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Common Characteristics of Improvisational Approaches in Music Therapy for Children with Autism Spectrum Disorder: Developing Treatment Guidelines

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Background: *Improvisational methods of music therapy have been increasingly applied in the treatment of individuals with autism spectrum disorder (ASD) over the past decades in many countries worldwide.*
Objective: *This study aimed at developing treatment guidelines based on the most important common characteristics of improvisational music therapy (IMT) with children affected by ASD as applied across various countries and theoretical backgrounds.*
Methods: *After initial development of treatment principle items, a survey among music therapy professionals in 10 countries and focus group workshops with experienced clinicians in three countries were conducted to evaluate the items and formulate revised treatment guidelines. To check usability, a treatment fidelity assessment tool was subsequently used to rate therapy excerpts.*
Results: *Survey findings and feedback from the focus groups corroborated most of the initial principles for IMT in the context of children with ASD. Unique and essential principles include facilitating musical and emotional attunement, musically scaffolding the flow of interaction, and tapping into the shared history of musical interaction between child and therapist. Raters successfully used the tool to evaluate treatment adherence and competence.*
Conclusions: *Summarizing an international consensus about core principles of improvisational approaches in music therapy for children with ASD, these treatment guidelines may be applied in diverse theoretical models of music therapy. They can be used to assess treatment fidelity, and may be applied to facilitate future research, clinical practice, and training.*

Keywords: *improvisation; music therapy; treatment guidelines; autism spectrum disorder*

Background

Introduction

Autism spectrum disorder (ASD) comprises a group of conditions in which impairments in communication and social interaction are core features of the diagnosis (cf. American Psychiatric Association, 2013; World Health Organization, 1993). Important areas of difficulty within communication and social interaction, and therefore targeted areas of interventions for individuals with ASD, include imitation (e.g., Hobson & Hobson, 2008; Landa, 2007), joint attention (Leekam, López, & Moore, 2000), reciprocity

(Landa, 2007), affective sharing (Wetherby et al., 2004), and initiation of interaction (Landa, 2007; Landa, Holman, & Garrett-Mayer, 2007).

Developmental interventions in ASD may be defined as a group of relationship-based approaches that are guided by typical child development and target underlying functions of social-emotional interactions rather than specific behaviors (cf. Casenhiser, Shanker, & Stieben, 2013; Ingersoll, Dvortcsak, Whalen, & Sikora, 2005; Mahoney & Perales, 2003). Also defined as social-pragmatic (Prizant & Wetherby, 1998), these interventions share characteristics such as following the child's lead, encouraging initiations from the child, responding to all types of communicative behavior as if it was purposeful, focusing on emotional expression, and adjusting any language and social input to the child's developmental stage and attentional focus (Ingersoll et al., 2005).

The collective term "improvisational music therapy" (IMT) is used for music therapy methods that employ improvising as a primary therapeutic experience (Bruscia, 1987, p. 5), where the client and therapist spontaneously create music using singing, playing, and movement (Bruscia, 2014). IMT is described as a procedure of intervention that makes use of the potential for social engagement and expression of emotions occurring through improvisational music making (Geretsegger, Holck, & Gold, 2012). As a developmental intervention for children with ASD, IMT can be contextualized in various frameworks (e.g., music-centered, psychodynamic, etc.), and may be depicted as a child-centered approach where a trained music therapist uses active, spontaneous music making and the relationship that develops through this. The therapist generally follows the child's focus of attention, behaviors, and interests to facilitate growth in the child's social communicative skills and promote development in other areas of need, such as awareness and attention, sense of self, or self-efficacy (Bruscia, 1998; Kim, 2006; Kim, Wigram, & Gold, 2008, 2009; Wigram, 2002).

When working with children with ASD, there are specific circumstances that need to be addressed in addition to the core areas of communication and social interaction. Children with ASD often perceive their environment as chaotic and confusing, and therefore require routines and predictability of interactions and surroundings (Schuler, Prizant, & Wetherby, 1997). In balancing between this need and the tendency to "get lost" in repetitive behaviors,

improvised music can be made to be very predictable, containing repetitions at different levels while at the same time providing "controlled" flexibility in the form of variations in melody, harmony, rhythm, phrasing, or dynamics (Wigram, 2004; Wigram & Elefant, 2009), as for example through commonly developed "interaction themes" (Holck, 2004a).

