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A Case Study of Musical Improvisation in a Young Woman with Intensive Support Needs

Annet ten Brug [1*], Richard Lekkerkerk [2], Gineke Hanzen [1,3], Aly Waninge [2,4], Annette A. J. van der Putten [1]

[1] The Unit of Inclusive and Special Needs Education, Department of Pedagogical and Educational Sciences, Faculty of Behavioral and Social Sciences, University of Groningen, Groningen, The Netherlands
[2] Hanze University of Applied Sciences, Research Group Healthy Ageing, Allied Health Care and Nursing, Groningen, The Netherlands
[3] Royal Dutch Visio-de Brink, Vries, The Netherlands
[4] University Medical Center Groningen, Department of Health Psychology, Groningen, The Netherlands
* a.ten.brug@rug.nl

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Abstract

Improvisational music therapy may be valuable for persons with intensive support needs because of its possibilities to connect to preferences and abilities. This study aims to explore the form, use, and active elements of improvisational music therapy for a person with intensive support needs by describing the application of this therapy in detail. A case study was conducted in which an improvisational music therapy session was recorded with a young woman with intensive support needs. Two interviews were conducted with the music therapist (MT). The interviews were transcribed, coded, and thematically analyzed. The case was described based on four themes: behavior and interaction, the course and application of music therapy, the rationale behind the choices made, and the MT's reflection. Distinctive features of improvisational music therapy were the multiplicity of sounds, timbre, and the versatile use of the voice. Other features included its multi-sensory nature, repetition, adaptability, and focus on interaction. The music therapy followed a clear structure with fixed elements enhancing recognizability and familiarity, the improvisation facilitated continuous attunement to the person with intensive support needs. Besides distinctive elements of improvisational music therapy, other elements (e.g., repetition) are more frequently seen in interventions aimed at persons with similar support needs.

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Introduction

People with profound intellectual and multiple disabilities (PIMD) have a severe or profound intellectual disability as well as a severe or profound motor impairment (Nakken & Vlaskamp, 2007). In addition to intellectual and motor disabilities, sensory disabilities and health problems such as epilepsy and scoliosis have a high prevalence (Mol-Bakker et al., 2024; van Timmeren et al., 2016). Due to their combination of disabilities, people with PIMD need support 24/7. Given their high support needs and thus dependency on others, we choose to describe these individuals as persons with intensive support needs, instead of persons with PIMD (Schalock et al., 2021), and use words referring to disability only if the text would otherwise be incorrect or inaccurate. Due to their dependency on others, such as support professionals and relatives, the person's relationship with these others is highly important for their ability to have control over their own life, for learning and development, and for their overall quality of life (Nakken & Vlaskamp, 2007; Schalock et al., 2021).

Over the past decades, more and more interventions for people with intensive support needs have been developed. However, relatively few of these are theoretically underpinned and evidence-based (Munde & Zentel, 2020; van der Putten et al., 2015; Ware et al., 2024). For example, many interventions that are now used were originally designed for people with other support needs, e.g., people with dementia, and were gradually adapted (Maes et al., 2021; Vlaskamp & Nakken, 2008), or were developed in practice and have not been proven effective, or are not available in the Dutch context (van der Kreke et al., in writing). When interventions are available, they are often described, implemented, and studied as a "whole package," without any specification of the different elements within. We assume, however that specific elements of an intervention contribute to the intervention's effectiveness ("active elements") and that other elements, that are not or less effective, could be neglected, deleted, and/or adapted if this is desirable in the context. For this reason, it is important to gain more insight into the active elements of interventions such as repetition and the use of multiple senses, and the extent to which they can and do contribute to effectiveness.

The effectiveness of music therapy as an intervention has been proven for a broad range of people, including people with intellectual disabilities. Music therapy consists of the intentional use of music and musical elements to support emotional, cognitive, physical, and social well-being by a qualified music therapist. Studies show that for people with intellectual disabilities, music therapy can have a positive impact on their social, cognitive, physical, emotional, and psychological abilities (Hooper et al., 2008; Schwartz et al., 2017). Music therapy is also often used for people with more intensive support needs, such as persons with PIMD. Although research on music therapy (Boshuijzen et al., under review) for people with intensive support needs is limited, preliminary knowledge into musical interaction and music-based interventions is promising (Johnels et al., 2023; Rushton et al., 2023), with various outcomes. For example, music therapy for persons with PIMD could increase their communicative abilities, prevent isolation (Graham, 2004; McFerran & Shoemark, 2013), and increase their engagement and communicative behaviors (Rushton & Kossyvaki, 2020; Thompson & McFerran, 2015). In addition, it could provide a place for positive interaction and mutual enjoyment (Hooper, 2002; Johnson et al., 2012) and allow people with intensive support needs to participate in daily life activities (Hanzen et al., 2017).

