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Music Therapy Assessment for Severely Emotionally Disturbed Children: A Pilot Study

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The purpose of this study was to pilot a music therapy assessment instrument for severely emotionally disturbed children. The subjects in this pilot were 20 children, 13 male and 7 female, at a residential treatment center in Cleveland, Ohio. After conducting an extensive literature review, the authors developed a music therapy assessment instrument measuring 4 relevant domains: behavioral/social functioning, emotional responsiveness, language/communication abilities, and music skills. Responses were coded into 3 categories: defensive/withdrawn, target behavior, and disruptive/intrusive. Results demonstrated that subjects displayed significantly more behaviors in the disruptive/intrusive domain. High inter-rater reliability scores of 91.5% for percent agreement and .808 for Cohen's kappa were achieved utilizing this assessment instrument.

The phrase "severely emotionally disturbed" (SED) refers to a rather diverse group of diagnoses including behavior disorders, schizophrenia, affective disorders (including mania and depression), autism, anxiety disorders, and attachment disorders. Children who are referred to as severely emotionally disturbed may not achieve social and cognitive milestones appropriate to their chronological age and require specialized intervention and educational settings due to aggressive impulsivity, short attention spans,

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difficulty concentrating, poor on-task behavior, and an inability to manage powerful negative affects related to trauma (Paul, 1984). SED children in settings such as institutional residential treatment facilities are thought to be among the most emotionally damaged groups of children in our society. They are more likely to exhibit significant psychiatric impairment which is unresponsive to even the most intensive community-based treatments (Hussey, 1996).

In the music therapy literature, many different terms have been used to describe SED children. Wayne (1944) described SED children in terms of their I.Q. score and chronological age since these were the only standardized information available at that time. The severity of motional and behavioral disturbances could not be determined. In 1960, Heimlich described ED children as "treatment resistant." These children failed in school, were restless, demonstrated destructive tendencies, and displayed inabilities to relate to peers and adults. Heimlich also categorized ED children by characteristic variations in symptoms: timid and repressed, hyperactive and anxious, and overcontrolled and conforming. This attempt was the first in music therapy literature to define emotional disturbances in these children. Michel (1968) summarized typical diagnoses of these children as behavior disorders, social maladjustments, psychosis, and autism. In 1968, Robison incorporated background factors of emotional disturbances. These included emotional neglect and/or abuse, parental divorce, trauma during family quarrels, succession of school and foster family placements. This reflected a growing awareness and understanding of child abuse and its devastating impact on child development. Finally, Burkhardt-Mramor (1996) addressed one subgroup of SED children: attachment disordered. An early and significant disruption in developing the capacity to form a trusting relationship with the primary caregiver was the background of a child who displayed an impaired ability to form a healthy relationship with others. In this case study, Burkhardt-Mramor included extensive background history, primary diagnosis, I.Q., and the problem areas addressed in music therapy.

Benefits of Music Therapy Intervention with Severely Emotionally Disturbed Children

Music has been used in different ways to treat emotionally disturbed children and adolescents. A review of the literature delin-

eates five categories of perceived benefits in utilizing music therapy in the treatment of emotionally disturbed children. They are affective functioning, communication, social dysfunction, cognitive dysfunction, and musical responses. These categories represent general domains of functioning where music therapy intervention has been applied. Table 1 chronicles and summarizes the researched benefits of music therapy with emotionally disturbed children by domain.

Music therapists who are part of an interdisciplinary team play an important role in contributing distinct music interventions with valuable and specific application to SED children. Dreikurs and Crocker (1956) proposed that music, when used as a means of nonverbal communication, can be considered an optimal tool for disturbed children who have difficulties in verbally communicating.

Music therapists working with SED children in the most intensive treatment settings such as residential treatment find a dearth of pertinent research and literature to guide their work. Only five reports could be found in a review of literature. Steele (1975) recorded the responses of residential children in music therapy. Merle-Fishman & Marcus (1982) documented musical behaviors and preferences. Presti (1984) developed a levels system approach to address motor and social skills. Burkhardt-Mramor (1996) examined reciprocal relationship skills and attachment issues. Finally, Hong, Hussey, and Heng (1998) documented the utility of music therapy with SED children in residential treatment.

In related literature, creative arts therapies have been employed with similar populations, including sexually abused preadolescent girls and juvenile sex offenders. Powell and Faherty (1990) created a 20-session design for a creative arts therapy intervention with preadolescent sexually abused girls. The goal of these sessions was to begin the process of working through the complex issues regarding sexual abuse. A music-centered creative arts approach was employed in a sex offenders treatment program for male juveniles as well (Skaggs, 1997). Modalities used in treatment included guided imagery and music, music based techniques, visual arts, and creative writing.