Involving parents/caregivers in the process can support both children and parents in building interactions with one another, and facilitates generalization of therapy outcomes into the child's and caregivers' everyday life (Oldfield, 2006; Warwick, 1995). Some music therapists do this by including family members directly in therapy sessions (Thompson, McFerran, & Gold, 2013), whereas others meet with parents separately.

History

The diagnosis of autism and the music therapy profession emerged during the same time period (Gold, 2011; Reschke-Hernández, 2011). Documentation of music therapy as an applied intervention in autism in the early years (mid-1940s to early 1960s) is rare. The earliest reported examples used mostly structured techniques (e.g., vocal or dance exercises and rhythmic and singing activities); more child-centered approaches (e.g., responding musically to the child's utterances) began to appear in the literature in the late 1960s and 1970s (Reschke-Hernández, 2011). This change of techniques and approaches also implied a turn from more general intervention goals such as self-expression, rehabilitation, and recreation toward goals specifically related to areas at the core of ASD, such as fostering communication and interaction.

Some of the earliest formative influences in IMT were introduced by Paul Nordoff and Clive Robbins (1968, 2007), Mary Priestley (1975), Juliette Alvin (1978), and Kenneth Bruscia (1987). Since then, improvisational techniques employed in the assessment and treatment of individuals with ASD have been described by additional authors (Aigen, 2005; Carpente, 2011; Edgerton, 1994; Holck, 2004a; Kim et al., 2008, 2009; Oldfield, 2006; Schumacher & Calvet-Kruppa, 1999; Wigram & Gold, 2006; Wigram & Elefant, 2009). All of these authors describe processes of musical attunement to the child's behavior to facilitate interpersonal communication and social interaction. While also contributing to the knowledge about processes and effects of music therapy in general, these

authors specifically focused on the relevance and specific advantages of improvisation for children's social and communicative skills, as well as on its use in the assessment of these skills.

Evidence of Effectiveness

Several systematic reviews and meta-analyses have indicated the positive effects of music therapy on developmental outcomes central to the needs of individuals with ASD, such as nonverbal and verbal communicative skills, social interaction, and play (Geretsegger, Elefant, Mössler, & Gold, 2014; Rossignol, 2009; Wheeler, Williams, Seida, & Ospina, 2008; Whipple, 2012). Effects of IMT were investigated systematically for the first time in 1994, when Edgerton presented evidence from a study involving 11 children aged six to nine that suggested IMT's effectiveness in increasing the communicative behavior of children with ASD. Since then, three randomized controlled trials (RCTs) conducted in various parts of the world (Australia, Brazil, Korea) have indicated IMT's effectiveness for nonverbal communication skills (Gattino, Riesgo, Longo, Leite, & Faccini, 2011; Kim et al., 2008), joint attention (Kim et al., 2008), affective sharing and initiating behavior (Kim et al., 2009), social interactions (Kim, 2006; Kim et al., 2008), and the parent-child relationship (Thompson et al., 2013).

Need for Consensus Definition

Developing and applying treatment guidelines that are both scientifically sound and clinically useful not only serves the purpose of ensuring the replicability of research studies, but may also help ensure a method's comprehensibility, transparency, and training (Hillecke & Wilker, 2009). However, trying to standardize and manualize a highly individualized approach like IMT might appear paradoxical at first. One might ask whether it is reasonable and feasible to generalize pathways of intervention in a field with such a diverse clinical presentation and for a method based on emerging interactions as the treatment proceeds. Can the need for standardized guidelines be met without weakening the integrity of the approach? Accordino, Comer, and Heller (2007) argued that although IMT is tailored according to responses of individuals, it can be replicated across a number of participants, even in a highly individualized way, "without diminishing the individual nature of the therapy" (p. 107). Similarly, Rolvsjord, Gold, and Stige (2005) have suggested that the demands for research rigor

and therapeutic flexibility can be reconciled by retaining openness to emerging procedures as an essential part of a therapy manual.

Objectives

This study aimed to (1) identify the common characteristics of improvisational approaches in music therapy when working with children with ASD, based on targeted areas of development and core guiding principles; (2) if possible, describe an international consensus model in a way that balances sufficient standardization with sufficient flexibility to accommodate individual client needs and varying therapy contexts or settings; and (3) create treatment guidelines based on these principles, and evaluate their feasibility as a tool to assess adherence and competence in IMT.

