches are more balanced according to music therapists with 16 or more years of clinical experience with this population. Of these 36 music therapists, the top three influences are Behavioral Music Therapy (64%), Nordoff-Robbins Music Therapy (58%), and Clinical Improvisation (58%). This is a difference of only six percentage points between the top three influences, rather than the 21 percentage point difference between the top two approaches (Behavioral and Clinical Improvisation) selected by all respondents. See Figure 13 for a graphic presentation of the approaches chosen by this subset of respondents.

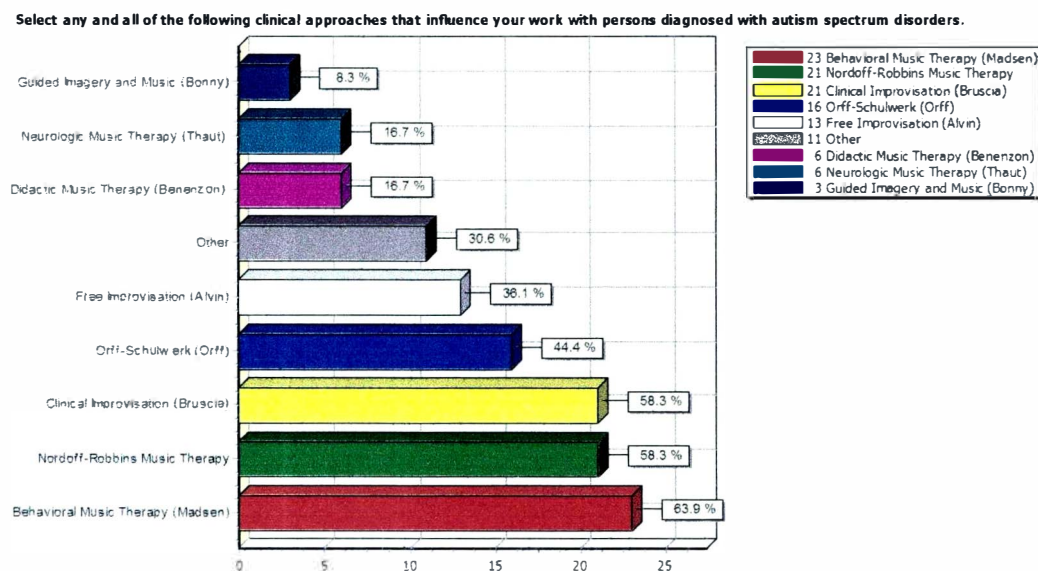


Figure 13. Clinical Approach (Respondents With 16 or More Years Experience)

The results of this question also varied by region of practice. In the Great

Lakes Region, the top four influences are Behavioral Music Therapy (67% of respondents), followed by Nordoff-Robbins Music Therapy (49%), Orff-Schulwerk (39%), and Clinical Improvisation (36%). In the Western region, Behavioral Music Therapy is a major influence in work with this population, selected by 81% of respondents. The next three approaches most often selected by this region are Clinical Improvisation (56%), Nordoff-Robbins Music Therapy (41%), and Orff-Schulwerk (37%). The Southeastern region also selected Behavioral Music Therapy as a major influence (81% of respondents), followed by Orff-Schulwerk and Clinical Improvisation, both selected by 50% of music therapists in this region, and Nordoff-Robbins Music Therapy (44%).

Respondents in the Midwest region also selected Behavioral Music Therapy (63%) as the most influential in their clinical work with individuals on the autism spectrum. Forty-four percent of music therapists in this region selected Neurologic Music Therapy, and 31% selected Orff-Schulwerk. Clinical Improvisation is the least influential approach in this region, with only 18% of respondents selecting this approach. Music therapists in the Southwestern region selected the same two approaches as most influential, Behavioral Music Therapy (67%) and Neurologic Music Therapy (33%). Twenty-four percent of respondents selected Nordoff-Robbins Music Therapy, and 19% selected each of the following approaches: Clinical Improvisation, Free Improvisation, and Orff-Schulwerk.

In the Mid-Atlantic region, Clinical Improvisation is the most influential approach, selected by 72% of respondents. Behavioral Music Therapy is an almost equal influence (67%), followed by Nordoff-Robbins Music Therapy (56%) and Orff-Schulwerk (42%) among the top four approaches. Of the 13 respondents in the New England region, 77% are influenced by Clinical Improvisation, 62% selected Nordoff-

Robbins Music Therapy, and 54% selected Behavioral Music Therapy. The two respondents who reported working outside of the United States both selected Behavioral Music Therapy, Neurologic Music Therapy, and Nordoff-Robbins Music Therapy as influences. In addition, one of the respondents selected Free Improvisation and Orff-Schulwerk.

*Question 19: Select any and all of the following approaches in which you are trained, credentialed, or certified.*

Although a large percentage of respondents (69%) specified that Behavioral Music Therapy is influential in their clinical approach with individuals on the autism spectrum, only 29% of the total respondents answered that they are trained, credentialed, or certified in this approach. Only 16% of the total music therapists surveyed reported training, credentials, or certification in Clinical Improvisation, which was selected by 47% of respondents as influential in the previous question. Twenty-three percent of respondents are trained, credentialed or certified in Orff-Schulwerk, and 16% are trained, credentialed, or certified in either Nordoff-Robbins Music Therapy or Neurologic Music Therapy. Eleven percent of respondents have training in Guided Imagery and Music, 5% in Free Improvisation, and 3% in Didactic Music Therapy. Ten percent of respondents selected “Other” and specified the following: Developmental Music Therapy (Wood), Humanistic Music Therapy, Infant Development, Oral Motor Therapy (Johnson), Play Based Music Therapy, Relationship Development Intervention, Sensory Integration (Ayers), and Walenburg Brushing Technique. (See Figure 14.)

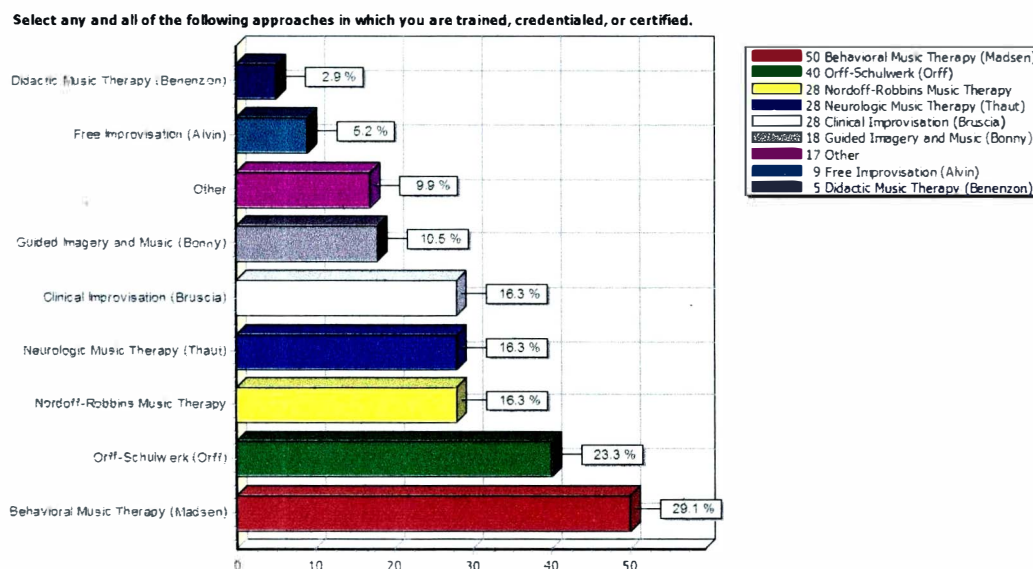


Figure 14. Training, Credentials, or Certification

### Treatment Influences

*Question 20: Select any and all of the following adaptive communication techniques you have used during your music therapy sessions with this population.*

The response options included (a) Facilitated Communication, (b) Picture Exchange Communication System (PECS), (c) Other Visual Communication System, (d) Social Stories, (e) Sign Language, (f) Visual Schedules, (g) Vocal Output Communication Aids/Devices (VOCA), and (h) Other. Seventy-four percent of the respondents incorporate PECS into their clinical work with this population. Almost the same percentage (73%) of music therapists use sign language in their sessions, and 64% use visual schedules. Nearly 53% of the music therapists selected “Other Visual Communication System.” Social stories, picture stories of appropriate social interactions, are incorporated into music therapy sessions by 48% of the respondents.