One study combined the use of music and art to assess emotional health in elementary school children. Giles, Cogan, and Cox (1991) analyzed drawings of 255 first and second graders, which were made while listening to a specific genre of music: classical,

TABLE 1

Perceived Benefits of Music Interventions with Emotionally Disturbed Children

Goal	Author(s) and year(s)
Affective functioning	
Decrease tension	Lindecker, 1954; Wayne, 1944
Decrease level of anxiety	Cooke, 1969; Joseph and Heimlich, 1959; Mitchell, 1966
Increase tolerance for frustration	Crocker, 1968
Increase sense of security	Alward and Rule, 1959; Harbert, 1956
Elicit appropriate emotional responses	Dreikurs and Crocker, 1956
Recognize moods and emotions	Ficken, 1976; Ragland and Apprey, 1974
Increase emotional health	Giles, Cogan, and Cox, 1991
Experience and express emotions	Wasserman, 1972; Werbner, 1966; Wheeler, 1987
Communication	
Increase ability to self-express	Wasserman, 1972
Increase level of creativity	Harbert, 1956
Initiate and maintain communication	Nordoff and Robbins, 1971
Express feelings regarding abuse	Wheeler, 1987
Music as mode of communication	Heimlich, 1965
Projective technique to tell about self	Grossman, 1978
Social dysfunction	
Increase social awareness & cooperation	Wasserman, 1972; Werbner, 1966; Wheeler, 1987
Improve ability to relate to others	Joseph and Heimlich, 1959
Increase appropriate social behaviors	Michel, 1971; Michel and Farrell, 1973
Increase on-task behavior	Steele, 1975
Increase on-task, cooperative behavior	Presti, 1984
Increase reciprocal interaction	Burkhardt-Mramor, 1996
Decrease disruptive behavior	Hanser, 1973; Reid et al., 1975; Scott, 1970; Wilson, 1976
Cognitive dysfunction	
Increase attention span	Reid et al., 1975; Scott, 1970; Wilson, 1976
Improve attention and learning	Joseph and Heimlich, 1959
Increase academic achievement	Michel, 1971; Michel and Farrell, 1073; Wasserman, 1972
Improve self-confidence, security	Harbert, 1956
Improve short-term memory	Finch, Edwards, and Searcy, 1984
Improve self-concept, sense of mastery	Wheeler, 1987
Musical responses	
Create external structure to control behavior	Gibbons, 1983
Test musical responses	Giacobbe and Graham, 1978
Measure musical aptitude	Hunter, 1980
Explore musical behaviors and preferences	Merle-Fishman and Marcus, 1982

Disney, and new age. Results of this study documented that Disney and new age music significantly altered mood in these children. In addition, 41% of the children were found to have depression, aggression, or organicity, and often masked their feelings, but revealed them in their art work.

Assessment in the Creative Arts Therapies

Many different therapies utilize assessment methods to ascertain a child's developmental, behavioral, and cognitive functioning. Many popular assessment methods used by clinicians depend heavily upon verbalizations, yet many young children are still developing language abilities and older children may have significant language limitations. Verbal impediments and language limitations may be particularly evident in maltreated children. The verbal disclosure and processing of traumatic events can evoke significant feelings of fear and anxiety. Alternative methods of assessment need to be utilized to encourage children's nonverbal communications. Any method that may assist the clinician in investigating and validating the child's emotional and developmental status warrants consideration.

The creative arts therapies are frequently relied on for assessment and intervention with severely emotionally disturbed children, especially those who are very young and/or developmentally delayed. Children may be more likely to engage in music, art, or dance/movement therapy because it provides a relatively nonthreatening condition for selfexpression. An art or music activity allows for a self-directed, gradual relating of an experience (more so than a time-urgent adult interview).

Assessment and documentation is important in the creative arts therapies. For example, several methods have been utilized in analyzing and recording movement in dance/movement therapy. One method is the Labanotation method of movement notation (Hutchinson, 1977) or Effort Economy, created by Rudolf Laban (1956). Another well-known tool used in movement observation is the Movement Diagnostic Scale, which assesses characteristics of hospitalized patients with psychiatric illnesses (Davis, 1970). In 1980, the Effort-Shape analysis was created by Davis and Barteneiff to define the expressive nature of movement (Barteneiff, 1980). In 1981, Staum developed her own system of analyzing movement in music therapy, thus intertwining two creative arts therapies.

In art therapy, assessments have been utilized to describe personality (Brooke, 1996). In general, there are three major types of personality assessments: self-report inventories, performance tests, and projective techniques. Art therapy assessments often employ projective techniques to measure aspects of personality. A brief review of several commonly used art therapy assessments is found in Table 2.

Assessment in Music Therapy

Similar to other creative therapies, there is also interest in valid and reliable music therapy assessments. Many informal methods of assessment exist; however, specific tools are less common (Jones, 1986). Assessment is considered a vital part of music therapy and has been identified in the American Music Therapy Association (AMTA) Standards of Clinical Practice (2000) as the first step in providing treatment. These guidelines state that a music therapy assessment "will include the general categories of psychological, cognitive, communicative, social, and physiological functioning focusing on the client's needs and strengths. . . . (and) will also determine the client's responses to music, music skills, and musical preferences" (American Music Therapy Association, 2000, p. 26). The results of assessment are then incorporated into an individualized music therapy intervention plan.

The need for music therapy assessment is driven by two major factors—the current need to establish credibility through accountability and the important role that assessment plays in the treatment process. The manner in which a music therapist assesses clients can reflect a level of professionalism. Assessment methods can demonstrate how music therapists relate to the larger professional community (Isenberg-Grzeda, 1988). Transferrable language (i.e., language in the assessment tool that is readily understood by other clinicians) is an important component in an assessment instrument as well, because it supports the generalization of assessment results to other clinical settings. These results are critical in the process of intervention because they give the clinician an understanding of the client's present functioning level, which leads to recommendations for preferred treatment, as well as potential goals and objectives. Music therapists have the ability to "enhance the credibility of the music therapy profession by providing an avenue to articulate our unique contribution to the com-