In a recent literature review, various rationales behind music therapy methods emerged, leading to variation in terms of which forms of music therapy are applied (Henry & Fetters,

2012; Smeijsters & Cleven, 2006; van Yperen et al., 2017). One such form is improvisational music therapy. Through improvisation, the music therapist (MT) can modify various musical parameters, namely: instruments/vocals, sound, tempo, rhythm, dynamics, pitch, melody, and harmony (Carroll & Lefebvre, 2013). This therefore facilitates a large variation in the application of improvisational music therapy (Boshuijzen et al., under review). A common characteristic of this therapy is that musical improvisation allows the MT to observe the face and body language of their client, to then continuously musically respond and connect with the person (Graham, 2004; Holck, 2004; Raglio et al., 2006). This opportunity for constant and flexibly musical attunement can be seen as a possible effective element of improvisational music therapy in general (Wigram, 2004), and makes improvisational music therapy especially suitable for persons with more intensive and/or complex support needs.

During the therapy session, the MT makes on-the-spot choices within these musical parameters. Another reason why this form of music therapy is particularly interesting for people with intensive support needs is that these individuals mainly communicate non-verbally (van der Putten et al., 2017). Musical improvisation can thus potentially increase their communication possibilities and modalities with their environment and strengthen their relationships with others (Pavlicevic et al., 2014). Although we have insight into possible effects, we do not know which active elements cause these effects. Active elements (or active ingredients, Craig et al., 2008) are the core components of an intervention that are essential for achieving the intended effect, such as increased alertness or interaction. It is crucial to know these active elements, as knowing the active elements helps to choose suitable interventions, support the implementation, and sustainably use and scale-up interventions without compromising effectiveness (Ahun & Bacon, 2024).

Since the 1960s, a large number of music therapy cases with people with intensive support needs have been described in scientific literature, including cases involving improvisation (Alvin, 1965; Meadows, 1997). However, it remains unclear as to how improvisational music therapy can be shaped adequately for these persons and what the active elements of the therapy are. This research therefore aims to gain more insight into the motives and experiences of an MT applying improvisation within music therapy and the active elements of improvisational music therapy for people with intensive support needs. The central research question is: How could improvisational music therapy be used for people with intensive support needs? In order not only to see improvisational music therapy as a whole, but rather to be able to look at the active elements within this form of therapy, we aim to study how and why improvisational music therapy is shaped in detail.

Method

Design

This study involved a qualitative single case design, whereby two in-depth interviews were held with an MT. The first interview was a semi-structured interview with the MT about the content of improvisational music therapy (further referred to as “music therapy”) and the second interview was a retrospective interview using the Video Elicitation Interview (VEI) method (Henry & Fetters, 2012) based on the recording of a therapy session.

Participants

The case consisted of a dyad of a person with intensive support needs and an MT. The general criteria were that the MT, the parents of the person with intensive support needs, and a support professional consented to the study and were themselves willing to participate.

The person with intensive support needs met the following inclusion criteria:

1. an intellectual disability so profound that it could not be determined using standardized instruments (estimated IQ <25 points);
2. severe or profound motor problems, preventing the person from moving independently (Nakken & Vlaskamp, 2007);
3. the ability to take part in improvisational music therapy for at least six months.

The following exclusion criteria were formulated:

1. being younger than 6 years old, because at this age a developmental perspective is still unclear, thus we cannot establish for certain whether there are indeed profound intellectual and multiple disabilities;
2. being older than 40 years, because traits of frailty might be a factor intervening with the effects of therapy;
3. having a diagnosed hearing impairment, in order to focus on the perception of musical elements through typical auditory processing;
4. having serious health problems, which would make it difficult to determine the extent to which changes in behavior were due to music therapy.

The MT met the following criteria:

1. qualified in music therapy or creative therapy, with a music therapy specialization at Bachelor's or Master's level;
2. at least two years of experience in music therapy with people with intensive support needs using musical improvisation;
3. the application of music therapy to at least some of their clients, and specifically to the person included in this case study.

Ethical Considerations

Prior to recruitment, the proposal was submitted to the Ethics Committee of Pedagogical & Educational Sciences of the University of Groningen and received approval (PED-2122-S-0043). The parents and support professionals of the person with support needs were informed about the objectives of the study and their expected involvement through an information letter. Subsequently, written informed consent was obtained from the parents, the support professional, and the MT. Separate consent was requested for filming a therapy session and recording interviews. Since the person with intensive support needs was unable to provide consent for filming, this was granted by both parents, who also serve as the person's legal representatives (Maes et al., 2021). The audio and video recordings made for the study were stored on a secure drive of the University of Groningen.

Procedure

After receiving approval from the Ethics Committee, information about the study was distributed among MTs via social media and the newsletter of the Academic Collaborative Center for People with Profound Intellectual and Multiple Disabilities (ACC PIMD). Interested MTs were asked whether they were supporting a person in their practice who met the inclusion and exclusion criteria described and whether they would be willing to participate in the study. Recruitment ended once an MT indicated that this was the case. Through this MT, contact was established with the parents of their client, and with a support professional.

Data Collection and Instruments

After informed consent was obtained, background information on the person with intensive support needs was collected. This included administering the Communication Profiles Well-being and Involvement (CPWI, Petry & Maes, 2006) and the Inventory for tuning activities and situations to the abilities and Preferences of persons with Profound intellectual and multiple disabilities (IPP, Tadema et al., 2005) to both the parents and the MT.