Forty-three percent of respondents utilize Vocal Output Communication Aids/Devices, and 32% use Facilitated Communication in their sessions with individuals with ASD. Ten music therapists (6%) selected “Other” and responses included Assistive Technology, “developmental speech and language train,” and Relationship Development Interventions.

*Question 21: Select any and all of the following treatment methods that are incorporated into or influence your music therapy approach with this population.*

The response options included (a) Auditory Integration Training, (b) Cranial-Sacral Therapy, (c) Sensory Diet/Sensory Integration (Occupational Therapy), (d) Sensory Integration in Music Therapy (D. Berger), and (e) Sound/Vibration Therapy. Forty-seven percent of the music therapists surveyed reported an influence or incorporation of the occupational therapy theories of Sensory Diet and Sensory Integration. Likewise, 44% of respondents selected Sensory Integration in Music Therapy as described by Dorita Berger. Auditory Integration Training influences 21% of the respondents in their work with this population. Fourteen percent report an influence of Sound/Vibration Therapy, and 4% of music therapists incorporate or are influenced by Cranial-Sacral Therapy.

*Question 22: Select any and all of the following educational program models that influence your session work with this population.*

The response options for this question included brief descriptions of each of the ten educational models identified by the National Research Council (2001) (see Literature Review section for descriptions). The most influential model, selected by 43% of the total respondents, is the Developmental Intervention Model designed by Greenspan and Weider. The second most selected treatment influence is the

Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH) program, selected by 32% of the music therapists surveyed. Twenty-five percent of respondents chose the Individualized Support Program, characterized by in-home implementation, facilitation of the child's participation in socially inclusive environments, and multifaceted family support. The Denver Model, designed by Rogers and based on the premise that play is a primary vehicle for learning, is influential in the clinical work of 21% of the music therapists surveyed. The remaining six models in order of most influential to least influential are: UCLA Young Autism Project (14% of respondents), Douglass Developmental Center at Rutgers (12%), Pivotal Response Model (11%), Walden Early Childhood Program (10%), Learning Experiences, an Alternative Program for Preschoolers and Parents (LEAP) (9%), and Children's Unit at SUNY Binghamton (7%). (See Figure 15.)

Thirteen percent of respondents selected the "Other" option and included the following treatment influences: Applied Behavior Analysis (ABA), Applied and Verbal Behavioral Analysis, Attachment theory, Center-Based Early Intervention, Developmental Music Therapy (Wood), Do-Watch-Listen-Say (Quill), Just Kids Autism Program, Miller Cognitive-Developmental Method, Option Institute Son-Rise Program, Positive Behavioral Supports, Relationship Development Intervention (Gutstein), and Sensory Integration.

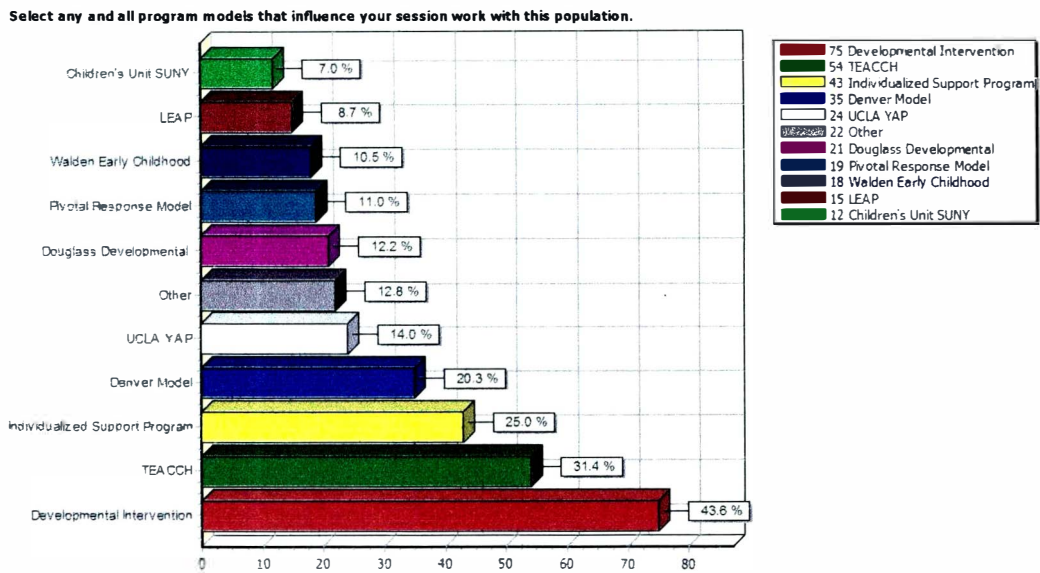


Figure 15. Educational Program Models

### Music Therapy Techniques

*Question 23: Which of the following do you employ in the majority of your session work with this population?*

The choices for this question were (a) Pre-composed music only, (b) Improvisation only, and (c) Both improvisation and pre-composed music. The majority of respondents (87%,  $n = 146$ ) use both improvisation and pre-composed music with this clientele. Only 13% of the music therapists ( $n = 22$ ) use pre-composed music only, and no respondents selected “Improvisation only.” This ratio of percentages was approximately the same when the results were filtered according to the different AMTA regions. One-hundred percent of music therapists with 16 or more years of experience with this population use both improvisation and pre-composed music in these clients’ sessions.



*Question 24: In general, which one of the following styles do you use in the majority of your session work with this population?*

Response options were (a) A directive, structured approach, (b) A non-directive, free or open-structured approach, and (c) I use both approaches equally. As shown in Figure 16, 48% of all respondents incorporate both directive and non-directive approaches equally into the majority of their clinical work with individuals with ASD. A similar percentage of respondents (46%) mainly use a directive, structured approach. Only 5% of music therapists use a non-directive, open-structured approach in the majority of their clinical work. Among respondents with 16 or more years of experience with this population, 56% use both approaches equally, 42% use a directive approach for the majority of this work, and 3% use a non-directive approach.

In general, which one of the following styles do you use in the majority of your session work with this population?

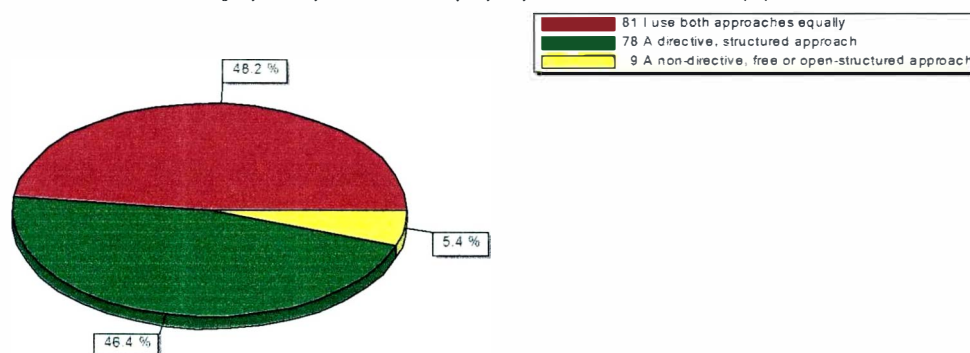


Figure 16. Style of Approach

*Question 25: Select the statement that best represents your work with this population.*

The response options for this question were: (a) For the majority of my clients, I use recorded and live music in the sessions, (b) For the majority of my clients, I use only live music in the sessions, and (c) For the majority of my clients, I use only recorded music in the sessions. Responses to this question were nearly equally divided among option A (50.6%) and option B (49.4%). Eighty-six respondents to this question use both recorded and live music in their sessions with this population. Eighty-four music therapists use only live music in the sessions. No one selected the “only recorded music” option.

*Question 26: Select any and all of the following interventions used in your session work with this population.*

The response options included music therapy techniques or interventions commonly mentioned in the literature pertaining to this area of practice (see Figure 17). “Movement experiences” are used by 92% of the music therapists surveyed. Eighty percent of respondents use “Transition songs,” and 79% of music therapists incorporate “Vocal work” of some sort into their sessions. “Visual representations of music” are used by 58% of the music therapists. “Adaptive instruments” such as weighted mallets and texture-enhanced instruments are used by 51% of respondents. Forty-four percent of therapists involve the client in wind instrument playing. A considerably smaller percentage of respondents incorporate Melodic Intonation Therapy (16%) and Guided Imagery and Music (5%) techniques when working with individuals with this particular diagnosis.