TABLE 2

Review of Selected Art Therapy Assessment Instruments

Assessment instrument	Purpose	Scoring
Human Figure Drawing Test (Koppitz)	Determine developmental level, personality	Items present/absent
Kinetic Family Drawings (Burns & Kaufman)	Understand child development: self-concept, relationships	Distance of self from other figures, size of figures
Diagnostic Drawing Series (Cohen)	Link picture analysis with diagnosis	Presence/absence of listed variables
House Tree Perrson Test (Buck)	Provide information on personality, relationships	Presence/absence of features
Silver Drawing Test (Silver)	Assess cognitive abilities	Concepts scored by percentile ranks and T-scores
Draw a Person Test: SPED (Naglien, McNeish, & Bardos)	Identify individuals who have emotional problems	Figure dimensions, content of drawing

Note: The data in this table are from *A therapist's guide to art therapy assessment: Tools of the trade* by S. L. Brooke, 1996, Springfield, IL: Charles C. Thomas.

munity of mental health professionals and to society at large" (Isenberg-Grzeda, 1988, p. 166).

In reviewing music therapy assessment literature, five themes emerge as important considerations for assessment: client population, area of functioning, theory/model, technique, and response to the institution (Isenberg-Grzeda, 1988). Many assessments in the music therapy literature were created for a specific population (e.g., mentally handicapped, developmentally disabled, autistic, psychiatric, etc.) in order to measure domains of functioning distinctive to the population. A music therapist's theoretical approach to practice (psychodynamic, behavioral, etc.) will also be reflected in the assessment tool, as the instrument is usually designed to measure domains that are commonly addressed during intervention. Technique refers to how music is used in the assessment session. Is the music improvisational or concretely structured with the use of written music? Finally, assessment instruments are often created to address a particular need of an institution. For example, the development of the Music/Activity Therapy Intake Assessment for Psychiatric Patients (Braswell et al., 1983) was based on a requirement by the Joint Commission of Accreditation of Hospitals. Each of these five parameters influences the music therapist's choice of test items on the instrument itself as well as the use of music in the actual assessment session.

Current Music Therapy Assessment Tools for Emotionally Disturbed Children

In the music therapy literature, several assessment tools exist that measure functioning levels of emotionally disturbed children and adolescents. Several different approaches have been applied during the assessment process as well. Loewy (1995) used a psychotherapeutic approach in assessing an emotionally disturbed boy, enlisting a panel of five music psychotherapists in viewing a videotaped assessment session. Wells (1988) developed an assessment tool to determine an emotionally disturbed adolescent's appropriateness for service. Wells assessed three tasks: song choice, composition, and improvisation. Merle-Fishman and Marcus (1982) assessed instrumental preference, rhythmic response, and vocal/verbal behavior of emotionally disturbed children and how this population compares to nondisturbed children. Larson (1981) investigated the perceptual abilities of emotionally disturbed chil-

dren versus nondisturbed children on visual and auditory recognition tasks. Finally, Goodman (1989) created the "Music Therapy Assessment for Emotionally Disturbed Children." The instrument design evaluates several different areas of functioning in emotionally disturbed children. The design of the "Music Therapy Assessment for Emotionally Disturbed Children" is open-ended and outlines basic musical components that a child might express. The interpretation of how, why, and when a child musically communicates is subjective and left to the therapist. In contrast to assessment for severely profoundly handicapped children (Michel & Rohrbacher, 1982) and the developmentally delayed client (Boone, 1980; Boxill, 1985; Grant, 1995; Rider, 1981), this assessment for the emotionally disturbed child concentrates "not only on the facts of developmental skills but on the quality, content, and development of these affective behaviors" (Goodman, 1989). Goodman's goals in using a descriptive music therapy assessment tool included: (a) interview the child regarding his/her previous background in music and the use of music with other family members, (b) assess developmental appropriateness of the child's social and emotional functioning while in the music therapy setting, (c) assess the child's ability to organize his/her musical experience, (d) follow the content of musical behavior exhibited by the child, (e) follow the changes in musical behavior exhibited by the child over the course of the session and the possible meanings of these variations, (f) interpret the child's musical behavior while considering family history, current behavioral problems, affective developmental levels, and current diagnosis, and (g) investigate musical responses characteristic of his/her particular pathology (Goodman, 1989).

Rationale for the Creation of The Beech Brook Music Therapy Assessment

The development of a music therapy assessment tool for use with severely emotionally disturbed children was the result of several compelling clinical needs. First, no such tool currently exists in the literature. Assessments for mildly disturbed children do not always meet the needs of SED children. Proper assessment yields important information that can be interpreted and used in making treatment decisions. Secondly, these children are a diverse and heterogeneous group. A standardized assessment tool would help to compare this diverse group of children in a manner which facili-

tates an understanding of similarities and differences. Third, a standardized assessment tool would provide preintervention documentation of each child's functioning level (pretest), as well as the ability to document changes throughout the music therapy treatment process. This need is well supported in the music therapy literature. For example, Lipe (1995) noted that strengths and weaknesses identified during assessment can assist the music therapist in creating intervention goals and objectives and in reviewing the effectiveness of treatment. Finally, in order to maintain accountability, music therapists working with severely emotionally disturbed children need assessment and evaluation techniques (Michel, 2000). This has become an important issue for many clinicians, including music therapists.

