

## Therapeutic Function of Music Plan Worksheet

**Problem Statement:** The client appears to have a strong desire to interact socially with those around him. He both engages and initiates in interactions. However, while he engages successfully with others on a superficial level, asking and answering questions, he appears to have a greater difficulty in creating meaningful, reciprocal conversations. Many with Autism Spectrum Disorder realize their difficulties when interacting with peers but are unsure of the reason why their interactions are unsuccessful. This can lead to greater stress and anxiety about social situations and decrease self-esteem. The client has exhibited an affinity for music and during sessions displays little-to-no anxiety, despite his mother describing the high levels he experiences throughout the day. Music therapy would be beneficial in that it provides an engaging, non-threatening atmosphere to practice these social skills. Through directed interventions the client would be able to practice the skills necessary for reciprocal communication. It is believed that a mastery of this skill would lead to more fulfilling social interactions and decrease the client's overall level of anxiety.

**Primary Goal:** Improve reciprocal communication

<b>Musical Element:</b>	<b>Theoretical Framework:</b>	<b>Purpose of musical element:</b>	<b>Explicit description of the musical element:</b>
Form: structure or plan of a musical piece	Those diagnosed with ASD perform equally with peers on explicit tasks (structured, have time to think) but performed significantly worse on implicit tasks (spontaneous), (DePape, Hall, Tillman, & Trainor, 2012).	Those with ASD perform significantly better when structure is provided	Form will be arranged in an AAA or ABA structure.
Lyrics: text of a piece	Lyrics are a means of stimulating comprehension, speech, and imagination (Boxhill, 2007). The increased ability to think abstractly allows adolescents to interpret lyrics (McFerran, 2010). Lyrics and melody are processed separately in the brain (Besson, Faita, Peretz, Bonnel, & Requin, 1998). A face singing lyrics combined with auditory improves word recognition in comparison to auditory alone (Hidalgo-Barnes, & Massaro, 2007)	Lyrics can provide prompts and instructions, model behavior, and convey ideas or stories.  Lyrics provide an opportunity for abstract thinking.  Lyrics are easier to understand when client can see them being sung.	Instructions will be embedded in lyrics when deemed appropriate.  Lyrics will be chosen that are age and topic appropriate.  Client can use lyrics as a form of self-expression.  SMT will face client.
Melody: horizontal arrangement of tones in relation to one another	Singing (more than speaking) engages a bilateral reciprocal network between frontal and temporal regions, which contain some components mirror neuron system (MNS). It has been proposed that a dysfunctional MNS underlies some of the language deficits in autism (Wan & Schlaug, 2010). Melody provides structure to organize, sequence, and remember verbal information (Cross, Hamilton, & Kennelly, 2001). Melodies that follow a predictable pattern, such as moving in half or whole steps, prevent over-arousal (Moore, 2013). There is little difference in the way we perceive pitches in speaking and pitches in melody (Perrachione & et al., 2013)	Melody that follows the contour of spoken word aids in language development.  Melody that follows a predictable pattern, moving in half or whole steps increases participation, reduces frustration, and aids in the processing of verbal information.	Melody will follow the contour of spoken word.  Melody will follow a predictable pattern, moving in half or whole steps.