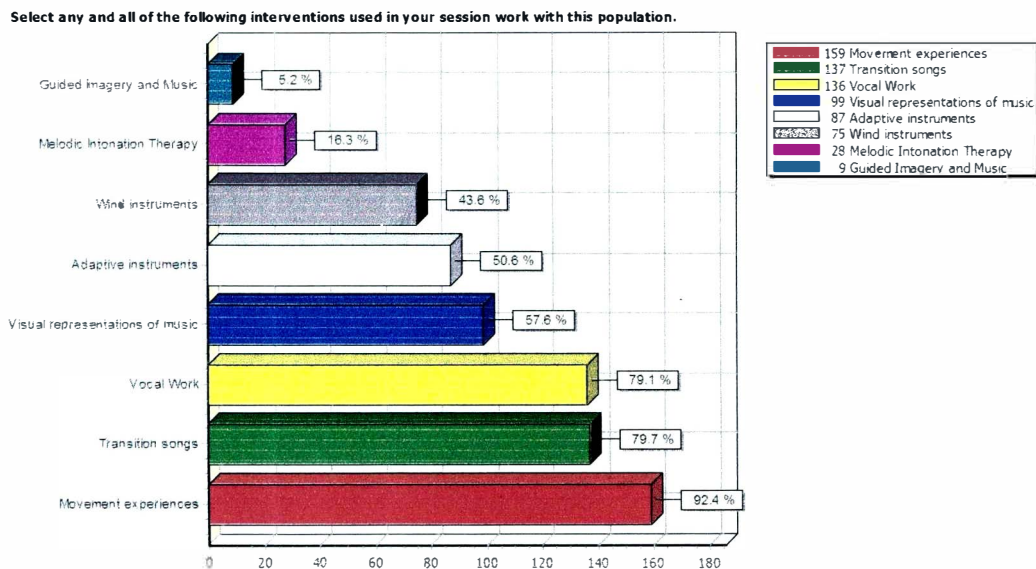


Figure 17. Interventions and Techniques

*Question 27: How many of your clients diagnosed on the autism spectrum are involved in family-included sessions on a regular basis (at least one family member is involved in the child's sessions)?*

Fifty-seven percent ( $n = 95$ ) of the music therapists do not work within a family-included session format. However, 36% of respondents ( $n = 60$ ) regularly work with one to five clients in this format. Eight respondents (5%) work with 6 to 10 clients in this way, and one respondent works with 11 to 15 clients with family members included in the sessions. Two percent of the participants ( $n = 3$ ) work with 21 or more of their clients with family involved.

*Question 28: Select the top three instruments you use most frequently with your clients diagnosed on the autism spectrum.*

As shown in Figure 18, the most commonly used instruments in music therapy with these clients are pitched and non-pitched percussion instruments, chosen by 96% of respondents. The guitar is among the top three most frequently used instruments

for 84% of the music therapists who participated in this survey. The piano or keyboard is used frequently by 67% of respondents, and 22% of respondents commonly use electronic instruments. Only 9% and 6% of music therapists frequently use wind and string instruments, respectively, in their work with this population. Eleven percent selected “Other” and noted their use of accordion, autoharp, dulcimer, rainmaker, and voice.

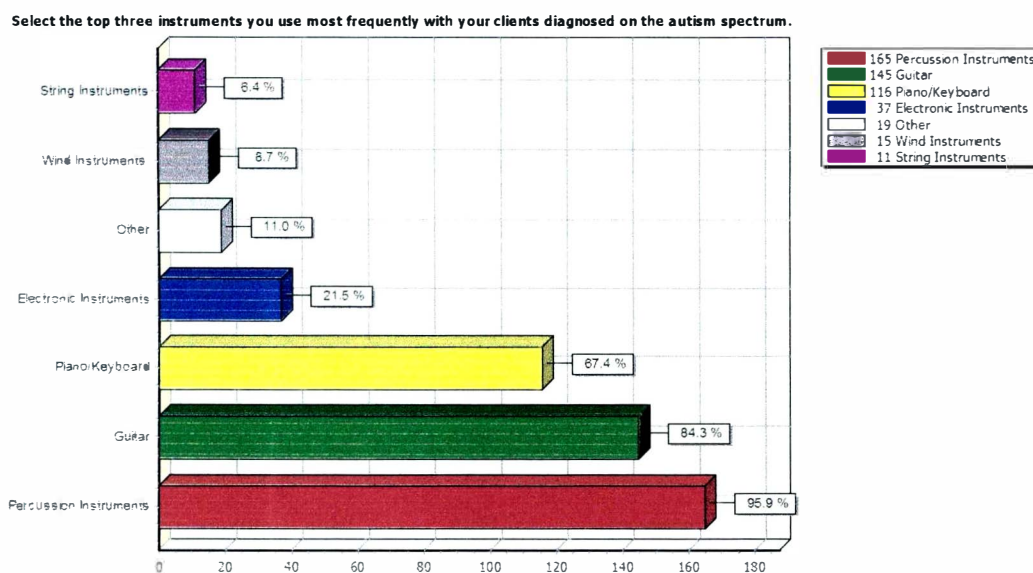


Figure 18. Top Three Most Frequently Used Instruments

*Question 29: Please list the top three instruments that you regularly avoid using in your sessions due to client sensitivity.*

The answer format for this question was in an open, write-in style. Fifteen percent of participants reported that they do not “avoid” particular instruments, and 10% wrote that the individual responses differ too much from client to client to generalize about regularly avoided instruments. Several of the therapists who do not avoid using particular instruments responded that they work to desensitize the client if

hypersensitivity exists. The remaining 75% of respondents listed instruments for this question. The most commonly specified instrument was the cymbal, listed by 15% ( $n = 25$ ) of the respondents. Twenty-two therapists (13%) wrote in electronic instruments such as the omnichord, drum machine, and electric keyboard. A similar percentage of respondents (12%) said that they avoid wind instruments such as various whistles, the recorder, and flutes. Bells (jingle and tone bells) are avoided in the clinical work of 19 respondents (11%). Fifteen respondents (9%) noted avoiding certain kinds of drums (snare, large, low-tone). Other instruments each listed by less than eight respondents included: brass instruments, chimes, guitar, glockenspiel, metallic percussion instruments, ocean drum, piano, reed horn, string instruments, shakers/maracas, tambourine, triangle, and wood blocks.

*Question 30: Please select the three most frequently used interventions in your sessions.*

Ninety percent of the participants selected “Instrumental play/Improvisation” as one of the three most frequently used interventions with this population. Seventy-four percent of the music therapists use movement/dance experiences frequently, and 72% incorporate singing. “Music instruction/adapted lesson” was selected by 23%, and “Vocal improvisation” is among the three most frequently used interventions for 22% of respondents. Eleven percent of respondents frequently use “Relaxation experiences.” Seven percent selected “Other” and answers included: art and music, chant, curriculum-based songs for education, improvisation around puppets and toys, Music Attention Control Training (MACT), music listening, song writing, and vibrotactile stimulation. (See Figure 19.)

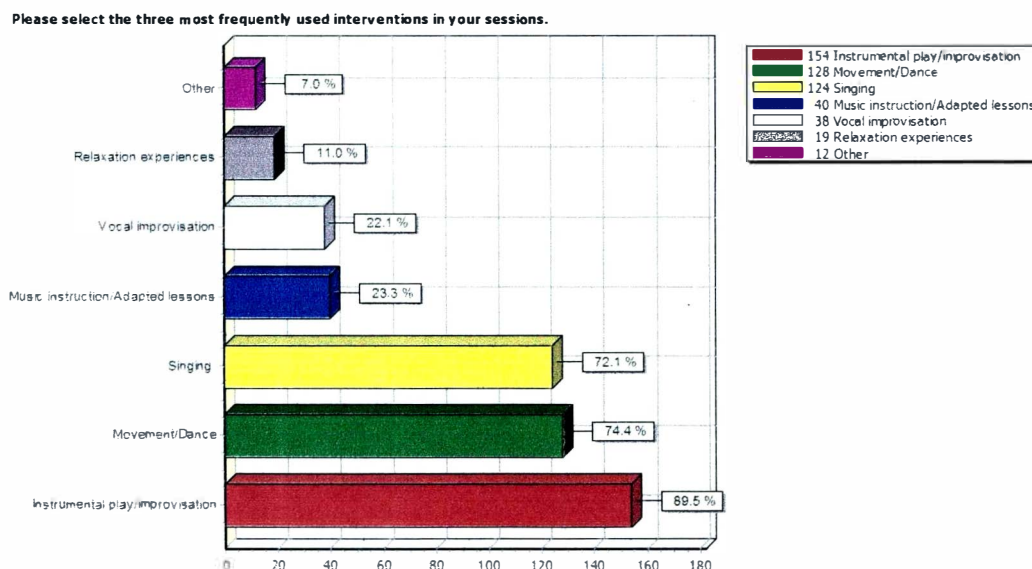


Figure 19. Top Three Most Frequently Used Interventions

*Question 31: Please select the top three goal areas most often targeted during your sessions with this population.*

As revealed in Figure 20, the three goal areas selected by the most respondents are Communication/Language (93%), Social Interaction (70%), and Cognitive/Academic Skills (34%). Self-regulation/self-management is targeted often by 33% of respondents, and 29% of music therapists included Motor Skills in the top three goal areas. Twenty-three percent of respondents focus upon Sensory Integration, and 13% most often target Self-Awareness as a goal area. Four percent selected “Other” and answers included Emotional Expression, Relaxation Skills, Quality of Life, and comments that “all are equally important.”