Design of the Assessment Tool

The Beech Brook Music Therapy Assessment was designed to help evaluate children at Beech Brook, a large child treatment center located in Cleveland, Ohio. Each domain and goal area included in the assessment tool was selected based on over three years of referral pattern data. The majority of children are referred to music therapy services at Beech Brook to address significant deficits in behavioral, social, emotional, and communication functioning. Children requiring therapy in areas such as perceptual/motor are referred to occupational services instead. Therefore, in developing this assessment tool, focus was given on the reasons for referral to music therapy. Perceptual/motor skills were informally assessed in the initial session(s), however, and this information was used by the music therapist when planning appropriate activities for the child.

The Beech Brook Music Therapy Assessment measures children on the basis on their behavioral and social functioning, emotional responsiveness, language and communication abilities, and musical skills. These functions are measured along a continuum anchored by defensive/withdrawn behavior on one pole, and disruptive/intrusive behavior at the other pole. In the middle of the continuum are target behaviors. Defensive/withdrawn behaviors include those a behaviors that indicate deficits (i.e., withdrawn, depressed, timid, shy, fearful, covert observed behaviors). These behaviors are indicated on the assessment as minus 2 (–2) and minus 1 (-1) scores. Disruptive/intrusive behaviors are those that indicate

excesses (i.e., aggressing, overpowering, controlling, dominating, overt observed behaviors). Behavioral excesses are scored as plus 1 (+1) and plus 2 (+2) on the assessment form. Target behaviors (those marked at 0 on the assessment) are considered to be in the normal or socially appropriate range. When the assessment form is completed, raw score subtotals can be categorized as defensive/withdrawn, target, or disruptive/intrusive, and total scores will indicate an overall trend of behavior exhibited by that client (see Table 3).

This assessment tool was created for dual purposes—to provide the music therapist with a concise and precise initial assessment that can guide treatment planning, and to provide a tool to help evaluate changes over time. At the end of 3 months of music therapy intervention, the assessment tool could be completed again by the music therapist and the results compared to the baseline results to evaluate progress.

Method

Subjects and Setting

Participants in this study were clients at a residential and day treatment center for SED children located in Cleveland, Ohio. The children and families served by this agency are almost exclusively low-income, with the vast majority being urban African-American children. The total number of clients included in this study was 20: 13 males and 7 females. Client ages ranged from 3 to 15 years (SD = 3.26). Each client included in this pilot study was referred to music therapy by his/her treatment team. Following referral, each client received one 60-minute individualized music therapy assessment session. Sixteen of the 20 clients were then seen for music therapy intervention following the initial assessment. Four clients were referred to another therapy.

Procedure

The assessment instrument was administered by the music therapist during individual assessment sessions. Before the session, the music therapist gathered background information on the client by reading the client's file and consulting with the members of the treatment team. The music therapist then selected age-appropriate music for use in session. The majority of music used during the as-

TABLE 3

Beech Brook Music Therapy Assessment for Severely Emotionally Disturbed Children © 2002

Name: _____ **Date of Birth:** _____ **Case #:** _____

Beech Brook Program: _____ **Referred by:** _____

Date of Assessment: _____ **Therapist Completing Assessment:** _____

Scoring Key: Please rate each skill listed via circling the appropriate number

Behavioral/Social	**Defensive/Withdrawn**		**Target Behavior**		**Disruptive/Intrusive**
Play Skills	**2**	**1**	**0**	**1**	**2**
	Did not participate or play instruments; appeared afraid, timid, shy	Demonstrated some interaction (parallel play)	Consistently took turns with therapist (cooperative play)	Insisted on own turn/way 1-2 times in session; did not take turns with therapist 1-2 times	Frequently insisted on own turn/way throughout session (overpowering), did not take turns
Attention to Task	**2**	**1**	**0**	**1**	**2**
	Attention to task <1 minute independently	Attention to task 1-3 minutes independently	Attention to task >3 minutes; little or no redirection; no fidgeting	Attention to task 1-3 minutes with prompting, some fidgeting	Attention to task <1 minute with prompting; fidgeted frequently; verbally complained about task/activity
Attempting Activities	**2**	**1**	**0**	**1**	**2**
	Attempted activity when given >2 prompts, but did not complete with coaching, withdrew	Attempted activity when given 1-2 prompts, but did not complete with coaching	Attempted activity as directed by therapist, completed activity (without coaching)	Attempted activity when given 1-2 prompts; completed activity with coaching	Refused* to attempt activity, even when given >2 prompts
Impulse Control	**2**	**1**	**0**	**1**	**2**
	Waited turn as directed, but did not play instrument when prompted; appeared disinterested, withdrawn	Waited turn when directed, but did not play instrument until given 1-2 prompts	Waited turn patiently and independently; did not reach for/play instruments out of turn	Reached for/played instruments out of turn 1-2 times in session, responded to redirection when given ("quiet hands")	Reached for/played instruments out of >2 times in session
Compliance with Structure	**2**	**1**	**0**	**1**	**2**
	Did not go to next activity when directed, but did not tantrum; withdrew from session	After given direction, went to next activity when given 1-2 verbal prompts per activity	Transitioned directly without incident, appropriate compliance with structure displayed consistently	Displayed tantrum behavior in transition 1 time, inappropriate compliance with structure displayed 1-2 times in session	Tantrumed ≥2 times during transitions; insisted on doing things own way throughout session
Eye Contact	**2**	**1**	**0**	**1**	**2**
	Displayed little or no eye contact independently	Displayed some eye contact independently	Demonstrated consistent eye contact independently	Displayed some eye contact only when directed	Refused* to make eye contact throughout session, even when directed
Personal Boundaries	**2**	**1**	**0**	**1**	**2**
	Rejected therapist's request to enter into personal space throughout session; removed self or avoided appropriate personal boundaries (closeness)	Stayed in own space throughout session; allowed therapist to appropriately enter into personal space when requested only when given 1-2 additional verbal prompts	Respected therapist's personal boundaries; stayed in own space independently throughout session; allowed therapist to appropriately enter into personal space when requested	Required 1 verbal/physical prompt to respect therapist's personal boundaries; required 1 verbal prompt to stay in own space in session	Required ≥2 verbal/physical prompts to respect therapist's personal boundaries; required ≥2 verbal prompts to stay in own space in session
Subtotals:	**Defensive/Withdrawn**	☐		**Disruptive/Intrusive**	☐