The data collection consisted of two interviews. The first interview was conducted [by RL] with the MT to gain a clear understanding of the music therapy. Using open-ended questions and follow-up inquiries, information was gathered on the following four topics:

1. the type of music therapy provided (duration, since when, musical choices, role of improvisation);
2. the way it is delivered (considerations, application of improvisation);
3. the rationale behind the choices made and the goals of the music therapy;
4. the MT's personal experience with the therapy and the challenges they encounter.

The interview started with an open question ("Tell me about the music therapy"), and naturally ran through the above topics.

The second interview was held based on a video recording of a regular improvisational music therapy session; this recording was made after the first interview. The session was filmed on location using two cameras: one capturing a wide-angle view of the entire scene and the other focusing on a close-up of the face of both the MT and the person with intensive support needs (frontal close-up). The footage from both cameras was combined into a single video using iMovie. The recording took place in the music therapy room of a daycare center for children with intellectual disabilities, where the music sessions usually occur.

To prepare for the second interview, the researcher [RL] reviewed the footage of the therapy session and provided a description based on the video. This description included the structure of the session, moments of improvisation (Bruscia, 1987), notable interaction moments between the therapist and their client, and significant changes in musical parameters, such as timbre, tempo, rhythm, dynamics, pitch, melody, and harmony (Carroll & Lefebvre, 2013).

The second interview was conducted [by RL] using the Video Elicitation Interview (VEI) method (Henry & Fetters, 2012). This method was chosen because it provides qualitatively more detailed and accurate information compared to a regular interview. VEI is considered a valid and reliable method to gain insight into interpretations and intuitive processes, making it consistent with the aim of this study (Henry & Fetters, 2012; Hogan et al., 2016). The researcher and the MT watched the video together, both having the opportunity to pause at any moment, provide explanations, and ask questions about what was observed. During this second interview, the researcher used the following topic list:

1. **Application**: Description or interpretation of the situation, musical elements (instruments/vocals, timbre, tempo, rhythm, dynamics, pitch, melody, and harmony), limitations in improvisation.
2. **Interaction**: Behavior of the MT and/or person with intensive support needs, interaction, relationship between musical adjustments and behavior, reasoning behind (discontinuing) improvisation or variation.
3. **Rationale**: Intentionality and intention behind behavior, motivations of the MT, theoretical framework, and principles, beliefs, thoughts, and emotions of the therapist.

These topics were discussed the moment the video was paused. After each relevant moment, application, interaction, and rationale were always addressed and reflected upon. The researcher had the flexibility to deviate from the sequence and ask additional follow-up questions where necessary. Both the first and second interviews were transcribed. The transcripts were then coded and analyzed.

Analysis

First, the researcher described the characteristics of the person with intensive support needs. For readability, a pseudonymized first name ("Janna") was used. Janna's behavior was described using information gathered by the CPWI (Petry & Maes, 2006) and the IPP (Tadema et al., 2005).

The two interviews with the MT were analyzed and initially coded based on the topic list. Subsequently open and axial coding were used to systematically categorize the data and develop a good understanding of emerging themes from the interviews and a data structure was created organizing and clustering the codes (Gioia et al., 2013). First, fragments of the interview within each topic were attributed a label (open coding). During axial coding, the open codes were rearranged based on their interrelationships and then consolidated into a final code list. During this process, the emerging themes were continuously refined and adapted. Lastly, the axial codes were organized into overarching themes creating a data structure. The codes and themes that emerged were directly derived from the words used by the MT. We used quotes to try to bring the MT's experiences even closer. This means that the results are presented from the perspective of the MT and describe her experience and motives. To present the themes and corresponding codes in a clear and structured manner, a figure was designed. The figure included examples of the most frequently used words within each code. Subsequently, the themes and the codes were described in depth and illustrated with quotes from the MT.

Findings

Janna is 15 years old and has atypical Rett Syndrome. Janna lives at home with her father, mother, and younger sister. On weekdays, she attends a daycare program, where she has been seeing an MT for about 20 minutes per week. She receives music therapy from an MT with a Bachelor's degree in Music Therapy and more than 10 years of experience working with individuals with intensive support needs. The MT has been providing individual music therapy to Janna for nearly a year, but has known Janna for over two years, as Janna previously participated in group music therapy.

Janna has PIMD, which means her IQ is unmeasurable but is estimated to be below 25 points. She experiences multiple epileptic seizures daily, regularly leading to respiratory arrest. Additionally, Janna has low muscle tone, can only hold objects briefly, and has limited hand-eye coordination. Janna does not use spoken language and primarily communicates through body posture, facial expressions, and sometimes sounds. She has a very limited field of vision ("as if looking through a letterbox," according to the MT), but there are no particular issues with her sense of touch or hearing.

According to her parents and the support professional, Janna is very attuned to her surroundings and enjoys being with others. She primarily responds to people she knows, appearing particularly focused on their voice and visual presence. Janna pays attention to people or objects by making a growling sound (to signal that she is listening), turning her head or ear toward the object or person, and trying to grab it or them. Her eyes are often open, and she may smile or laugh at people. When she is very excited, she stretches her arm upward. When Janna is happy, she sometimes rocks her upper body back and forth and may make giggling sounds. If Janna dislikes something, she also makes a growling

sound. When she enjoys something, it is often noticeable through increased alertness; she makes eye contact, takes initiative, physically engages, her facial expressions relax, she sits upright, or she reaches out. If she dislikes something or is uncomfortable, her parents and support professionals report that she shows this by putting her hands in her mouth, groaning, holding her breath, clenching her fingers, closing her eyes, turning her head away, furrowing her chin toward her chest, retreating inward, physically shrinking, or biting down hard on her wrist/hand.