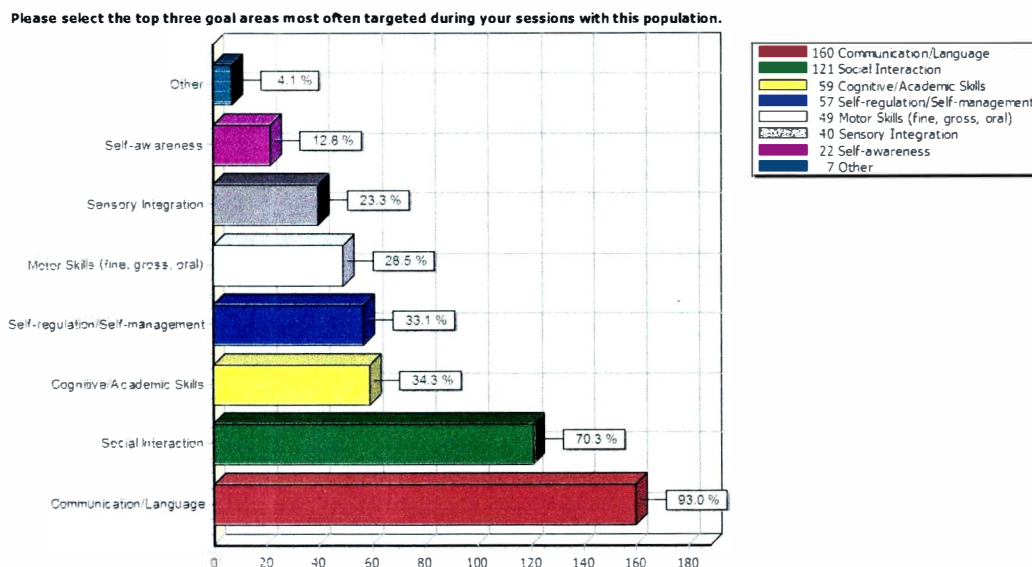


Figure 20. Top Three Goal Areas

### Inclusion Practices

*Question 32: How many inclusion groups (including individuals on the autism spectrum with typical peers) do you work with per week?*

Sixty-three percent ( $n = 107$ ) of the music therapists surveyed do not treat individuals with autism in an inclusive group setting. Twenty-eight percent ( $n = 47$ ) work with 1 to 5 groups in this format per week. Only nine music therapists (5%) work with 6 to 10 inclusion groups per week, and four respondents (2%) work with 11 to 15 groups. One respondent works with 16 to 20 groups, and one respondent conducts 21 or more groups in an inclusive setting per week. Therefore, of the 171 music therapists who took this survey, 62 or 36% work with groups including individuals with ASD with their typically developing peers.

*Question 33: If you work in an inclusion setting, please list the top three goal areas most often targeted in your music therapy sessions in this setting.*

Of the 52 music therapists who answered this question, 44 or 85% of them include social interaction skills among the top three goal areas. Thirty-five respondents (67%) include language/communication among the top three goals, and 21 music therapists (40%) include academic/cognitive skills as a main focus. Ten respondents (19%) include goal areas related to appropriate behaviors or behavioral inhibition, and nine therapists (17%) consider motor skills a top focus within this setting. Sensory related areas such as sensory integration and adaptation are included in the top three goal areas by 13% of respondents, and self-management/regulation is included by 12% of the music therapists surveyed.

*Question 34: If you work in an inclusion setting, please identify the top three music therapy interventions you use in this setting.*

Of the 46 music therapists who answered this question, 31 or 67% indicate the use of movement interventions. Similarly, 30 or 65% of the respondents include instrument playing among their top three interventions in this setting. Vocalizing or singing is included by 22 or 48% of respondents to this question. Thirteen or 28% of the music therapists specify vocal or instrumental improvisation in the top three interventions used in an inclusive setting. Other interventions listed two or fewer times are: Attention Control Training, composing/songwriting, conducting, Orff techniques, making instruments, music and art experiences, musical games, music paired with sign language, music instruction, social stories/songs, and sound stories.



## General Questions

*Question 35: In your opinion, approximately what percentage of your clients on the autism spectrum exhibits “relative” or “perfect pitch”?*

As Figure 21 shows, 50% of the respondents believe that less than 25% of their clients with ASD have relative or perfect pitch. Nineteen percent reported that none of these clients have these skills. Fourteen percent of respondents answered that 25 to 50% of their clients exhibit relative or perfect pitch. Twelve percent believe that 50 to 75% of their caseload on the autism spectrum has these skills, and 5% of respondents reported that 75 to 100% of their clients exhibit these skills.

In your opinion, approximately what percentage of your clients on the autism spectrum exhibits “relative” or “perfect pitch”?

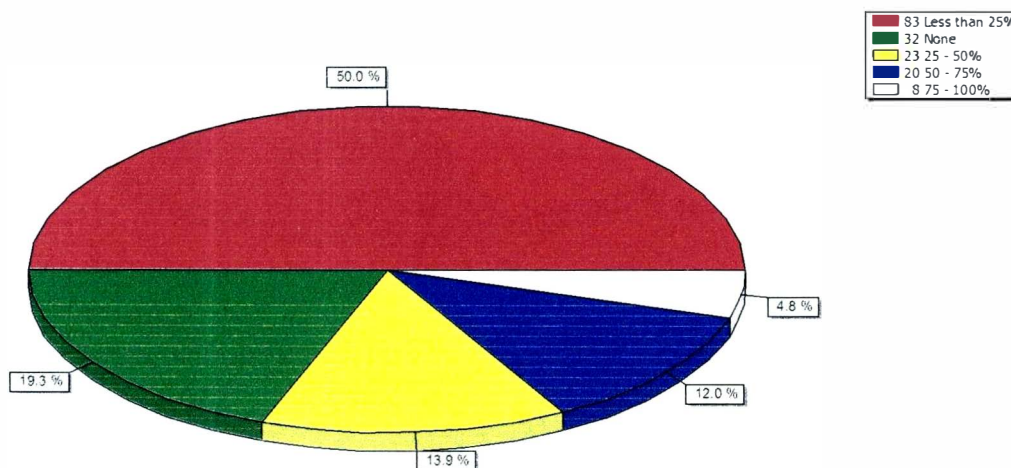


Figure 21. Relative or Perfect Pitch

*Question 36: Approximately what percentage of your clients on the autism spectrum shows particular receptivity to music (in comparison to other clients)?*

Approximately half of the respondents (48%) believe that 75 to 100% of their

clients with autism spectrum disorders are particularly receptive to music compared to their other clients. Thirty-two percent of participants reported that 50 to 75% of these clients have this receptivity to music, and 14% reported that 25 to 50% of their clients are particularly receptive in comparison to other clients. Five percent of music therapists have the opinion that less than 25% of their clients show notable receptivity, and only one respondent reported that none of his/her clients have particular receptivity to music. (See Figure 22.)