TABLE 3
Continued

	Defensive/Withdrawn		Target Behavior		Disruptive/Intrusive
Emotional					
Facial Affect	2	1	0	1	2
	Appeared depressed or withdrawn throughout session	Appeared flat throughout session	Appeared appropriate throughout session	Appeared overly silly at some point in session	Appeared overly happy or angry at some point in session
Coping Skills	2	1	0	1	2
	Attempted to divert therapist's attention from task >2 times, evasive	Attempted to divert therapist's attention from task 1-2 times; evasive	Displayed little or no frustration*, did not attempt to divert therapist's attention from task	Coped with frustration* appropriately when redirected 1-2 times	Appeared easily frustrated* throughout session; hit, kicked, etc
Handling Mistakes	2	1	0	1	2
	Did not continue activity after making mistake	Continued activity with much encouragement	Appropriately coped with mistakes; no outbursts; continued on with activity	Displayed emotional outbursts 1-2 times in session when mistakes made	Displayed emotional outbursts >2 times in session when mistakes made
Display of Affection	2	1	0	1	2
	Displayed tactile defensiveness throughout session	Displayed tactile defensiveness 1-2 times in session	Displayed appropriately affectionate behavior (asked for hug, etc) throughout session	Displayed overly affectionate behavior (touched, hugged) 1-2 times in session without asking	Displayed overly affectionate behavior (touched, hugged) >2 times in session without asking
Subtotals:	**Defensive/Withdrawn**			**Disruptive/Intrusive**	
Language/Communication	**Defensive/Withdrawn**		**Target Behavior**		**Disruptive/Intrusive**
Response to Simple Directions	2	1	0	1	2
	Complied with <1/2 of therapist's directions when first given	Complied with ≥1/2 of therapist's directions when first given	Complied with all directions when first given	Insisted on own way 1-2 times in session; did not respond to redirection	Insisted on own way throughout session; did not responsd to redirection
Self Expression	2	1	0	1	2
	Demonstrated little or no appropriate communication of feelings, wants/needs, likes/dislikes	Demonstrated some appropriate communication of feelings, wants/needs, likes/dislikes	Consistently demonstrated appropriate communication of feelings, wants/needs, likes/dislikes	Demonstrated some age-inappropriate communication of feelings, wants/needs, likes/dislikes; expressed self inappropriately	Demonstrated frequent inappropriate communication of feelings, wants/needs, likes/dislikes; expressed self inappropriately
Expressive Language	2	1	0	1	2
	Nonverbal; did not use words or signs to communicate	Spoke in age-appropriate 2-3 word phrases	Spoke in age-appropriate, full sentences consistently	Spoke out of turn 1-2 times in session; attempted to direct therapist	Spoke in constant, run-on sentences throughout session; attempted to direct therapist
Response to Praise	2	1	0	1	2
	Displayed little or no positive response to praise throughout session,	Displayed some positive response to praise in session	Displayed positive response to praise consistently throughout session	Displayed some negative response to praise in session	Displayed overt negative response to praise throughout session
Answering Questions	2	1	0	1	2
	Answered questions when given 1-2 prompts per question	Answered most/all questions when given 1-2 prompts throughout session	Answered questions on first request most of the time	Refused* to answer most/all questions initially, but responded when given 1-2 prompts	Refused* to answer questions, even when prompted
Subtotals:	**Defensive/Withdrawn**			**Disruptive/Intrusive**	

TABLE 3
Continued

Musical	**Defensive/Withdrawn**		**Target Behavior**		**Disruptive/Intrusive**
Musical Awareness	**2**	**1**	**0**	**1**	**2**
	Inconsistently altered tempo and/or dynamic to match outside stimulus when given 1 prompt or cue	Consistently altered tempo and/or dynamic to match outside stimulus when given 1 prompt or cue	Consistently altered tempo and/or dynamic to match outside stimulus independently	Did not alter tempo an/or dynamic to match outside stimulus, even when given prompts/cues	Displayed overpowering, loud dynamics throughout session
Response to Music	**2**	**1**	**0**	**1**	**2**
	Exhibited very little pleasure responses in musical activities in session	Exhibited several pleasure responses in musical activities throughout session	Exhibited consistent pleasure responses in musical activities throughout session	Exhibited mixed responses in musical activities throughout session (inconsistently smiled, then frowned, etc - change of mood drastic)	Did not exhibit any pleasure responses in musical activities in session; exhibited overt negative responses in musical activities
Response to Cue	**2**	**1**	**0**	**1**	**2**
	Responded to verbal cue* when paired with ≥2 verbal/physical prompts	Responded to verbal cue* when paired with 1 physical prompt	Consistently responded to verbal cue* ("stop", "go') when first given	Did not initially respond to verbal cue* when first given, but responded after given a verbal prompt	Did not respond to verbal cue*, even when prompted, did the opposite of what was verbally cued
Imitation	**2**	**1**	**0**	**1**	**2**
	Imitated simple body movements when given >2 verbal/physical prompts	Imitated simple body movements when given 1 physical prompt	Consistently imitated simple body movements when first shown	Did not imitate simple body movements at first, but then responded when given 1 verbal prompt	Did not imitate simple body movements at all
Vocal Inflection	**2**	**1**	**0**	**1**	**2**
	Sang/spoke in extremely soft voice throughout session	Sang/spoke in soft voice throughout session	Consistently sang/spoke in appropriate volume independenty throughout session	Sang/spoke in loud voice throughout session	Sang/spoke in extremely loud voice throughout session
Subtotals:	**Defensive/Withdrawn**			**Disruptive/Intrusive**	
Total Raw Scores:	**Defensive/Withdrawn**			**Disruptive/Intrusive**	