Methods

Identification of Relevant Items

Based on existing IMT literature for children with ASD (Aigen, 2005; Carpente, 2011; Edgerton, 1994; Gattino et al., 2011; Holck, 2004a, 2004b; Kim, 2006; Kim et al., 2008, 2009; Nordoff & Robbins, 1968, 2007; Oldfield, 2001; Schumacher & Calvet-Kruppa, 1999; Stephens, 2008; Thompson et al., 2013; Wigram & Elefant, 2009; Wigram & Gold, 2006), core features, principles, and techniques of improvisational approaches of music therapy were identified, collated, and related to target areas typically addressed in working with children with ASD.

Initial Development

In order to facilitate a synoptic view, pivotal characteristics common to improvisational approaches in music therapy, as described in various authors' works, were systemized. From the items initially identified, we developed treatment guidelines to be followed by trained music therapists building upon research evidence (Gattino et al., 2011; Kim, 2006; Kim et al., 2008, 2009; Thompson et al., 2013; Wigram & Gold, 2006), the authors' clinical experience, as well as other treatment guides developed for previous interventional RCTs for children with ASD (Aldred et al., 2010; Kasari, Freeman, & Paparella, 2006; Kim, 2006). A draft version was formulated by four of the authors (first, second, third, and last author). Subsequent steps included further refinement and developing a consensus version among all authors.

Survey

In order to ensure validity of the treatment guidelines and compatibility of the proposed model with improvisational procedures of music therapy as practiced internationally within various approaches, we collected feedback from a larger group of experts and sought to determine whether there was a consensus. It was important for us to have a broad range of music therapy backgrounds represented in this group, in terms of both cultural context and theoretical orientation, including developmental and psychodynamic backgrounds, Nordoff-Robbins music therapy, humanistic, and eclectic approaches. Therefore, music therapy clinicians and researchers from 10 different countries (Australia, Brazil, Denmark, Germany, Israel, Italy, Norway, Korea, United Kingdom, and United States) experienced in employing improvisational techniques in the treatment of children with ASD were requested to act as an expert group to validate the treatment guidelines. Music therapists were identified using the network of collaborators involved in an ongoing effectiveness study in this field (TIME-A; Geretsegger et al., 2012): Site managers of participating countries (Australia, Brazil, Israel, Italy, Norway, Korea, United Kingdom, and United States) were requested to nominate eligible colleagues and to provide contact details when available. In addition, contact persons related to this study in Denmark and Germany were contacted with the same request. In the survey that was conducted via e-mail from May to July 2013, 42 recipients were asked to read the treatment guidelines draft and to indicate for each proposed principle of IMT whether they understood it (no/somewhat/yes), whether they agreed or disagreed with it, and how important they considered the proposed principle (not important/somewhat important/very important). The principles were categorized into four groups: (1) unique and essential; (2) essential but not unique; (3) compatible; and (4) proscribed (cf. Waltz, Addis, Koerner, & Jacobson, 1993). In addition, respondents were encouraged to propose amendments and to suggest any key components that in their opinion had been missing from the proposed principles.

Focus Groups

We conducted focus group workshops in three countries (Austria, Italy, Korea) to further evaluate the treatment guide draft

using clinical case materials. Participants were recruited in a similar way as for the survey described above. The focus groups were led by music therapy researchers and consisted of three to four music therapy clinicians experienced in the field of ASD (total $n = 11$). Verbal accounts and video excerpts from clinical practice were set in relation to principles from the treatment guidelines, and any suggestions for amendments and additional topics were discussed and forwarded to the authors.

Revision of Items Based on Survey and Focus Group Results

The responses and comments gathered from the survey and focus groups were incorporated into the final version of the treatment guidelines by following three steps: (1) extracting and collating topics raised by respondents (first author); (2) developing suggestions for which topics should be integrated and how (first author); (3) discussing suggestions and reaching agreement (all coauthors).

Development of a Tool to Assess Treatment Fidelity

Finally, we attempted to quantify adherence to the treatment guidelines and evaluate the feasibility of this newly developed tool (see Table 1). Items derived from the IMT principles were coded on a six-point scale (cf. Casenhiser et al., 2013): 0 = no evidence of interactions appropriate to IMT; 1 = interactions appropriate to IMT are rarely observed; 2 = interactions appropriate to IMT are sometimes observed; 3 = interactions appropriate to IMT are frequently observed; 4 = full competence: most observed interactions are appropriate to IMT; and 5 = mastery: all observed interactions are appropriate to IMT. We prepared 16 three-minute videotaped sequences from IMT sessions to be rated by first-year undergraduate music therapy students, nine three-minute sequences to be rated by master's-level students, and 10 three-minute sequences to be rated by certified music therapists with several years of music therapy experience within ASD. Raters did not receive any further contextual information on diagnosis or therapy process, and every sequence was assessed by two independent raters.