Description of Music Therapy

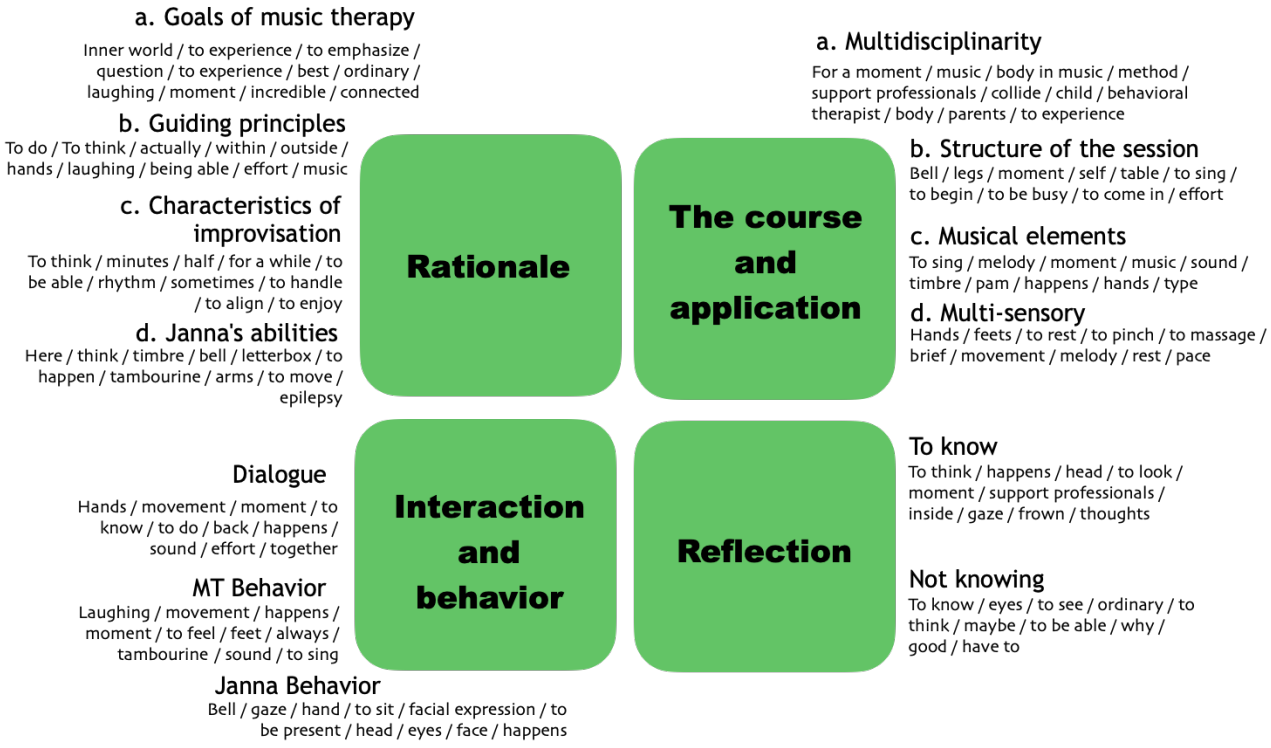
The first interview lasted 1 hour and 8 minutes and the second interview 1 hour and 57 minutes. The recorded session lasted 21 minutes and, according to the MT, represented a typical session.

From the two interviews, four themes emerged: I. the rationale behind choices; II. the course and application of music therapy; III. interaction and behavior during music therapy; and IV. reflection on all aspects of music therapy. The first three themes were in line with the predefined interview topics; the fourth theme emerged from the results. See Figure 1 for an overview of themes and codes, and an impression of the content of the codes.

I. Rationale behind choices

During the music therapy, both Janna and the MT made many decisions. The codes that describe the MT's rationale include: Ia. the MT's goals for the music therapy; Ib. the guiding principles of the MT; Ic. the characteristics of the music therapy; and Id. Janna's abilities and preferences.

Figure 1. Themes, codes, and frequently used words within the code text fragments.



The key goals for Janna in music therapy (Ia) as formulated by the MT were for Janna "to experience her environment," "to feel a sense of connection," and "to be comfortable." According to the MT, increasing Janna's alertness was particularly important—not only

during the session but also afterward, as Janna's daycare support professionals have observed that she remains noticeably more awake for a short time after music therapy has finished. The MT described this as a key motivation for working with Janna. Regarding the importance of improvisation, the MT explained:

> "I think it's almost impossible to work with Janna without improvisation because it's all about attunement. She can really enjoy music, whether from a CD or Spotify, or even listening to an alto flute, for example. (…) But when it comes to waking up, to coming out of herself for a moment to engage with someone else—when it's really about alertness and experiencing more than just herself—then, no, that can't happen without improvisation."