***Definitions for above terms:**

*defensive/withdrawn = those behaviors that indicate deficits in skill areas, passive, depressed, timid, shy, fearful, covert observed behaviors (internalizing behaviors)

*disruptive/intrusive = those behaviors that indicate excesses or overt responses in skill areas; overpowering, controlling, aggressive, overt behaviors (externalizing behaviors)

*frustration = as evidenced by any one of the following behaviors: kicking, screaming, shouting, crying, head down, physical withdrawal from activity area, refusal to continue with activity, throwing instruments

*refused = as evidenced by any one of the following behaviors: physical withdrawal from activity area, turning head and body away from therapist, not continuing with activity as directed, verbal expression of negative (such as "no"), throwing instruments

*verbal cue = any verbal instruction given in session to start or end a musical activity (stop, go, etc.)

Additional comments on back of assessment form.

TABLE 4
Reliability per Assessed Skill Area

Assessed skill area	Reliability
Play skills	100%
Attention to task	100%
Attempting activities	95%
Impulse control	90%
Compliance with structure	95%
Eye contact	80%
Personal boundaries	100%
Facial affect	85%
Coping skills	90%
Handling mistakes	100%
Display of affection	95%
Response to simple directions	90%
Self expression	90%
Expressive language	90%
Response to praise	90%
Answering questions	90%
Musical awareness	90%
Response to music	90%
Response to cue	85%
Imitation	90%
Vocal inflection	90%

sessment session was live music. Instruments utilized included the piano, guitar, keyboard, omnichord, drum set, xylophone, various rhythm instruments, CD/cassette player, and a variety of audio CD's and tapes. Throughout the session, the music therapist observed responses in the following domain areas: behavioral/social, emotional, language/communication, and musical. During the assessment session, a second music therapist observed and documented responses as well.

Following the assessment session, both music therapists completed the assessment form by coding the appropriate number for each behavior observed in session. Results were then compared and calculated for interrater reliability purposes. Following the reliability test, the music therapist who conducted the session analyzed the clinical needs of the client (based upon the assessment). Any skill that did not receive a score of 0 (target behavior) was considered as a potential target area for intervention. These need areas were then communicated to the client's treatment team.

TABLE 5
Domain Reliability

Domain	Reliability
Behavioral/social	94%
Emotional	92.5%
Language/communication	90%
Musical	90%

Results

The interrater reliability was computed for each assessed client using the percent agreement method (Hanser, 1987). Table 4 shows the overall reliability for each assessment item.

The assessment tool achieved 100% reliability in four skill areas: play skills, attention to task, personal boundaries, and handling mistakes. These four areas involve concrete behaviors that are easily observed and documented. Skill areas addressing more subjective behaviors (such as eye contact and facial affect) scored less than 90%, which indicates that these areas may be more challenging to accurately measure. For example, when measuring eye contact, the proximity of the rater to the assessed client is important. If the rater is in very close proximity to the client, it can be assumed that the accuracy of measurement would increase. Likewise, if the rater is physically distanced from the client (as the observer, not the active therapist), measured eye contact may not be as accurate. This reasoning may account for the lower reliability in these skill areas.

Table 5 displays the reliability for each domain area of the assessment tool. It is noteworthy that the behavioral/social domain area received the highest level of reliability. This may point to the training of the two music therapists, who both have strong behavioral backgrounds. These music therapists also worked in close collaboration with one another: joint supervision sessions, frequent consultations with one another regarding clinical applications, etc.

Figure 1 illustrates the interrater reliability for each client. Overall interrater reliability for the assessment tool was high, 91.5%. Individual client reliability scores ranged from 76%–100%.

The percent agreement as measured above is often not a good measure of interrater reliability because raters can agree or disagree by chance. To account for this, many researchers utilize a statistic called Cohen's kappa (Cohen, 1960), or K. Kappa "is a statis-