Ethical Approval

Ethical approval for the protocol of the overall trial TIME-A that this study is connected to was provided by the Faculty of

Table 1

Tool to Assess Treatment Fidelity in IMT for Children with ASD

UNIQUE AND ESSENTIAL PRINCIPLES:	Rating (0–5):
1. ***Musical and emotional attunement:*** How well does the therapist use his/her behavior and expression (e.g., through music, voice, arousal level, movement, facial expression) to allow for moments of synchronization and attunement?	
2. ***Scaffolding interaction musically:*** How well does the therapist support the flow of interaction by using musical means and verbal, visual, or physical cues?	
3. ***Tapping into shared musical history:*** How well does the therapist use jointly developed forms of musical interaction to foster social communication and encourage initiations from the child?	
ESSENTIAL PRINCIPLES:	**Rating (0–5):**
4. ***Positive therapeutic relationship:*** How well is the therapist able to provide a supportive atmosphere for the development of a positive therapeutic relationship?	
5. ***Secure environment:*** Does the therapist exert strategies to convey security, reliability, and predictability?	
6. ***Following the child's lead:*** How well does the therapist join the child's focus of attention and interests rather than directing the child to the adult's focus of attention?	
7. ***Treatment goals:*** Does the therapist tailor his/her interventions to the child's developmental stages?	
8. ***Enjoyment of interaction:*** How well does the therapist support the child in experiencing enjoyment within the interaction (e.g., using affect in tone of voice, facial expressions, musical actions, gestures)?	
COMPATIBLE PRINCIPLE:	
The "compatible" principle of ***setting adjustments*** is not included in the fidelity assessment tool, as it is not considered as essential to the improvisational music therapy approach by definition. Please describe how the setting was adjusted:	

Note. Ratings represent a combination of adherence (0–3) and competence (4–5). Response categories are: 0 = none; 1 = rarely; 2 = sometimes; 3 = frequently; 4 = full competence; 5 = mastery. See the main text for full descriptions and examples of each principle.

Humanities' Research Ethics Board at Aalborg University (HREB #201107). For the survey and focus groups included in this study, the Research Ethics Committee of the North Denmark Region stated that no additional ethical approval was required.

Results

Initial Version

In an effort to summarize and systematize key characteristics of IMT to be used in the clinical practice of treating children with ASD, the initial version of the treatment guidelines was developed to contain information about the setting, musical media, and general goals of the approach, as well as basic principles representing criteria that need to be present in order to fulfill our definition of IMT for children with ASD. The initial version of the treatment guidelines comprised:

- four unique and essential principles: facilitate musical and emotional attunement; scaffold interactions dynamically; tap into shared history of musical interaction; facilitate enjoyment;
- four essential principles: provide a secure environment; build and maintain a positive therapeutic relationship; follow the child's lead; set treatment goals;
- one compatible principle: adjust setting according to families' needs, clinical judgment, and practical possibilities; and
- one proscribed principle: adhere to predetermined treatment schedule.

Tabularized descriptions and explanations of basic principles included the purpose/rationale for each principle within IMT for children with ASD, the therapist's attitude related to that principle, categories of activities that may be associated with the respective principle, and some examples/techniques of how each principle may be operationalized within therapy. Overlaps were possible—for example, one activity could be based on more than one principle, or several principles could share the same rationale. Table 2 shows an example of how the basic principles were described in the initial version of the treatment guidelines—here, the first unique and essential principle: facilitate musical and emotional attunement.

Table 2

Example of Delineation of Basic IMT Principles from Initial Version of the Treatment Guidelines for Children with ASD

Principle	FACILITATE MUSICAL & EMOTIONAL ATTUNEMENT
Purpose/Rationale	Increase opportunities for awareness of self, shared attention, social reciprocity, and relationship building
Attitude	Follow the child's focus of attention, behaviors, and interests; meet the child where s/he is musically and/or emotionally
Category of Activities	Create moments of musical attunement/synchronicity that may develop into emotional attunement/emotional sharing; incorporate the child's interests and skills
Example/Technique	Respond to the child's utterances and behavior using improvised music (e.g., by holding, mirroring, matching techniques)

The full initial version of the treatment guidelines can be obtained from the first author.