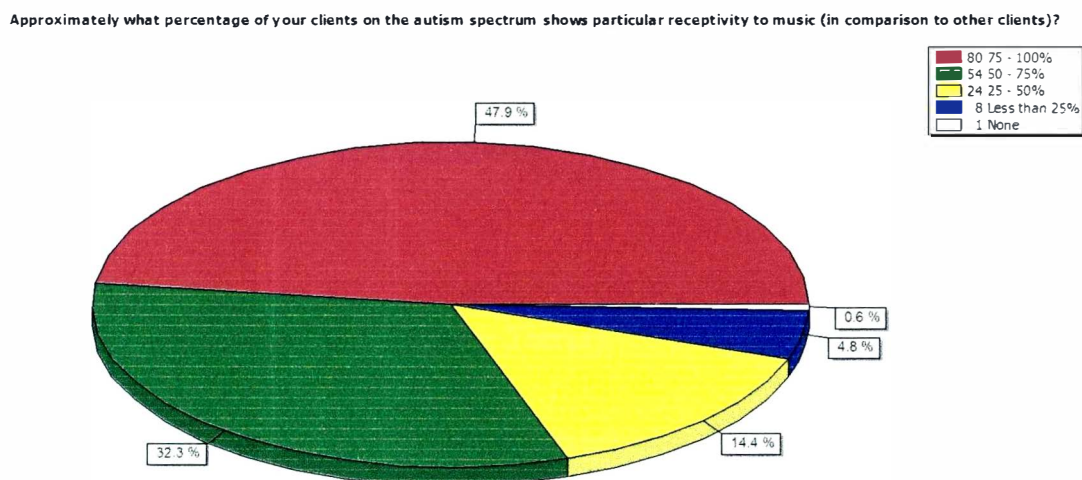


Figure 22. Receptivity to Music

*Question 37: Please rate the overall effectiveness of music therapy with this population according to your professional experiences.*

The response options for this question included (a) Not effective, (b) Somewhat effective, (c) Effective, and (d) Very effective. Figure 23 shows that 64% of respondents believe music therapy to be “very effective” with this population. Thirty-one percent rated music therapy as “effective,” and close to 5% rated this

treatment modality as “somewhat effective.” No respondents selected the “Not effective” option.

Please rate the overall effectiveness of music therapy with this population according to your professional experiences.

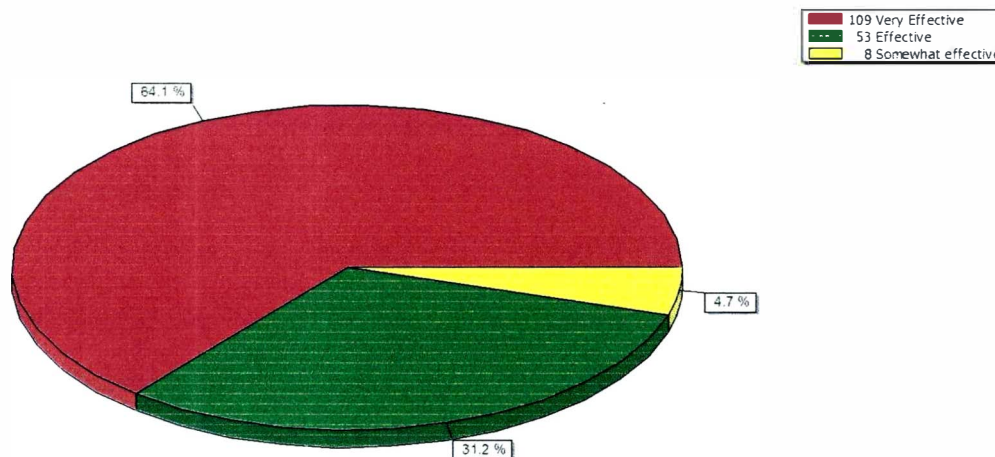


Figure 23. Overall Effectiveness of Music Therapy

*Question 38: Please feel free to give any comments about this survey or the general topic matter.*

This last question of the survey provided an unlimited field for typing comments. Many comments were submitted with topics ranging from explaining specific answers, to describing approaches or techniques found to be successful, to general reactions to the survey. Selected comments are included below as representative of the ideas expressed by the respondents. Since responses were submitted anonymously, authorship is unknown.

1. “I feel that the tone bar has worked wonders to adding structure to our relaxation setting with adults with MR/Autism. I have also found that communication skills are greatly increased with children through songs that

they can sing that reflect everyday conversation.”

2. “I have found that when music therapy is paired with sensory integration techniques and ‘rough and tumble play,’ there is more client response and better attending in the session.”
3. “I have found that offering live, improvised music therapy is a vital way for persons with autism to relate, connect, express feelings, and be ‘freed’ from autistic constraints.”
4. “I highly recommend you looking into Relationship Development Intervention [designed by] Dr. Steven Gutstein and his wife...Instead of putting the child in a passive role it makes them an equal partner in the relationship...It has also helped me learn how to effectively incorporate the parents into the sessions with us.”
5. “People with autism are individuals; some do respond well to music, others do not. It is hard to generalize about this population.” “I’m afraid it’s difficult to be as specific as you need us to be for this survey. Every child, as you are aware, requires such varying approaches—even within the same diagnosis.”
6. “Most of my kids choose not to speak in a general setting. I get more language in 30 minutes than others [colleagues] do the entire week – unless they use the techniques and use the activities that I have left for them.”
7. “Music specifically shows the richness of awareness of my autistic clients and gives them such immediate access to communicate. They gain success in all other treatment arenas at such a rapid pace when music therapy is considered their primary treatment.”
8. “Sometimes it is hard to articulate exactly what approach is used. I sit in front of the child and bring all of my training, formal and informal, to bear...much of

that is experience based on a lifetime dedicated to 'making connections'..."

9. "Districts/collaborative use different models which I must acknowledge/work with, remaining true to my work." "Over the years I have had clients whose parents and/or education teams become fixed upon or convinced of the effectiveness of the various types of programs you have listed. [Music Therapy] can fit into or support each one of the many approached (highly structured or lightly structured/unstructured). However, [music therapists] must not compromise the standards and essence of music therapy when working within an assigned program or approach."
10. "Music therapy acts as an important bridge of understanding... we journey from our world to their world and guide them back over to create "our" world."

## SUMMARY AND CONCLUSIONS

According to this survey, the typical music therapist who works with persons diagnosed on the autism spectrum has at least six years of experience working with this population and holds the Music Therapist-Board Certified credential. She or he works with this population most commonly in either a public school setting or in private practice, in one of 103 different school districts in 28 different states. In addition, she or he is more likely to hold a bachelor's degree or its equivalent in Music Therapy than a master's or doctoral degree in Music Therapy as the highest level of education.

Most of the music therapists surveyed work with clients who are between the ages of five and twelve years, and who have an official diagnosis of Autism/Autistic Disorder as opposed to the other spectrum diagnoses. According to one-third of respondents, between 25 to 50% of their caseload holds a diagnosis within the autism spectrum. Another third of the music therapists reported that less than 25% of their caseload has this diagnosis. These clients receive music therapy for 1 to 5 years on average, most commonly once per week for approximately 30 minutes each session. Forty percent of therapists work with most of their clients in an individual session format. Twenty-nine percent of therapists work with most of their clients with this diagnosis in a group or dyadic session. The majority of the respondents have none or less than 25% of their clients involved in music therapy sessions with typically developing peers. Music therapists typically do not co-treat with other professionals in clinical work with this population, or do so for less than 25% of their sessions. In addition, over half of the music therapists surveyed do not service their clients with

ASD in family-included sessions, but 36% do so for between one and five clients. Given the musical nature of infant-parent pre-linguistic interaction as described by Trevarthen et al. (1998), music therapy involving infants with ASD and their parents has great potential to positively impact the communication development of these children. The need for more research in this specific area of work with these individuals is apparent.

Although over half of the music therapists surveyed work in either a public or private school setting, music therapy is included in the Individualized Education Program (IEP) for none or less than 25% of the majority of respondents' clients with ASD. In fact, 36% of music therapists reported that none of their clients have music therapy designated as a service in the IEP. This survey did not inquire specifically about the exact nature of service delivery in school systems, but these results suggest that a large amount of music therapy is being delivered to school children with autism spectrum disorders without being included in the child's IEP. The implications of this are discussed in the following section.

In the Clinical Approach section of the survey, theoretical approaches specific to the field of music therapy were listed. Overall, the music therapists surveyed are influenced first and foremost by Behavioral Music Therapy (Madsen) when working with this population, secondly by Clinical Improvisation (Bruscia), and thirdly by Nordoff-Robbins Music Therapy. However, music therapists with more than 16 years of experience with these clients are more equally influenced by the different theoretical orientations. Additionally, the music therapy approach chosen varies when region of practice is considered; often the respondent's selections show the influence of specialized university or training programs available within the region where he or she practices. For example, Neurologic Music Therapy (Thaut) is most influential in the

Midwestern region where Neurologic Music Therapy training originated. The total number of responses for this question (476) reveals that each music therapist chose approximately three different music therapy models on average. This speaks to the eclectic nature of clinical influences with this population in particular and suggests a need for eclecticism in the educational practices of the profession, especially since more experienced clinicians report a more equal influence of the different approaches. Interestingly, respondents who selected Behavioral Music Therapy as an influence also selected other approaches but to a lesser extent than those who selected Clinical Improvisation or Nordoff-Robbins Music Therapy.