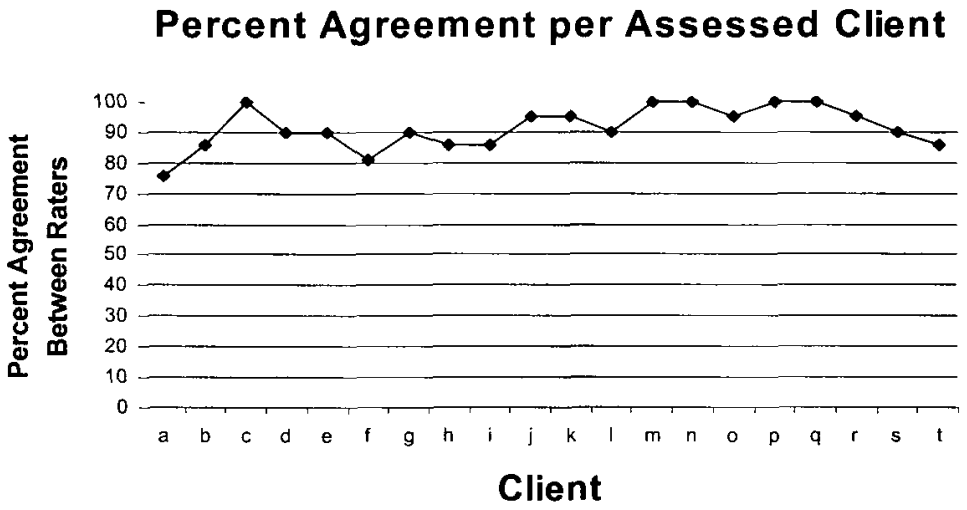

FIGURE 1.
Percent agreement per assessed client.

tic that measures how much better than chance the agreement is between a pair of coders on the presence or absence of binary (yes/no) themes in texts" (Bernard, 2000, p. 460). The formula for kappa is

$$K = \frac{\text{Observed} - \text{Chance}}{1 - \text{Chance}}$$

The following is a rough guide used in the interpretation of kappa (Altman, 1991):

Poor agreement = Less than 0.20
Fair agreement = 0.20 to 0.40
Moderate agreement = 0.40 to 0.60
Good agreement = 0.60 to 0.80
Very good agreement = 0.80 to 1.00

Figure 2 documents the kappa score for each client. Overall kappa for the assessment instrument was 0.81, which indicates a very good level of agreement.

The assessment tool documented varying levels of behaviors exhibited by the assessed clients. In determining which behaviors were more prevalent, the completed assessments were scored according to the rating scale (ranging from –2 to +2). Each score included ratings from both the music therapist who conducted the

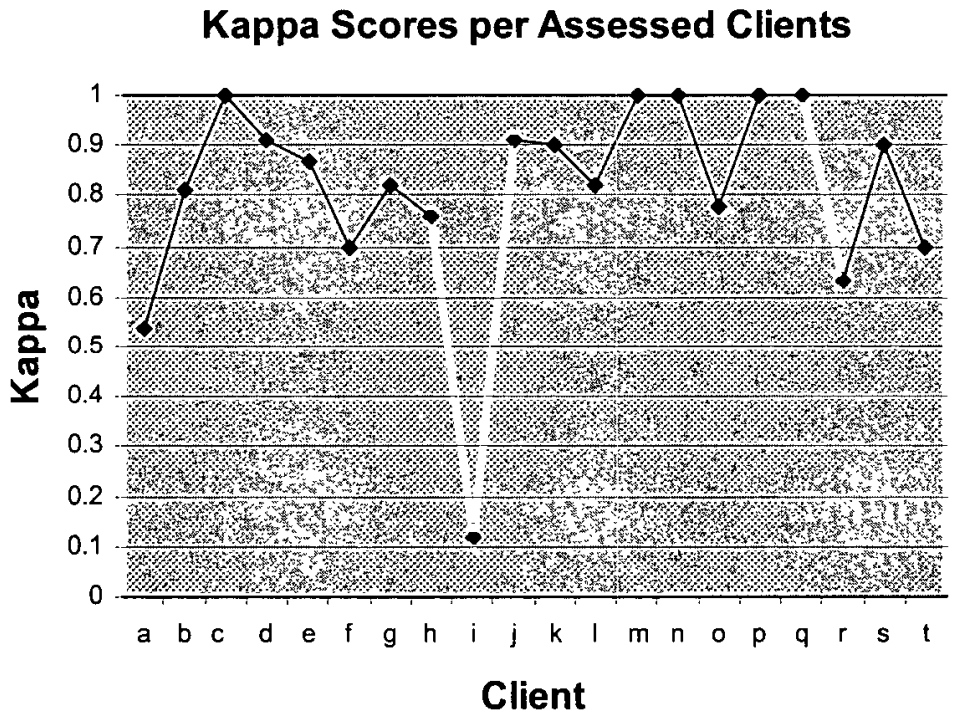

FIGURE 2.
Kappa scores per assessed clients.

session and the music therapist observer. The 20 scores for the assessed clients were then added together and divided by two. This number became the total raw score. It is noteworthy that the majority of the observed off-task behaviors documented in session are on the disruptive/intrusive spectrum. However, when comparing offtask behavior to target behavior, assessed clients (on average) displayed more target behaviors (see Figure 3).