As guiding principles of the therapy (Ib), the MT named a number of (theoretical) frameworks she used, including a holistic approach, using intuition, synchronizing/mirroring, and working experientially and methodically. She integrated improvisation within these frameworks. She emphasized that she found it crucial to experience the music therapy session fully together with Janna, from start to finish.

Regarding the characteristics of the therapy (Ic), both musical and non-musical elements were used throughout the session. Familiarity and repetition were key elements. The MT personally sensed whether or not the connection with Janna was successful. During this contact, she intentionally held Janna's feet—not only because they were cold but also to increase her awareness and provide a sense of security. She explained: "Why do I hold her [Janna's] feet? It's a kind of standing—she's not actually standing, of course, but that's your foundation. You are supported by your feet. Even though she doesn't walk, that's still her base."

According to the MT, the therapeutic approach is primarily shaped by Janna's abilities and preferences (Id). This also means that, beyond being a therapist, the MT often feels like a second person responsible for continuously monitoring potential epileptic activity. The MT is highly aware of both Janna's limitations and her strengths and constantly took these into account during the session. She continuously observed and interpreted Janna's behavior, adjusting the therapy accordingly:

> "A djembe, a drum, or a bongo... I don't really see a preference for those instruments. She [Janna] doesn't seem particularly interested in short, dull, rhythmic sounds. (…) Since her sight is poor, she relies on her hearing to locate the sound source. That's my conclusion. And now, I think she chooses to focus on listening carefully to the sound itself. I also test this a bit by observing how she holds her eyes."

II. The course and application of music therapy

The course and application of the music therapy session were described using four codes: IIa. multidisciplinary; IIb. the structure of the session; IIc. the musical elements; and IId. the multi-sensory nature (see also Figure 1). These seem to be active elements of improvisational music therapy.

The music therapy was established in a multidisciplinary (IIa) manner, involving Janna's parents, a behavioral specialist, a support professional, and an MT. Music therapy was implemented because, according to her parents, Janna seems to enjoy music. There is regular contact between the daycare support professionals and the MT. For example, the support professionals share how Janna behaves in the group after her music therapy session. The MT informs the group about what happens during the sessions so that those elements can also be applied in daycare.

The music therapy follows a fixed structure (IIb), with a clear beginning and end. During improvisation, the therapist uses consistent and recognizable elements, often repeating

and varying existing ones. Recognition is enhanced by connecting to other aspects of Janna's life. As the MT explained:

> "I think she [Janna] knows the song. I think she knows the game. And that, um, that provides a sense of security. [It's something] I do often. Something that's also done regularly within daycare. At least, I believe the care professionals do it too, because it's something I introduced, and they, um, they found it really nice."

By humming, the therapist aims to confirm the musical situation. The transition from daycare to therapy is part of this structure: "actually it already starts a little bit in the corridor, because when I come to pick her up and we walk out the group door, say for a moment, I soon start singing a song." According to the MT, because the singing already begins in the corridor, the musical situation is "confirmed." The start is always marked by the same song (the good morning song), so it is recognizable to Janna. Conscious rituals include fixed songs at the beginning and end of the session. In the interview, the MT stated it is important to have a clear ending, during which Janna is transitioned back to the group. It is important that Janna is aware of this transition and is not— as sometimes happens— distracted by an epileptic seizure, because:

> "Then she [Janna] suddenly finds herself back in her group, instead of us finishing together and calmly walking back down the hallway (…) I would really regret that. When bringing her back, I kneel down and take her hand. Then I softly tell the support professionals what we did—almost like a small bridge, like, 'Look, now you're back here.' And, well, have a nice day, okay?"

The session studied in this research was scheduled for half an hour, but the MT describes that Janna is sometimes only present for 10 minutes. The therapist determines the duration based on their interaction and Janna's behavior during the session.

Concerning the musical elements (IIc), the MT always starts by humming. The MT states she deliberately does not use lyrics, because Janna does not understand lyrics. Nor does she use an instrument, because she first aims to make contact, and that contact is established through the voice. To continue the session, the MT plays a single melody on two small percussion instruments: a bell and a tambourine. In addition to a welcome and farewell song, the session broadly includes the following components: a foot massage, bell, and tambourine. Musically, the MT primarily uses singing, alternating with bird sounds from a ringtone, a bell, and a tambourine. The melody has a few notes, a repeating pattern, small intervals and is "contagious," using basic rhythms and jumping figures. The MT's singing is warm, moderate to soft in volume, and is in a major key, while the percussion instruments have a sharp, bright sound. Multiple senses are engaged during the session. Musical elements such as humming and singing are combined with tactile and movement-based forms. During the session, fixed structures and improvisation are alternated. The MT described this as follows:

> "Improvising means playing freely, attuned to what I see the other person doing. That's what I consider improvisation. A song, for example, is not improvisation, in my opinion. Right? What I do is sing a song, but not necessarily with her—although, actually, I do. The welcome song, for instance, I won't change; it remains the welcome song. But if I see her doing something while I'm singing, I might take a little detour—without stretching the length of the song or losing the rhythm. (…) I do that because I believe that, at that moment, it benefits her most. So, compared to, say, letting a bell ring on a stick or playing the glockenspiel—that is completely free. There is no structure to it, except that if she, for example, holds my hand while I'm holding the mallet, and she moves, then sound emerges from the glockenspiel. But

> I won't turn that into a song, because that would force her into a movement that isn't her own."