A notable result is the discrepancy between the influential music therapy approaches and the level of training or education in the approach. The most common “training, certification, or credential” is in Behavioral Music Therapy, with only 29% of the total respondents selecting this option. However, the influence of this approach in treating persons with ASD is indicated by 69% of respondents. Likewise, only 16% of respondents report having training, certification, or credentials in Clinical Improvisation, while 47% chose this approach as influential in their clinical work. Nordoff-Robbins Music Therapy, influential in the work of 44% of respondents, was also selected by only 16% of the music therapists. Granted these differences could be attributed to ambiguity of the question language “training, certification, or credentials,” they could indicate a lack of specialized training by music therapists in general and/or the limited nature of specific trainings or certifications in these approaches. In her survey of music therapists working in correctional settings, Coddington (2002) asked respondents to identify all models in which they were “credentialed, certified or had extensive training” to measure “strength of relationship” between the therapist and model. She found that 54% of respondents were



“credentialed, certified or had extensive training” in Behavioral Music Therapy, 34% in Clinical Improvisation, and 22% in Nordoff-Robbins Music Therapy as the three strongest relationships. Interestingly, these models were also the top three influences in the same specific order in the current study. The Coddington percentages of training or certification are higher than in the current study (perhaps due to the considerably smaller number of participants), but the percentages are still remarkably small. In the current study, the influence and training percentages are more similar concerning Orff-Schulwerk, the second most common training, certification, or credential. Twenty-three percent of respondents have training in this, and 36% of respondents chose this approach as influential in their clinical work with this specific population.

In addition to having an eclectic approach concerning music therapy theoretical models, music therapists also incorporate theories and techniques which originated outside of the field of music therapy. The majority of music therapists use the Picture Exchange Communication System (PECS), sign language, visual schedules such as those suggested by Griggs-Drane and Wheeler (1997), and other visual communication systems in their clinical work with this population. Approximately half of the music therapists surveyed are influenced by the Sensory Integration theories used in occupational therapy and as outlined by Berger (2002). Among the ten educational program models listed on the survey, the respondents chose the Developmental Intervention Model created by Greenspan and Weider as most influential (43% of respondents). This is interesting since the Greenspan approach has a different theoretical orientation than the most influential music therapy approach, Behavioral Music Therapy. The Developmental Intervention Model is a relationship-based model derived from a developmental rather than behavioral orientation, resembling the theories of Nordoff-Robbins Music Therapy more closely than

Behavioral Music Therapy. Perhaps this indicates a lack of understanding or an ambiguity in the definition of different educational or music therapy models.

Close to 90% of the music therapists who responded use both improvisation and pre-composed music in their sessions with these individuals. Of the music therapists with 16 or more years of experience working with this population, 100% use both improvisation and pre-composed music. In support of this finding, Berger (2002), Nelson et al. (1984), Snell (2002), and Thaut (1984) recommend the incorporation of improvisation in their proposed treatment models for individuals with autism. Given the extent of improvisational based literature (Alvin & Warwick, 1991; Edgerton, 1994; Nordoff & Robbins, 1964, 1968, 1971, 1977; Mahlberg, 1973; Saperston, 1973; Wigram, 2000) and the current study's results, the need for improvisational training in preparation for work with these individuals becomes evident.

Music therapy styles were also surveyed in this study. Respondents are more or less equally divided regarding structural styles; a little over one half of the music therapists use both directive and non-directive approaches equally in their sessions, and a little less than half primarily uses a directive, structured style of approach. In general, the literature concerning this population does not universally advocate for one style of approach; however, several articles suggest incorporating both structured and non-directive music therapy interventions (Snell, 2002; Thaut, 1984; Nelson et al., 1984). In addition, music therapists are equally divided in their responses concerning the use of live music only or the use of recorded and live music. When considering music therapists with more than 10 years of experience, these responses are very similar.

According to the survey, most music therapists incorporate movement

experiences, transition songs such as those described by Snell (2002), and vocal work into their sessions with these clients. Approximately half of the music therapists use visual representations of music, adaptive instruments, and wind instruments which the client plays. Thaut (1984) and Berger (2002) recommend the use of wind instruments for oral-motor stimulation to strengthen functional use of the mouth. The three most frequently used interventions in sessions with this population are instrumental play/improvisation, movement/dance, and singing. The three most frequently used instruments are pitched and un-pitched percussion instruments, guitar, and piano or keyboard. Although there is not a large enough consensus on specific instruments that are not used due to client hypersensitivity, 75% of the respondents did list instruments which are used cautiously in therapy sessions. Given a list of general goal areas, the respondents selected the three goal areas most often targeted during work with this population to be Communication/Language, Social Interaction, and Cognitive/Academic skills, listed in order of most to least frequently selected.

The inclusion practices of music therapists with the autistic population were surveyed briefly in this study. It was found that a little over one-third of the music therapists surveyed work within an inclusive group setting with this population. The top three clinical goal areas targeted in an inclusion setting are the same as the goal areas targeted in general with persons of this diagnosis: Social Interaction, Communication/Language, and Cognitive/Academic skills. However, Social Interaction was more frequently listed than Communication/Language whereas the opposite was true in the general goal areas question. In order of most frequently cited to least, the top three interventions in this specific session structure were movement experiences, instrumental experiences, and vocalizing or singing. It appears that music therapy sessions within this setting focus more upon social interaction and movement

experiences, but the goals and interventions are very similar to the general practice of music therapy with these individuals.

A General Questions section concluded this survey and addressed the music therapists' opinions regarding client responsiveness to music and music therapy. Most of the respondents believe that none or less than 25% of their clients with autism spectrum disorders possess relative or perfect pitch skills. However, approximately one-third of the music therapists surveyed believe that between 25 to 100% of their clients have relative or perfect pitch skills. In accordance with literature describing the heightened perception or preference of music by these individuals (Applebaum et al., 1979; Blackstock, 1978; Kolko et al., 1980; Mottron et al., 2000; Provonost, 1961; Thaut, 1987, 1988), approximately one-half of music therapists believe that 75 to 100% of their clients with ASD are particularly receptive to music in comparison to other clients. Another third of the respondents reported that 50 to 75% of their clients are notably receptive to music. It appears that there is much agreement among music therapists as to these particular clients' musical receptivity. Finally, the majority of music therapists surveyed believe that music therapy is a "very effective" treatment modality with persons of this diagnosis.

This study was designed to provide a view of current music therapy practice with persons diagnosed with autism spectrum disorders. It was found that this field of practice is influenced by a rather eclectic combination of music therapy clinical approaches as well as non-music therapy techniques and treatment programs. Despite the difficulty of generalizing about this population, there were several techniques which were chosen by a high percentage of the total respondents, for example the use of both pre-composed and improvised music, movement experiences, vocal work, and visual communication systems. It is hoped that at a basic level this study brought to

the survey participants and to the reader a greater awareness of the treatment avenues for individuals with this diagnosis.

## DISCUSSION AND RECOMMENDATIONS

According to this survey, music therapists are integrating diverse treatment models into their clinical work with people with autism. Perhaps research into other specific clinical populations would reveal a similar eclecticism. One may speculate about the positive and negative aspects of working within such an eclectic model. On the positive side, the music therapist's awareness of a wide variety of treatment models can enhance his or her ability to find the most effective methods in order to customize treatment on an individual basis. Drawing from an array of methods may also be advantageous when adapting to work with a treatment team and within a client's total treatment program. However, this eclecticism in approach may be suggestive of the identity problems within our discipline (Bruscia, 1998), revealing the need for a broader knowledge of and more specialized training in the diverse orientations of the field. Defining music therapy within the field is not an easy task and explaining the need for such treatment to other professionals and governing organizations surely becomes more difficult without a unified, client-specific description of music therapy. In addition, one might interpret the varied range of treatment methods and theoretical influences found in this survey as indicative of a lack of specific, research founded interventions. Continued research is greatly warranted to clarify what treatment methods are the most effective on a population specific basis.