Survey Results and Feedback from Focus Group Workshops

We received feedback from 30 music therapists (response rate 71%) from all 10 countries. The expert group consulted in the survey generally understood the items and their descriptions well, agreed with most items and descriptions, and considered most items as "very important" to IMT for children with ASD. All 30 respondents confirmed that they understood the items "facilitate enjoyment," "provide a secure environment," "build and maintain a positive therapeutic relationship," and "follow the child's lead." Ratings for understanding of the other items ranged from 81 to 96%. Agreement ratings ranged from 85 to 96%, except for the "proscribed" principle, "adhere to predetermined treatment schedule" (59%). Regarding the question of how important respondents found the respective items for the approach, ratings of "very important" ranged from 81 to 100% for all of the "essential" and "essential and unique" principles (100% for "facilitate musical and emotional attunement"). The "compatible" and "proscribed" principles were endorsed as "very important" somewhat less often

(by 79 and 74% of the respondents, respectively). Feedback from focus group members was generally supportive of the selection and description of the treatment guidelines' principles.

The main points of critique, suggested changes, and suggestions for additional principles by survey respondents and focus group members are summarized below. Issues that some of the experts felt were missing included:

- a reference to managing challenging/disruptive/destructive/harmful behavior;
- references to the importance of affect regulation, body awareness, and the integration of sensory perceptions by creating connections between different perceptual channels;
- specific references to other emotions apart from enjoyment;
- the importance of finding a balance between "following the child" and "initiating";
- music as a means of self-expression and emotional release; and
- a reference to different phases of therapy (i.e., beginning of treatment vs. later development).

Five survey respondents suggested that the principle "facilitate enjoyment" be moved from the "unique and essential" to the "essential" category, as it also applies to many other relationship-based approaches. Some respondents found that the "proscribed" principle was too harshly formulated and/or confusing, as it was phrased inversely to the other nine principles (i.e., delineating activities, a therapeutic attitude, and purpose that are considered contradictory to IMT). In response to this feedback, we adapted the treatment guidelines as follows:

- managing challenging/disruptive/destructive/harmful behavior: was incorporated within "facilitate musical and emotional attunement";
- affect dysregulation, body awareness, integration of sensory perceptions and emotions apart from enjoyment: were incorporated within "facilitate musical and emotional attunement";
- balance between "child-led" and directing/structuring: was incorporated within "follow the child's lead";
- music as a means of self-expression and emotional release: was incorporated within "facilitate musical and emotional attunement"; and

– differentiate between beginning of therapy and sessions later on: was incorporated within "provide secure environment" and "set treatment goals" (by adding "and evaluate progress" to the principle's title).

The item "facilitate enjoyment" was moved from the "unique" to the "essential" category of principles because it is shared by other relationship-based approaches. Since the "proscribed" principle led to more confusion than clarity, we decided to incorporate the underlying contents of this principle within several other items. Additionally, we rephrased the item "scaffold interactions dynamically" into "scaffold the flow of interaction musically," in order to clarify the primary mode of interaction. Furthermore, we added using toys or media that are not primarily musical as another example within the "compatible" principle of adjusting the setting (cf. Gold, Wigram, & Voracek, 2007). Finally, we returned to the purely narrative form of principle description (as opposed to the additional, more complex tabularized display used for the survey) in order to facilitate comprehension.

The Final Treatment Guidelines

Figure 1 provides an overview of the essential, unique, and setting-related ("compatible") principles, respectively, defining the international consensus model of improvisational approaches in music therapy for children with ASD as described below. It is important to note that the order of the principles is not supposed to indicate a certain hierarchy; all items are considered equally important.