For the multi-sensory nature of the therapy (IId), the MT explains that she aligns physical movement with musical movement (rhythm). In doing so, the MT carefully observes Janna's posture—whether she becomes rigid or is able to move along. Several rituals used by the therapist have emerged during the sessions and are now consistently applied, sometimes consciously but also unconsciously. During the Video Elicitation Interview, the MT reflected on her choice to pick up a bell: "Because, from experience, she [Janna] generally responds very strongly to it. She turns towards it, and she can visually follow the sound source. If I move it, she turns her head along with it."

III. Interaction and behavior during the session

Three themes were distinguished: Janna's behavior, the MT's actions, and the interaction between the MT and Janna (see Figure 1). Since the codes are often interconnected, we chose to describe the content of the codes within these themes together.

During the session, the MT entered the room with Janna while singing. Janna was seated in her wheelchair just behind the door, with the MT positioned directly in front of her. Throughout the session, the MT connected with Janna through verbal communication as well as physical contact, such as massaging, rubbing, or gently stroking Janna's cheek, and holding her hands and arms. During the session, Janna responded by making sounds and moving her arms, feet, and head. The MT occasionally responded by laughing, imitating, talking, or singing. The MT interacted in various ways, both musically and non-musically. The MT hummed or sang almost continuously and spoke only occasionally. She seemed to be continuously aware of the ongoing interaction between her and Janna, and was attuned to how Janna felt and behaved during the therapy. The MT described this as follows: "She [Janna] really makes an effort to bring that what is approaching into her field of view. And suddenly, I have the feeling that she grabs it."

Musical interaction was achieved by varying or moving the sound source; a bell on a stand, a tambourine, and a hand tambourine without a drumhead were used. The MT smiled frequently and maintained eye contact for almost the entire session. As an example of non-musical interaction, the MT described that she created distance or came closer, physically moved along with the Janna, or synchronized and mirrored her actions. The MT described this as follows:

> "I feel whether I am holding her or she is holding me, and there is no guiding force pulling up or down. It's not like, 'I want to play the low tones,' you know? There is no musical awareness in that sense. She won't guide me in that. No, no, it would be amazing if she did."

During the session, Janna showed several periods of alertness and non-alertness. The MT and the researcher discussed this during the second interview. Janna started off alert. After a while, the MT described that it seemed like Janna had to do her best to "stay with it"; her gaze was absent and her head was slightly tilted. Eventually, the MT described that Janna's blink was followed by a smile not long after. During the Video Elicitation Interview, the MT observed Janna becoming alert again and reflected as follows:

> "I just [earlier during the interview] said: (…) wow, how much I'm asking of her [Janna] and how much effort this costs her. Whereas right now, I feel like she's just all play, that we're completely engaged, all in calm, all in joy, without her (..) having to make any effort for sensory processing or whatever."

At the end of the session, Janna's alertness reduced again. The MT described that she could see this in Janna's facial expressions and bodily posture: she no longer looked focused and her head tilted slightly. The MT wrapped up the session.

IV. Reflection

Reflection includes the codes knowing and not knowing. The MT made real-time decisions during improvisation. In this study, the choices made and the rationale behind them were discussed during the Video Elicitation Interview. The reflection during the interviews involved both things the therapist knew or thought she knew, as well as things she did not know or still wanted to explore. Sometimes, the MT intuitively knew what was going on and acted accordingly.

Looking back at the recording of the music therapy session, the therapist indicated that she constantly observed Janna and attuned to Janna's behavior. The MT always observed Janna's reactions closely and adjusted her behavior accordingly. The MT described this process as follows:

> "I think these are thoughts I have while I'm working. Like, when she turns her head, I ask myself, what is the nature of her head turning at this moment? Is she trying to get away, or is she focused on the sound? Then I look at her facial expression."

Despite knowing Janna for a long time, the MT always has doubts about correctly interpreting what she observes. One important reason for this is that a smile from Janna can sometimes indicate epileptic activity. The MT described that epileptic activity can also marked by a slightly tense face, the direction of one eye, or the expression in Janna's eyes. When interpreting Janna's behavior, the MT says she pays attention to her facial expressions, head movements, gaze direction, and degree of relaxation. The MT interprets frowning as a sign of discomfort or frustration. The MT occasionally indicated during the Video Elicitation Interview that she was unsure of exactly what was happening with Janna but knew that they were "on the same journey" together. The MT reflected on her work this way:

> "It's so tempting to say that she's enjoying herself, because everything in her face and gaze direction seems to suggest that. She's having a good time, and she's making contact. But I'm always cautious, wondering if that's really true, because inside her, so much is happening that doesn't always translate clearly to the outside."