The results of this survey illuminated issues facing the profession in general such as the training or certification process in different music therapy approaches. The music therapists surveyed were influenced by several diverse theoretical models but appeared to lack specific training or certification in these. These results raise the issue

of therapist competency and suggest a possible need for contemporizing the definitions of the main theoretical constructs of music therapy. It is likely that the models listed may have had different meaning for each respondent, and that each model's definition has evolved with the profession. As in any profession with such a diverse range of theoretical orientations, specialized training in the different approaches is needed in order to treat clients more effectively and ethically. This daunting task may be remedied in part by a greater focus by university programs upon clearly defining their own theoretical orientations. As proposed by Bruscia (1998), it is this author's opinion that an avenue to fulfilling this need would be to provide a broad, eclectic undergraduate education with regard to treatment models, and then a more specialized theoretical framework at a graduate level. This system may be most effective if the master's degree were the entry level requirement, and the graduate level work could be specialized according to clinical population or theoretical model.

One could interpret the rather low percentage of inclusion of music therapy as a service in the IEP as suggested by this survey as reflective of a failure of school systems to recognize this form of treatment as important or valid. Given that over half of the respondents reported working specifically in school settings, the level of awareness of the field as a whole comes into question. An interesting topic for future research would be to survey school administrators where music therapy services are being rendered for their opinions and understanding of the profession. Research such as this is needed to determine where future educational and public relations work should be focused. This study showed an influence of different educational models upon music therapy practice. Perhaps it would be beneficial to explain music therapy through the terminology of the school's or child's predominant educational program model in order to clarify and justify the inclusion of music therapy in the child's IEP.

Borrowing language from allied paradigms can be limiting as warned by Aigen (as cited in Pavlicevic, 1997), but it may also lead to a common area of understanding and consequently, a greater number of individuals receiving music therapy services. The inclusion of music therapy in the IEP could conceivably lead to greater recognition of the field by government and health care agencies.

In conclusion, this study portrayed the current techniques and approaches used with persons with autism spectrum disorders. One might assume that the usage of a particular technique by a high percentage of survey respondents would suggest that this technique is the best or most effective technique in practice. However, this could be a totally false assumption; only empirical research could support this claim. It is recommended that future research investigate the effectiveness of these delineated music therapy techniques with focus upon the theoretical framework within which they are used. In addition, this type of population-specific survey could be conducted in other countries in order to unify and further define the practice of music therapy with these individuals, as well as with other clinical populations. As the profession rapidly evolves, an important step to advancing music therapy is to collaborate on a world-wide level in defining the profession's practices.



## Appendix A

### Protocol Clearance From the Human Subjects Institutional Review Board



Date: October 13, 2003

To: Brian Wilson, Principal Investigator  
S. Alie Chandler, Student Investigator for dissertation

From: Mary Lagerwey, Chair

A handwritten signature in black ink, appearing to read "Mary Lagerwey".

Re: HSIIRB Project Number 03-09-07

This letter will serve as confirmation that your research project entitled "A Survey: Contemporary Music Therapy Practice with Individuals Diagnosed on the Autism Spectrum" has been **approved** under the **exempt** category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you may **only** conduct this research exactly in the form it was approved. You must seek specific board approval for any changes in this project. You must also seek reapproval if the project extends beyond the termination date noted below. In addition if there are any unanticipated adverse reactions or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: October 13, 2004

Appendix B  
Consent Letter

**Western Michigan University, Department of Music Therapy**

Principal Investigator: Brian Wilson, M.M.

Student Investigator: S. Alie Chandler, B.A.

**A Survey: Contemporary Music Therapy Practice with Individuals Diagnosed on the Autism Spectrum**

Dear Fellow Music Therapist:

You are invited to participate in a research study. In order to determine a current and clear view of music therapy practice with individuals with Autism Spectrum Disorders, I have created an online survey project as my Master's thesis through Western Michigan University. Your name and email address were obtained from the American Music Therapy Association upon its approval of this study. By participating, you will be contributing valuable information that may help to clarify the various music therapy techniques and approaches used with this population. Gaining a broad and current view of this area of practice may be beneficial in your clinical work, and therefore in your clients' treatment. Furthermore, it is hoped that this study will indirectly benefit you, as well as the profession as a whole, by leading to a greater recognition of music therapy as a viable treatment modality in the autism community.

To participate, simply click on the address of the website ([www.TBA](http://www.TBA)) to access the secure survey web page and follow the instructions to complete the survey. This site will be available to you until (date) and will take approximately 15 minutes of your time. You can refuse to participate, stop participating at any time, or refuse to answer any question without prejudice or penalty. You may also scroll through the survey to preview the questions and contact me with any questions, or to decide if you want to participate. Submitting the survey indicates your consent to have your responses used as research data.

Websurveyor®, the company through which this survey was created, guarantees the security and confidentiality of email addresses. In addition, your responses will be received by this researcher anonymously, without email addresses. The final report of this study also will not contain identifying information.

This consent document has been approved for use for one year by the University's Human Subjects Institutional Review Board (HSIRB) on October 13, 2003. Do not participate after October 13, 2004.

If you have questions about this study, please contact the researcher, Alie Chandler at telephone . You may also contact my faculty

advisor, Professor Brian Wilson ( ), the Chair, Human Subjects Institutional<sup>84</sup>  
Review Board ( ), or the Vice President for Research ( ) if  
questions or problems arise during the course of the study. Thank you in advance for  
your participation.

Sincerely,  
Alie Chandler, MT-BC

Appendix C  
Survey Instrument

# Contemporary Music Therapy Practice with Individuals Diagnosed on the Autism Spectrum

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Please answer the following questions specifically pertaining to your work with individuals diagnosed with Autism Spectrum Disorders (including diagnoses of Autistic Disorder, Asperger's Disorder, Childhood Disintegrative Disorder, Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), and Rett's Syndrome). By submitting this survey, you will be giving your consent to participate in this study.

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## I. Demographics: Therapist

1) What is the length in years of your experience with this population?

- ☐ 0-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20
- ☐ Over 20

2) If you work in a school district, please specify the name of the district and city/state.

3) AMTA Region in which you work:

- ☐ Great Lakes
- ☐ Western
- ☐ Mid-Atlantic
- ☐ New England
- ☐ Southeastern
- ☐ South Central
- ☐ Midwestern
- ☐ Southwestern
- ☐ Outside of the US

4) Your Credentials/Professional Designations: (Select all that apply)

- ☐ Advanced Certified Music Therapist (ACMT)
- ☐ Certified Music Therapist (CMT)
- ☐ Music Therapist-Board Certified (MT-BC)

- ☐ Registered Music Therapist (RMT)
- ☐ Other (please specify)

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If you selected other please specify:

5) Type of facility in which you work with this population: (Select all that apply)

- ☐ Group Home
- ☐ Inpatient Psychiatric Unit
- ☐ Mental Health Center
- ☐ Medical Hospital
- ☐ Music Therapy Agency
- ☐ Nursing Home/Assisted Living Facility
- ☐ Preschool/Day care
- ☐ Private Practice
- ☐ Private School
- ☐ Public School
- ☐ Treatment Center
- ☐ Other (please specify)

If you selected other please specify:

6) Highest level of education completed:

- ☐ Bachelor's degree (or its equivalent) in Music Therapy
- ☐ Bachelor's degree in other field
- ☐ Master's degree in Music Therapy
- ☐ Master's degree in other field
- ☐ Doctoral degree in Music Therapy
- ☐ Doctoral degree in other field
- ☐ Other (please specify)

If you selected other please specify:

## II. Client/Session Description

7) Approximately what percentage of your entire caseload holds a diagnosis of an autism spectrum disorder?

- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%



☐ 75 - 100%

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8) What is the current age range of your clients on the autism spectrum? Select all that apply.

- ☐ 0-4 years
- ☐ 5-12 years
- ☐ 13-20 years
- ☐ 21 years and older
- ☐ All of the above

9) What is the most common diagnosis among your clients on the autism spectrum?

- ☐ Autism/Autistic Disorder
- ☐ Asperger's Disorder
- ☐ Childhood Disintegrative Disorder
- ☐ Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS, frequently called atypical autism)
- ☐ Rett's Syndrome

10) What is the average length of music therapy treatment for your clients with autism spectrum disorders?

- ☐ 1-6 months
- ☐ 6 months - 1 year
- ☐ 1-3 years
- ☐ 3-5 years
- ☐ 5-8 years
- ☐ 8 years or more

11) Approximately what percentage of your caseload diagnosed with autism spectrum disorders is involved in *individual* sessions?

- ☐ None
- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

12) Approximately what percentage of your caseload diagnosed with autism spectrum disorders is involved in *group* or *dyadic* sessions?

- ☐ None
- ☐ Less than 25%

- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

13) In general, how often do you have sessions with your clients with this diagnosis per week?