The large proportion of target behaviors may be a result of several different factors. First, assessed children are often prompted by case managers, teachers, and so forth, to "be good in music therapy." Secondly, music therapy is also seen as a highly preferred intervention at Beech Brook, so children may exhibit more on-task behavior in their hope to "earn" a return trip to the music therapy room. Therefore, the music therapy room may simply be reinforcing for the child and serves as a motivator for appropriate behavior (i.e., the child wants to behave so that they can play the instruments). This concept is not a novel one to music therapists. In fact, Michel & Rohrbacher (1982) stated that exhibited behavior under

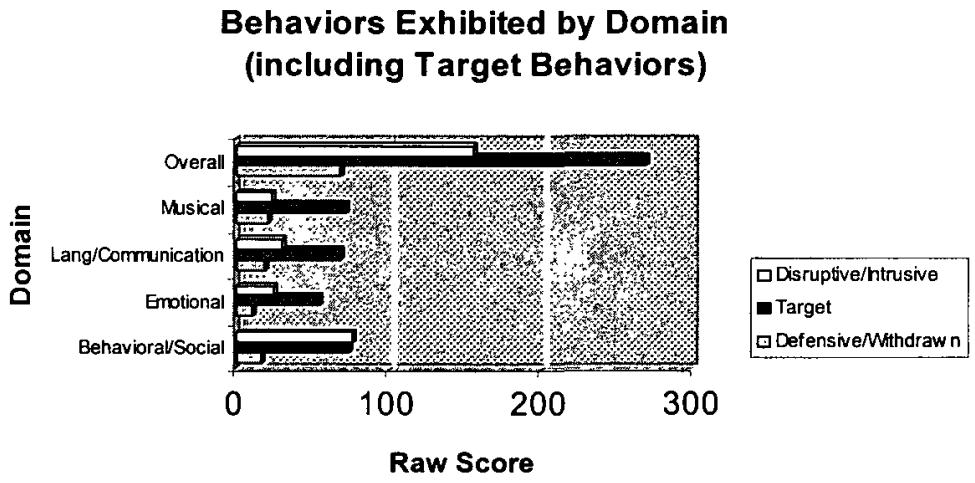

FIGURE 3.
Total behaviors exhibited for assessed clients (including target behaviors).

music conditions may be different, "sometimes radically different," than displayed in other settings (p. iii).

Discussion

A valid and reliable assessment instrument specific to SED children is important to the music therapy field for both clinical and research reasons. Reliable assessment instruments sensitive to discreet populations are rare in music therapy (Jones, 1986). This lack of specific assessment technology within the field is compounded by the general absence of information on the treatment of SED children. Generally, a substantial body of knowledge and the implementation of valid goals and objectives are two of the most basic requirements in any profession (Cohen & Gericke, 1972). Cohen, Averbach, & Katz (1978) point out that "no profession, whether it is music therapy or another discipline, can legitimately attain true professional stature without a viable assessment system, not merely the completion of an assessment form" (p. 92). Therefore, a standardized evaluation tool such as The Beech Brook Music Therapy Assessment is an important tool providing clinicians with practical, meaningful information necessary to formulate more sophisticated and individualized treatment goals and objectives. The music therapy assessment process serves as a springboard for a wider evaluation structure that may involve reviewing client charts, consultation with treatment team members, and other collateral contacts.

The Beech Brook Music Therapy Assessment contains transferrable language that is, language that is easily understood by clinicians outside of the field of music therapy. Three of the four domains of the assessment instrument are domains that are common within the mental health field—behavioral/social functioning, emotional responsiveness, and language/communication abilities. In addition, the coded category responses—defensive/withdrawn and disruptive/intrusive—are behaviors frequently identified for intervention by many child treatment models. Such shared clinical language optimizes the range of the music therapist's role on the treatment team, contributing valuable, readily understood information about the assessed child. This is important because the specialized music therapy assessment becomes a meaningful source of information to other clinicians targeting items that reflect relevant treatment needs of SED children.

Aside from enhancing clinical care, a standardized assessment approach also affords benefits as a research tool. There is a growing and strong movement in the health and mental health fields for funding evidence-based treatments. This trend is predicated upon the ability of researchers to document the efficacy of promising treatment approaches using primarily empirical methodologies. A standardized assessment provides a means for comparing subjects, not only leading to more individualized treatment planning, but also allowing for comparisons of differential treatment effects. Client subgroups can be identified and disaggregrated for both research and treatment purposes. A standardized assessment tool can quantify baseline functioning, and provide a reliable measure for tracking change over time. The pilot data from this study indicate that the Beech Brook Music Therapy Assessment is a reliable instrument. The average kappa score of 0.81, along with a percent agreement of 91.5% demonstrate very good interrater reliability. In addition, the scoring of the assessment instrument is straight-forward and intuitive. It is based on a frequency-count structure (i.e., how many times the client reaches for an instrument out of turn, etc.). When totaled, a high score (either plus or minus) indicates greater level of disturbance and more extreme behavior on either pole. Such conceptual and psychometric elegance is promising for an assessment technology that serves dual clinical and research functions.

The implementation of the assessment instrument administered in an individual setting (i.e., one-to-one sessions between therapist

and client) is limited by existing physical and temporal conditions. A 60-minute assessment session can only give the music therapist a small picture of a client's overall functioning level. For instance, motor skills are not formally included in the assessment. This is largely due to practical reasons including the fact that clients are rarely referred to music therapy to address motor skills, and instead would be referred to occupational therapy. Motor skill deficits are not formally included in the clinical definition of severe emotional disturbance, and as such we chose to concentrate on behavioral and emotional problems that require more immediate attention. Indeed, motor skills are informally observed in the assessment session and considered in planning appropriate musical experiences for the client. Practical and logistic concerns have emphasized the development of a concise and specific tool that is easy to implement in active clinical settings.

The initial findings from the small number of clients ($N = 20$) that were assessed for this pilot study are promising; however, a larger subject pool is needed for further testing of this instrument. Expanded field testing of this assessment tool is recommended for further reliability analyses as well as the applicability of this assessment instrument to other similar populations, such as emotionally disturbed children in school settings. Clinicians working with SED children may benefit from the use of an evaluative instrument specifically tailored to assess the needs of this population.

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