During the second interview, the MT gained new insights, particularly about what she brings as a person during the music therapy sessions:

> "It's not that I rely on intuition a lot. I am very much attuned, and I realize, for example, when I'm not feeling my best. That doesn't necessarily mean I can't work with Janna, but I realize I'm not feeling great. (…) She is the expert *by* experience; she is the one I turn to when I don't quite know what to do anymore. And that awareness. If I don't understand you, I have to come back to you. Right? And take the time for that. And try again. It could be that I've missed something, you know, that thought."

While reviewing the recordings, the MT also reflected on the course of the session and the value of being able to look back on the therapy. Looking back, the MT noticed things she had forgotten or had not noticed during the session. For example, because Janna and the MT often react to each other, it was not always clear to the MT during the session whose behavior initiated the interaction. In one segment, Janna lifted her leg while the MT was holding her foot. This segment was enlightening for the therapist to revisit:

> "It's really nice that we can zoom in like this! And I realize that I also enjoy seeing this [initiative] come from her, because at the time, I thought I was letting go of her foot, which caused her to make that movement. But the movement actually came from her."

Discussion

Some active elements describing improvisational music therapy can be distinguished from this case study. Some of these elements are specific to improvisational music therapy, such as the multiplicity and combination of sounds from different instruments and vocals. Other examples are the use of timbre, the introduction of multiple musical instruments, and the versatile use of the voice, e.g., through humming and prosody.

For persons with PIMD, it is important to exploit their sensory capabilities and preferences because of their limitations due to intellectual and motor disabilities and the high prevalence of sensory disabilities (van der Putten et al., 2017; Vlaskamp et al., 2007). Experiencing the world through the senses is also a key component of other interventions, such as *snoezelen* (a contraction of the Dutch words: "snuffelen" [sniffing] and "doezelen" [dozing], Testerink et al., 2023) and multi-sensory storytelling (ten Brug et al., 2016; Young et al., 2011). This aligns with the goal of the MT, to use music therapy for Janna as a gateway to the world. With multiple interventions consisting of similar general active elements and different specific characteristics, a choice can be made per situation regarding which intervention fits best. For Janna, who shows an interest in music and sounds, the choice of music therapy was evident.

Janna showed varying degrees of alertness during the session. Like many individuals with intensive support needs, Janna exhibited a high degree of withdrawn behavior (Poppes et al., 2010), which may result in a loss of engagement with her environment. During music therapy, Janna displayed "waves" of alertness, as is typical for persons with intensive support needs (Munde et al., 2014). The improvisational nature of the music therapy allowed the therapist to effectively attune to Janna's immediate needs while closely observing her responses. This flexibility enabled continuous adaptation to fluctuations in alertness, thereby expanding Janna's ability to engage with her environment.

Due to their extensive support needs, individuals with PIMD need support from others to exert agency over their lives (van der Putten et al., 2017; van der Putten et al., 2009; Vlaskamp & van der Putten, 2009). Because of that, positive relationships are of utmost importance in the lives of people with intensive support needs. High quality interaction is described by staff as reciprocity, and shown by behavior such as joint attention and reciprocal attunement. In order to experience those moments, it is necessary to know the person well and to be able to interpret subtle and idiosyncratic signals of the person with support needs (Penninga et al., 2024). To build such relationships, it is essential to have communication partners who are familiar with the individual, and who are willing to invest in understanding their needs, thoughts, and emotions, which are often not easily expressed or interpreted. High-quality interactions, are those that shape positive relations, and connect people with intensive support needs with the world around them (Hostyn & Maes, 2009). The interaction between the MT and Janna during the music therapy session provided opportunities to closely align with Janna's needs while maintaining an ongoing reciprocal exchange. These kind of interactions are crucial in this context, as they contribute to autonomy and overall quality of life for individuals with intensive support needs (Hostyn & Maes, 2009). Only through interactions with others can people with intensive support needs exercise control over their own lives (Vlaskamp, 2019). In Janna's music therapy, the emphasis is on being together. Strategies used during the therapy session, such as sensitivity, multidisciplinary collaboration, and relationship building, are also strategies that are known to contribute to self-determination (Kúld et al., 2024) and

therefore to her overall quality of life. Another key strategy employed by the MT was synchronization—an approach facilitated by the flexible nature of improvisational music therapy. In a study on children with autism spectrum disorder, Nielsen and Holck (2020) identified similar methods of establishing contact, describing three types of synchrony: therapist-initiated synchronization, co-creation of a shared rhythmic pattern between the child and therapist, and child-initiated synchronization. These patterns of synchronization also became apparent in the present study on music therapy.

Improvisational music therapy offers extensive possibilities for attuning to Janna. But applying musical improvisation within a defined framework also provides anchor points that foster recognition, and potentially a sense of safety and familiarity. Earlier research showed that repeating preferred stimuli led to more response (Lancioni et al., 2011). Individuals with intensive support needs are capable of learning and understanding their environment through these patterns (Duker et al., 2004). Clear frameworks, repetition, and recognition on the one hand enhance their ability to comprehend situations and recognize patterns, leading to a greater opportunity for habituation, anticipation, showing initiative, and reacting. While this can have a positive effect, it can also lead to a lower response over time (Petitpierre et al., 2023).