Unique and Essential Principles within IMT for Children with ASD

Facilitate Musical and Emotional Attunement. Similar to processes of interaction between caregiver and child in early infancy, attunement in musical features of interaction in the context of music therapy provides a framework for shared perceptions and social reciprocity. The music played or sung by the therapist is closely attuned to the child's immediate display of (musical or other) behavior, focus of attention, and/or emotional expression. In doing so, the therapist creates moments of musical attunement that may develop into affective and emotional attunement and

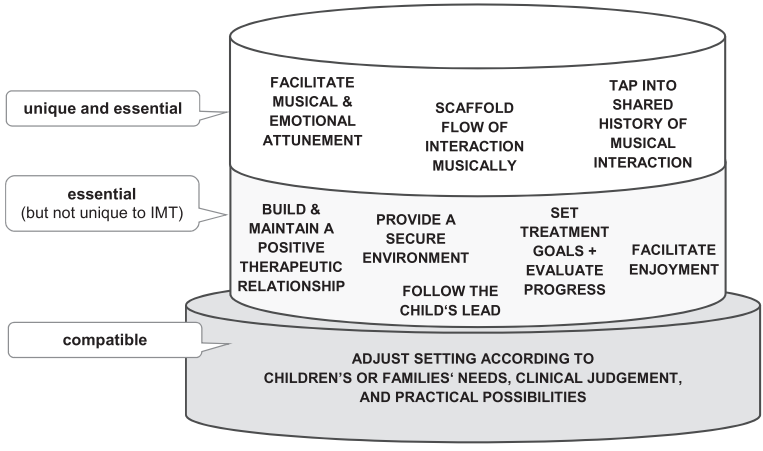

FIGURE 1.
Overview of principles in improvisational approaches of music therapy for children with ASD.

emotional sharing. This increases opportunities for the child to improve his/her awareness of self, to experience shared attention and social reciprocity, and to engage in communication; it also facilitates the process of relationship building between the child and the therapist, and encourages the child to utilize music as a means of emotional expression and emotional release.

In case of high levels of arousal and affective expression, including tantrums or disruptive behaviors, musical attunement and subsequent regulation might also serve to promote the child's ability of emotional self-regulation. The therapist is required to choose and adapt the intervention techniques to specifically fit the child's current abilities of social responsiveness. Improvisational techniques may involve imitation, mirroring, variation, elaboration, regulation, support, responding, or contextualization; in musical terms, this may involve matching, sustaining, or complementing "musical" features of the child's behavior (pulse, rhythmic pattern, dynamic or melodic contour, timbre), thus creating an integration of sensory perceptions, and moments of synchronization and "meeting."

Scaffold the Flow of Interaction Musically. The therapist meets the child's behavior and initiatives as having meaning and as being related to assumed intentions, even if the child's signals may be scarce, weak, or poorly timed. By meeting the child's behavior as communicatively intended, the therapist increases opportunities

and uses supportive techniques (e.g., complementing the child's utterances) for the child to comprehend, engage in, and initiate interaction. In order to encourage the child to participate in musical interactions, the therapist uses musical means (e.g., matching volume, timbre, or rhythm; forming the child's expressions into recognizable musical forms, patterns, or motifs), but also verbal, visual, or physical cues, such as anticipatory gestures or facial expressions. These various types of adaptive support lead to expectation on the part of those involved in the interplay, thus acting as a scaffold that supports the musical interaction and enables the child to actively engage in the interaction.

If the child displays signs of newly emerging communicative skills, the therapist gently reinforces them and expands on them in a playful and encouraging way; for example, if the child becomes aware of his/her own playing, the therapist may communicate that s/he is also aware of the child's playing by imitating, exaggerating, and augmenting the child's musical utterances. The therapist may also model or suggest activities or introduce new musical instruments to the child as necessary to involve the child or keep him/her engaged.

Whenever introducing new material, the therapist follows the child's focus of attention and range of interest and pays special attention to the child's own initiatives and ideas. IMT techniques for musically scaffolding interventions include rhythmic grounding by providing a rhythmic foundation for the child's musical behavior; shaping the music played, using for instance melodic contours or dynamic changes; extemporizing on musical motifs and themes; or frameworking, a way of using musical elements or styles to structure musical interactions.

Tap into the Shared History of Musical Interaction. In order to facilitate both a feeling of safety and predictability and the capacity for flexibility and coping with change, particular consideration is given to specific characteristics of the joint history of musical interaction developing over time between the therapist and the child. Within the shared context, a shared musical repertoire and interaction themes may develop; that is, musical or movement-based forms of interplay that arise from joint improvisation between the play partners. The therapist presents as a playful and reliable interaction partner who forms the child's expressions into recognizable musical forms, patterns, or motifs that can be repeated and varied

as needed to foster interaction. Thus, meaningful chains of interaction may emerge that allow for both partners to develop expectancies on musical, action-related, or intersubjective levels. If joint routines of actions have developed, using and elaborating them may lead to opportunities to assess the child's level of participation by making an unexpected musical action in a humorously teasing way (e.g., by unexpected pauses or dynamic variation), which in turn may enable the child to anticipate, actively participate in, or initiate interaction. IMT techniques that tap into the shared history of musical interaction between child and therapist include building up and drawing upon a joint repertoire of interaction themes, variation, and playing with musical expectations.

