

Towards the Development of a Tool to Measure Therapeutic Outcomes of Music Therapy

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Background

Music therapy aims to maintain and improve various aspects of function within the cognitive, communicative, physical and social realms. It is often difficult, however, to measure outcomes for patients with severe cognitive, communication or physical impairments. A literature review revealed a paucity of systematic research using rigorous designs that clearly explains the effects of music therapy.

This study was originally designed to measure outcomes for this group of patients who demonstrate limited, overt response to treatment. Upon further consideration, the team set out to develop a tool that would capture not only the subtle responses of patients with limited function, but the full range of responses for all patients in complex continuing care.

Purpose

This research project is an initial attempt to measure the full range of responses in music therapy, by identifying and ordering overt behaviours presented by all patients, and factors that define responsiveness.

The tool, Levels of Responsiveness in Music Therapy, is intended to be useful in measuring both the effectiveness of music therapy in future studies, and for identifying specific patient outcomes and change in clinical application.

Method

Fourteen patients representing a wide range of abilities, personalities and impairments were videotaped in individual and group sessions. All observable responses to music therapy were listed and ordered from low to high in terms of the localization, organization, initiation and creativity of response.

To measure responsiveness, we examined the following:

Reaction- Does the patient demonstrate overt responses?

Localization- Is the behaviour generalized (non-specific to music or therapist) or localized (specific to the music or therapist)?

Organization- Is the behaviour organized or disorganized?

Initiation- Is the behaviour spontaneous or prompted?

Creativity- Does the behaviour introduce original ideas beyond those presented?

Transcendence- Does the behaviour exceed or surpass the patient's normal abilities or level of functioning?

Through careful observation, listing and ordering of the overt behaviours presented, the researchers developed a 7-point scale measuring levels of responsiveness in music therapy.

The Tool

LEVELS OF RESPONSIVENESS IN MUSIC THERAPY

LEVEL I- No Response

Definition: Patient shows no observable response to music/therapist.

Example: Flat affect.

LEVEL II- Generalized Response

Definition: Patient behaviours are present but do not appear directly related/ attributed to the music/therapist. Patient responds in non-specific, disorganized, inconsistent and/or non-purposeful manner.

Examples:

- random changes in facial expression, positioning or posture
- stereotypic and limited responses (staring, chewing, pursing lips, restless movements, fidgeting, mouthing instruments)
- inappropriate use of instruments
- perseverative behaviours, not related to music/ therapist

LEVEL III- Localized/ Disorganized Response

Definition: Patient behaviours are specific to music/therapist stimulation but are inconsistent or disorganized.

Examples:

- changes in breathing patterns or facial expression (e.g. smiles, tears, grimace)
- unpredictable, sudden responses
- inconsistent attention and responses to cues, or hearing name
- non-rhythmic, general movement
- perseverative musical behaviour (vocalization or instrument play)

LEVEL IV- Organized/ Prompted Response

Definition: Patient behaviours are dependent on external prompts and organized, but not spontaneous.

Examples:

- no initiation/ speaks when spoken to, responds when addressed

- appropriate and responsive change in facial affect (e.g. smiles when smiled at), laughs in response to humour
- responds to starts/ stops in music
- intentional/ purposeful responses: may include atypical movements
- imitates actions
- accepts or resists touch
- visually tracks movements of instruments, therapist, others
- maintains rhythmic movement (tapping, playing, etc.) when cued
- mouths words/ phrases in familiar songs when prompted, may sing along by rote
- inserts words or phrase in familiar song in response to pausing technique
- movements/ sounds produced on cue
- answers questions about music/ life history
- expresses preference when prompted

LEVEL V- Self- Initiated/ Non-Creative Response

Definition: Patient initiates involvement, non-dependent on cues/ prompting, but does not express new/ original ideas or behaviours beyond what is presented.

Examples:

- initiates contact and communication with instrument/ others
- initiates comments/ asks questions about the music/ therapist/ setting
- makes musical references
- taps, claps or plays instrument to basic beat of song without prompting
- anticipates/ indicates cadence with movement, gesture, sound or word
- accentuates final beat
- expresses preference, non-prompted
- initiates singing of familiar songs
- adds gestures during familiar songs to express meaning/ acting out song lyrics
- engages learned responses: applause following music performance
- impersonates performer such as conductor, musician, dancer
- changes, adapts quality of voice to reflect character of song/performer/instrument

LEVEL VI- Creative Response

Definition: Patient introduces new ideas/ behaviours beyond what is presented.

Example:

- creates new melodies, rhythms, or provides harmonization
- musical exploration, experimentation, improvisation
- introduces new possibilities, associations, topics for reminiscence
- introduces changes in volume, tempo, rhythm
- engages in brainstorming, song writing, composition
- may purposefully influence others with musical behaviour
- may present metaphors for music, musical qualities, sound

LEVEL VII- Transcendent Response

*For clinical use only- measured against patient's personal norm.

Definition: Behaviours exceed or surpass the patient's usual abilities/ level of functioning.

Example:

- 'ah-ha' response, wherein the patient reaches a higher level of personal expressiveness, change, communication, personal insight or musicality as a direct result of involvement in music therapy
- response is therapeutically significant (may relate directly to individual patient goals)
- musical behaviour may reflect a congruency between actions and emotions, not usually present
- abstract, philosophical engagement
- patient may associate, relate music/ themes to life experience
- patient may interpret significance/ meaning of musical interplay, provide analogies or metaphors to personal life experience
- patient may show personal insight not usually present
- patient may engage in a higher level of dynamic interplay with music or others

Analysis/ Results

Initial validity testing was scheduled with a group of expert clinicians including music therapists. Using Kappa as a measure, the goal was to attain a degree of agreement not less than 0.7.

In process, it was decided that testing would be informal, and results from the initial session would not be scientifically rated to determine the measure of agreement. Two of the primary investigators were present in this exercise, which became an open discussion of the potential merits, flaws and application of the tool.

Each videotaped segment featuring patient responses was viewed in silence and assigned a level by each clinician. The group then shared findings, rationale and presented difficulties experienced in interpreting the tool or assigning ratings. Such discourse was deemed valuable and the most useful strategy at this stage in the tool's development. From the results of this comprehensive exercise, changes were made to the instrument, and further questions were raised for consideration.

Discussion and Implications

The Levels of Responsiveness in Music Therapy tool continues to be a work in progress. Many questions must be addressed as the investigators continue to refine the work into an instrument that will be useful in research, assessment and evaluation of music therapy. Some examples follow:

How does one define creativity?

Is it a creative act for a patient to mirror a note at the octave? How can one distinguish between a creative response and one that is socialized or learned? (e.g.

The patient begins to dance when he hears a waltz.) To what degree is creativity linked to cognition?

What is a prompt?

Defining prompt became important in interpreting the patient's initiation in a task. Raters found it difficult to agree whether a patient had been prompted, as prompts can be verbal, gestural or musical.

How is the tool applied?

On occasion, patients demonstrated a set of responses that seemed to fall under more than one level. Should patients be rated at the level where they most often perform, or at the level representing his/her highest level of responsiveness?

'Ah-ha' Moments

There are certain moments in music therapy when patients seem to transcend disability and/or exceed their usual level of response, awareness, connection or expressive ability. These high level responses are easily identified in specific cases, but not easily described as a group. Although these moments could not be recognized or rated by objective viewers, it was felt they still required representation in the tool. Knowledge of the patient's history/ personal norm is a necessary starting block from which to measure significant change, and therefore, the more subjective Level VII-Transcendent Response, was included in the tool for clinical use only.