<p><b>Pitch:</b> relative highness or lowness of sound</p>	<p>Absolute pitch processing is more prevalent in those with ASD and may hinder prosodic perception (DePape, Hill, Tillman &amp; Trainor, 2012). Those diagnosed with ASD have less difficulty with musical pitch processing than speech processing (DePape, Hill, Tillman, &amp; Trainor, 2012). Pitch when raised can increase stimulation and when lowered can decrease stimulation (Boxhill, 2007). Pitch can emulate the intonation of the spoken work and activates the areas of the brain responsible for speech and music (Hough, 2010). The general comfortable range for a young male is E above middle-C to A one octave below middle-C.</p>	<p>Abrupt changes in pitch increases stimulation.</p> <p>Pitches that emulate the intonation of spoken word aids in language development.</p> <p>Singing in a comfortable range increases participation and reduces frustration.</p>	<p>Pitch range should be within a range of an octave without any abrupt changes.</p> <p>Pitches should emphasize the intonation of spoken word.</p> <p>Music will be sung around a center of A-C.</p>
<p><b>Harmony:</b> simultaneous sounding of tones known as chords</p>	<p>Provides structure and a foundation through predictable, consonant chord progressions providing regularity that humans desire (Moore, 2013). Music with unexpected changes of tonal center is experienced more negatively than music remaining in one key (Perani et. al, 2010). Music in a minor key increases arousal (Moore, 2013). Dense harmonic structures can interfere with the process of language (Maidhof &amp; Koelsch, 2011).</p>	<p>Predictable harmony with expected changes and remaining in one key provides structure.</p> <p>Minor keys increases arousal.</p> <p>During complex instructions, dense harmony can be over-stimulating</p>	<p>Harmony will follow predictable chord patterns such as I-IV-V-I.</p> <p>Harmony will be in a major key unless increased stimulation is desired.</p> <p>Harmony will not be present when complex instructions are given.</p>
<p><b>Rhythm:</b> timing of musical sounds and tones</p>	<p>Syncopated rhythms are perceived as more difficult than straight rhythms (Janata, Tomic, &amp; Haberman, 2012). Rhythm can have a stabilizing effect both physically and emotionally by providing structure and predictability that humans desire (Boxhill, 2007). Musical rhythms can emulate rhythms of the spoken word and activates areas in the brain responsible for speech and music (Hough, 2010).</p>	<p>Syncopated rhythms increase stimulation.</p> <p>Steady straight rhythms provide structure and predictability. Those with ASD flourish within the confines of structure.</p> <p>Musical rhythms that mimic the rhythm of spoken language emphasize language development.</p>	<p>Rhythm should be straight unless increasing stimulation is desired.</p> <p>Musical rhythms should emphasize the rhythm of spoken language.</p>
<p><b>Timbre:</b> characteristics and qualities of sound</p>	<p>Those diagnosed with ASD have greater difficulty discriminating and ignoring outside sounds than their typically developing peers (DePape, Hill, Tillman, &amp; Trainor, 2012).</p>	<p>Overly complex music combined with directions may prove to be over stimulating</p>	<p>When implementing directions, music should be musically simple</p>
<p><b>Style:</b> genre of music</p>	<p>Music that in considered happy, or pleasant, maintains levels of arousal (Moore, 2013). Those diagnosed with ASD identify emotions with music equally well as typically developing peers (Wan &amp; Schlaug, 2010). Preferred genre of music becomes an integral part of the emerging identification of self for adolescents (McFerran, 2010).</p>	<p>Preferred genre increases participation and provides a sense of identification of self.</p> <p>Music that is considered happy or pleasant to listen to increases participation.</p>	<p>Music selected will be client preferred when possible and happy or pleasant to listen to.</p>

Tempo: rate of speed of music	The human heart beats around 60-80 bpm at the resting and regulated state. Tempo and music can be used to change/regulate arousal states of the autonomic nervous system (Ellis & Thayer, 2010). Abrupt changes in tempo increase unpredictability (Moore, 2013).	Tempo of 60-80 bpm can aid in relaxation.  Increasing tempo rapidly can increase stimulation.	When addressing relaxation tempo will be steady and 60-80 bpm.  Tempo throughout the application will remain steady unless an increase in stimulation is desired.
Dynamics: the degree of variation and contrast in volume	Rapid changes in dynamics create unpredictability and tend to increase arousal while no change in dynamics decreases arousal (Moore, 2013).	Rapid changes in dynamics detract from structure.  Rapid changes in dynamics increase stimulation, while stagnant dynamics decreases stimulation.	Dynamics will moderately change to maintain participation and remain within the range of <i>mp-mf</i> .
Meter: perceptual extraction of an underlying pulse that can be broken down into different hierarchical beat patterns	Those diagnosed with ASD display less specialization for processing rhythms with simple meters common in Western music compared to complex meters than the typically developing peers (DePape, Hall, Tillman, & Trainor, 2012).	Those diagnosed display less of an affinity for simple meters in comparison to complex meter but still display an affinity.	Meter will primarily be simple but can be complex.
Volume: overall perceived softness or loudness	Prolonged periods of high volume can increase stimulation while periods of low volume can aid in relaxation (Boxhill 2007). Continued noise can hamper learning abilities (Bradlow, 2003).	High volume can lead to over-stimulation and decreases participation.  Outside noise can reduce performance	Volume will be moderate unless aiding in relaxation then it will be low.  Outside noises will be controlled for when possible.

**Theory-based Synthesis of the Music:** When working on social skills one of the most important elements of music is lyrics. Lyrics chosen should be age and topic appropriate. Instructions can be embedded in lyrics and client will be presented with opportunities to express himself through the lyrics. Tempo, rhythm, form and harmony all aid in creating a structured environment for the client by providing predictability. Music selected should have a simple, singable, melodic line that moves primarily in half and whole steps, a moderate volume, *mp-mf* with moderate dynamic changes within this range, a moderate tempo, be considered pleasant to listen to and be client preferred. These aid in increasing client participation. Rhythm, pitch, and melody can all be used to model and reinforce the rhythm and intonation of speech. When implementing these elements, they should model the spoken language. Increased complexity of timbre increases arousal but decreases the ability of the client to process and follow directions. When employing complex directions, the music should be kept simple and SMT's face should be visible. A slower steady tempo of 60-80 bpm with a lower volume aids and supports relaxation.

## References

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