Essential (But Not Unique) Principles within IMT for Children with ASD

Build and Maintain a Positive Therapeutic Relationship. The therapeutic relationship acts as a key component of developmental interventions, including IMT. Purposes of building and maintaining a positive therapeutic relationship are to motivate the child to attend therapy and to enable rapport in order to facilitate positive outcomes of therapy. Within IMT, the therapeutic relationship is the sphere within which musical, emotional, and intersubjective experiences may be shared, developed, and built upon. The general attitude of the therapist is to present with interest, respect, and confidence. Therapists create a supportive atmosphere with the intent of helping the child feel welcome and valued. They also endeavor to understand the communicative significance of their own behaviors as well as those of the child within the context of the therapeutic relationship.

Provide a Secure Environment. As with any other intervention offered to children with ASD, it is important to conduct IMT within a safe environment that keeps the child's anxiety low and helps the child experience a feeling of security. Strategies to convey reliability and predictability are, for instance, providing consistency in therapy settings (e.g., maintaining the same therapy room and equipment), responding to the child's behavior in consistent ways, using the structure of music to convey safeness, explaining the purpose and scheduling of therapy sessions, commenting on interruptions, explaining unexpected events, and preparing the child for

endings or any breaks within the therapy process, for instance by using good-bye songs or musical rituals to help the child in managing transitions. Some of these strategies may be needed more at the beginning of therapy than in later stages, when a feeling of security and trust has been established.

Follow the Child's Lead. The general approach is to follow the child's focus of attention, behaviors, and interests, and to incorporate these interests and motivations into meaningful sequences of interaction. In IMT, this is done by meeting the child's individually manifest musical and emotional expression. This facilitates the child's intrinsic motivation to engage in social exchange and also keeps any anxiety on the part of the child at a low level. To that effect, the therapist balances the type of therapeutic techniques so the child feels safe and reassured, and at the same time has ample opportunities to engage in, respond to, and initiate social interaction and communication.

It is important to note that following the child's lead does not prevent the therapist from playfully challenging the child at times, for example by altering the music to evoke a response. In doing so, the therapist provides appropriate opportunities for the child to respond in different ways, and to make the interaction reciprocal. Furthermore, the therapist structures the session according to his/her own clinical judgment and the child's needs. At times, some structure might be deemed necessary to prevent the child from feeling insecure or lost in aimlessness, while in other situations, presenting the child with too many structured activities might restrain their own initiatives. At the same time, it is of key importance that the therapist pay close attention to adapting his/her communicative actions to the child's current level of interactional competence. Examples include relating to a child's preference for numbers in making up a "number song"; allowing the child to control certain aspects of the interaction; or offering various types of choices.

Set Treatment Goals and Evaluate Progress. It is important to assess specific competences and needs of each child initially and throughout the course of therapy in order to meet their individual needs. By choosing individualized developmental goals for each phase of the intervention, the therapist guides the therapy process, enables the child to gradually expand his/her abilities in targeted

areas of development, and is also able to evaluate progress and outcomes of therapy.

By assessing the child's competences, emerging abilities, and needs, individual goals can be derived and related intervention strategies and techniques can be tailored to the need assessed in a specific area. These goals are set with the child's caregivers/family in mind and discussed when appropriate. For example, a child is aware of his/her own and the therapist's (musical) actions; therefore, the ability to participate in reciprocal interaction is defined as one of the individual treatment goals for that child.

Facilitate Enjoyment. Incorporating the child's interests and meeting his/her preferences and initiatives with an attitude of positive affect, acceptance, and affection facilitates opportunities for mutual joy; this in turn enables the child to experience affect sharing as well as to experience interactions as pleasurable, rewarding, and intrinsically motivating. Strategies useful in facilitating enjoyment include incorporating the child's interests and creating a pleasant and playful atmosphere within therapy sessions that allows for shared positive affect in musical interaction; for example, developing a playful musical game involving hands and feet based on a child's sensory interests.