- ☐ Once
- ☐ Twice
- ☐ Three times
- ☐ Four times
- ☐ Five times or more

14) In general, approximately how long are each of these clients' sessions?

- ☐ Less than 30 minutes
- ☐ 30 minutes
- ☐ 45 minutes
- ☐ 1 hour
- ☐ More than one hour

15) Approximately what percentage of your clients are involved in music therapy sessions with typically developing peers?

- ☐ None
- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

16) For approximately what percentage of your clients with autism spectrum disorders is music therapy included on the Individualized Education Program?

- ☐ None
- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

17) Approximately what percentage of your sessions involves co-treatment with other professionals?

- ☐ None

- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

### III. Clinical Approach

18) Select any and all of the following clinical approaches that influence your work with persons diagnosed with autism spectrum disorders.

- ☐ Behavioral Music Therapy (Madsen)
- ☐ Clinical Improvisation (Bruscia)
- ☐ Didactic Music Therapy (Benenzon)
- ☐ Free Improvisation (Alvin)
- ☐ Guided Imagery and Music (Bonny)
- ☐ Nordoff-Robbins Music Therapy
- ☐ Neurologic Music Therapy (Thaut)
- ☐ Orff-Schulwerk (Orff)
- ☐ Other (please specify)

If you selected other please specify:

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19) Select any and all of the following approaches in which you are trained, credentialed, or certified.

- ☐ Behavioral Music Therapy (Madsen)
- ☐ Clinical Improvisation (Bruscia)
- ☐ Didactic Music Therapy (Benenzon)
- ☐ Free Improvisation (Alvin)
- ☐ Guided Imagery and Music (Bonny)
- ☐ Nordoff-Robbins Music Therapy
- ☐ Neurologic Music Therapy (Thaut)
- ☐ Orff-Schulwerk (Orff)
- ☐ Other (please specify)

If you selected other please specify:

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### IV. Treatment Influences

20) Select any and all of the following adaptive communication techniques you have used during your music therapy sessions with this population.

- ☐ Facilitated Communication

- ☐ Picture Exchange Communication System (PECS)
- ☐ Other visual communication system
- ☐ Social Stories
- ☐ Sign language
- ☐ Visual Schedules
- ☐ Vocal Output Communication Aids/Devices (VOCA)
- ☐ Other (please specify)

If you selected other please specify:

---

21) Select any and all of the following treatment methods that are incorporated into or influence your music therapy approach with this population.

- ☐ Auditory Integration Training
- ☐ Cranial-Sacral Therapy
- ☐ Sensory Diet/Sensory Integration (Occupational Therapy)
- ☐ Sensory Integration in Music Therapy (D. Berger)
- ☐ Sound/Vibration Therapy

22) Select any and all of the following educational program models that influence your session work with this population. (Models described by the National Research Council (2001) in *Educating Children with Autism*)

- ☐ Children's Unit at SUNY Binghamton: An intensive program for children with severe behavioral disorders. Uses traditional applied behavior analysis techniques, although more naturalistic procedures may be implemented as children progress.
- ☐ Denver Model: Designed by S. Rogers and colleagues, this Piagetian based model is based on the premise that play is a primary vehicle for learning social, emotional, communicative, and cognitive skills during early childhood.
- ☐ Developmental Intervention Model: Designed by S. Greenspan and S. Weider, this program is relationship-based. Intensive interactive "floor-time" work, in which an adult follows a child's lead in play and interaction.
- ☐ Douglass Developmental Center at Rutgers: Developmentally sequenced. Uses applied behavioral analysis techniques and gradually shifts to more naturalistic procedures.
- ☐ Individualized Support Program: Implemented in children's homes and community settings. The essential elements include: development of functional communication skills, facilitation of the child's

participation in socially inclusive environments, and multifaceted family support.

☐ Learning Experiences, an Alternative Program for Preschoolers and Parents (LEAP): Curriculum blends a behavioral approach with developmentally appropriate practices and is known for its peer-mediated social skill interventions in inclusive classrooms.

☐ Pivotal Response Model: Using naturalistic behavioral interventions, the ultimate goal is to provide individuals with autism with the social and educational proficiency to participate in inclusive settings.

☐ Treatment and Education of Autistic and Related Communication Handicapped Children (TEACCH): Based on a structured teaching approach, in which environments are organized with clear, concrete visual information. Parents are co-therapists and programming is individually tailored.

☐ UCLA Young Autism Project: Originally developed by Lovaas. Behaviorally oriented curriculum is delivered in a one-to-one discrete-trial format, which is implemented by parents and trained therapists who work in a child's home.

☐ Walden Early Childhood Program: Teaching approach is behaviorally based, although goal selection has a developmental influence. Inclusion focus.

☐ Other (please specify)

If you selected other please specify:

## **V. Music Therapy Techniques**

23) Which of the following do you employ in the majority of your session work with this population?

- ☐ Pre-composed music only (music written by others or yourself)
- ☐ Improvisation only
- ☐ Both improvisation and pre-composed music

24) In general, which one of the following styles do you use in the majority of your session work with this population?

- ☐ A directive, structured approach
- ☐ A non-directive, free or open-structured approach
- ☐ I use both approaches equally

25) Select the statement that best represents your work with this population.

- ☐ For the majority of my clients, I use only recorded music in the sessions.
- ☐ For the majority of my clients, I use only live music in the sessions.
- ☐ For the majority of my clients, I use recorded music and live music in the sessions.

26) Select any and all of the following interventions used in your session work with this population.

- ☐ Guided Imagery and Music (GIM)
- ☐ Melodic Intonation Therapy
- ☐ Movement experiences
- ☐ Transition songs
- ☐ Use of wind instruments (client plays kazoo, recorder, etc.)
- ☐ Use of adaptive instruments (weighted or texture-enhanced mallets, mallet cuffs, etc.)
- ☐ Visual representations of music
- ☐ Vocal Work

27) How many of your clients diagnosed on the autism spectrum are involved in family-included sessions on a regular basis (at least one family member is involved in the child's sessions)?

- ☐ None
- ☐ 1-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20
- ☐ 21 or more

28) Select the top three instruments you use most frequently with your clients diagnosed on the autism spectrum.

- ☐ Electronic Instruments (Q-chord, drum machine, etc.)
- ☐ Guitar
- ☐ Percussion Instruments (pitched and non-pitched)
- ☐ Piano/Keyboard
- ☐ String Instruments (other than guitar)
- ☐ Wind Instruments
- ☐ Other (please specify)

If you selected other please specify:

\_\_\_\_\_

29) Please list the top three instruments that you regularly avoid using in your sessions due to client sensitivity.

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30) Please select the three most frequently used interventions in your sessions.

- ☐ Instrumental play/improvisation
- ☐ Movement/Dance
- ☐ Music instruction/Adapted lessons
- ☐ Relaxation experiences
- ☐ Singing
- ☐ Vocal improvisation
- ☐ Other (please specify)

If you selected other please specify:

31) Please select the top three goal areas most often targeted during your sessions with this population.

- ☐ Cognitive/Academic Skills
- ☐ Communication/Language
- ☐ Motor Skills (fine, gross, oral)
- ☐ Self-awareness
- ☐ Self-regulation/Self-management
- ☐ Sensory Integration
- ☐ Social Interaction
- ☐ Other (please specify)

If you selected other please specify:

#### **IV. Inclusion Practices**

32) How many inclusion groups (including individuals on the autism spectrum with typical peers) do you work with *per week*?

- ☐ None
- ☐ 1-5
- ☐ 6-10
- ☐ 11-15
- ☐ 16-20

33) If you work in an inclusion setting, please list the top three goal areas most often targeted in your music therapy sessions in this setting.

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34) If you work in an inclusion setting, please identify the top three music therapy interventions you use in this setting.

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#### **V. General Questions**

35) In your opinion, approximately what percentage of your clients on the autism spectrum exhibits "relative" or "perfect pitch"?

- ☐ None
- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

36) Approximately what percentage of your clients on the autism spectrum shows particular receptivity to music (in comparison to other clients)?

- ☐ None
- ☐ Less than 25%
- ☐ 25 - 50%
- ☐ 50 - 75%
- ☐ 75 - 100%

37) Please rate the overall effectiveness of music therapy with this population according to your professional experiences.

- ☐ Not effective
- ☐ Somewhat effective
- ☐ Effective
- ☐ Very Effective



38) Please feel free to give any comments about this survey or the general topic matter.

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Thank you for participating.

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