Compatible Principle within IMT for Children with ASD

Adjust the Setting According to Children's or Families' Needs, Clinical Judgment, and Practical Possibilities. In order to facilitate the generalization of skills to everyday settings, and to support families in building and maintaining safe relationships and reciprocal interaction between the child receiving IMT, family members, and/or caregivers, it is a useful strategy to adjust the therapy setting according to children's and families' needs, clinical judgment, and practical possibilities. This may include the implementation of caregiver-/parent-/family-member-mediated intervention strategies (e.g., how to employ musical experiences in everyday interactions with the child), or the participation of parents or other family members in IMT sessions in the therapy room or at the family's home. Another example of adjusting the setting according to clinical judgment is using toys or media that are not primarily musical (e.g., role play, puppet play, movement, ball games, dancing, free play, games, and other creative media).

Usability of the Treatment Guide and the Tool to Assess Treatment Fidelity

First-year students, master's students, and qualified music therapists experienced in ASD were able to use the tool for rating video sequences of IMT. All response categories (i.e., codings from 0 to 5) were used, with mean ratings of items ranging between 3 and 4 (indicating the therapist's sufficient adherence to IMT). Items 3 and 7 ("tap into shared musical history" and "set treatment goals") were more difficult to assess because they might require knowledge of contextual events outside the observed sequence. This resulted in some missing data for these items (11 and 19%, respectively). The tool's internal consistency, measured by Cronbach's alpha for each of two raters, was at 0.95 and 0.96, respectively. Overall, these results supported the feasibility of the tool.

Discussion

Findings and Study Limitations

Our study indicates that there is an international consensus on pivotal characteristics of improvisational approaches in music therapy for children with ASD. It also shows that these can be operationalized in the form of treatment guidelines that reflect the clinical practice of trained music therapists. Pilot data on their usability for assessing treatment fidelity indicate that the developed tool is feasible to use within research, clinical practice, and training. It is important to note that what is being assessed through this tool is adherence to IMT as described in these treatment guidelines (including competence in IMT in the case of "4" or "5" codings), and not the competence as a (music) therapist in general.

As we were able to include only a limited number of survey addressees from a certain selection of countries within our study, findings are inevitably limited to the practices represented by those who responded; other practices of IMT as well as new emerging trends that are not yet covered within the treatment guidelines will possibly necessitate some adaptation and/or refinement of some aspects over time.

Implications for Practice

The delineation of the basic principles' purposes, rationales, therapeutic attitudes, and activities show that IMT does not use

specific techniques aimed solely at circumscribed areas, but may be seen as a comprehensive and complex approach addressing various dimensions of the core characteristics of ASD simultaneously. The treatment guidelines supply the field with a framework for this intervention approach for children with ASD, enabling therapists to develop and reflect upon their clinical practice, and music therapy educators and clinical supervisors to substantiate their teaching. By using the tool to assess treatment fidelity, it is also possible for therapists to rate sessions conducted by themselves; in that case, the items "tap into shared musical history" and "set treatment goals" might be easier to assess, with the disadvantage of the ratings possibly being more prone to bias. For other areas of (music therapy) intervention, the treatment guidelines might serve as a model to develop similar therapy guidelines and/or categories of basic principles as well as treatment fidelity measures.

Implications for Research

Treatment guidelines and fidelity measures are not often used within music therapy research as yet. The work presented in this article may therefore be considered the first step in introducing more standardization into a complex intervention approach for children with ASD in which flexibility and child-oriented implementation are of paramount importance. The consensus model presented here and its operationalization in the form of a framework of treatment guidelines may be useful for future research projects involving international collaborations. Currently, feasibility of the treatment guidelines is being further evaluated within a multi-site RCT investigating the effectiveness of IMT for children with ASD aged four to seven (Geretsegger et al., 2012). The consensus model might also be valuable for future directions in research, including the challenge of explaining mechanisms of change through IMT more precisely, and connecting different areas of research within the field of ASD.

Conclusions

The treatment guidelines presented in this article contribute to developing better care for children with ASD by providing guiding principles to be applied flexibly by trained music therapists of

various backgrounds according to the particular requirements and needs of the respective client. The outlined international consensus model also facilitates interdisciplinary and cross-disciplinary communication and collaboration by exemplifying how improvisational approaches in music therapy work to improve communication and social interaction abilities of children with ASD.

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