Methodological Reflection

The study was conducted by the second author [RL], who is also a practicing MT. One of the advantages of this is that the researcher has a deep understanding of the setting, the role of the MT, and the decision-making framework. This was particularly relevant during the second interview, where a Video Elicitation Interview was used. A key consideration when using VEI is that individuals may misremember or reconstruct their thoughts, emotions, and beliefs based on the video rather than their actual memories (Henry & Fetters, 2012). As the researcher is an MT himself, this helped him ask for clarification when it was unclear whether the MT was seeing something new based on the video or was being reminded of the session by the footage. As a by-product, the second interview revealed that by watching and closely analyzing the footage, the MT gained new insights into Janna's behavior. However, the interviewer's background may also have had disadvantages that could have influenced the course of the interview and the questions asked. For example, the interviewer's own ideas about music therapy may have caused bias. In addition, as the MT knew that the interviewer was also a practicing MT, this might have caused her to assume that little explanation was needed.

The coding and clustering processes may also logically have been influenced by the fact that the researcher is a practicing MT. For this reason, the coding was performed by the first author [AB] and the clustering was carried out collaboratively within the research team. Additionally, the presence of a researcher in the room and the fact that the therapy session was recorded could have affected both the course of the therapy and the way the MT reflected on it. The presence of multiple video cameras may have been distracting or have influenced the behavior of both Janna and the MT. To minimize this, the cameras were positioned as discreetly as possible and were operated remotely. During the second interview, the researcher's presence was mentioned once ("and then you appear on screen"), but no further consequences were attributed to this.

During data analysis, we decided to stay close to the actions, words, interpretation and observations of the MT, in order to describe her experiences as accurately as possible. Codes were chosen thematically, based on the codes emerging from raw data. This also meant in writing the manuscript, the authors reasoned from her frameworks, even though they sometimes did not correspond with the normative premises of the authors. Since people with intensive support needs have limited symbolic or linguistic skills, they depend on others to interpret their behaviour, but these interpretations could also be risky.

Assumptions about the intentions of people with intensive support needs are necessarily constrained, potentially biased, and only one of many possible understandings (Grove et al., 2025); assumptions made during music therapy must always be reflected upon because they may result in fewer opportunities being offered, which can be problematic from the perspective of the UN Convention on the Rights of Persons with Disabilities (United-Nations, 2014). Further studies could focus on a reflective and contemplative view on the experiences of the MT using other methodology, such as discourse analysis.

There are several ethical considerations when conducting research involving individuals with PIMD (Maes et al., 2021). Due to Janna's cognitive level and highly limited communication abilities, obtaining direct verbal or written consent from her was not possible. Instead, substitute consent was obtained from her parents. Additionally, both the MT and the researcher paid close attention to any signs of distress or discomfort that could indicate an adverse reaction to the research setting before and during the video recording. It was agreed that if such signals appeared, the video recording would be stopped. Prior to the study, the CPWI (Petry & Maes, 2006) was conducted to determine how Janna expressed discomfort.

Research into effective interventions for persons with intensive support needs is highly important and deserves attention, especially as there is an increasing emphasis on evidence-based practice and the accountability of interventions (Maes et al., 2021; ZorginstituutNederland, 2022). In general, interventions are referred to as a systematic, targeted approach to remedy a problem or improve a specific situation (Metz & Sonneveld, 2018). This raises the question of when something is a problem, and which situations call for improvement. For many people, experiencing music is a source of pleasure, enjoyment, relaxation, and togetherness. Before we discuss the insights, we want to acknowledge our finding that too much emphasis on the necessary usefulness of music can lead to exclusion of experiencing music when the usefulness from a therapy-related perspective is uncertain. In addition, the question arises whether it is desirable that music is primarily or only offered in the form of therapy, rather than in play or hobby, as is the case for other people without intensive support needs. This is in line with the UN Convention on the Rights of Persons with Disabilities (United-Nations, 2014) which states that people with disabilities also have the right to participate in cultural life, recreation, and leisure activities.

This study provides more insight into a widely used yet complex intervention—improvisational music therapy. It takes us through the considerations and doubts of the MT and emphasizes the knowledge the MT needs to offer this therapy properly. Similar to effect studies, it mainly focusses on the effects observed during the intervention (Maes et al., 2021). But because the study describes a longstanding relationship between an MT and her client, this study makes a case for the importance of relationship building, and thus the importance of permanent staff in supporting people with intensive support needs. Developing meaningful relationships with other people can prove to be challenging.

In addition to specific musical elements, this form of therapy appears to contain numerous general elements that can frequently be seen in interventions aimed at persons with intensive support needs, such as repetition or familiarity/habituation, multi-sensory stimulation, and a focus on interaction and togetherness. Future research could explore how different forms of music therapy incorporate these elements and how they relate to effectiveness. This study made it clear that a lot happened in the 20-plus minutes of the session (and possibly before and after). The rich complexity of music therapy and thus the demand for detailed insight have been endorsed and described previously (Hakvoort & Tönjes, 2023). A next step for research lies in broadening and deepening: describing more cases or elements from music therapy to gain insight into the active elements of this therapy.

Conclusion

The central research question in this study focused on how improvisational music therapy was used for a young woman with intensive support needs. First, we described the rationale behind the therapy, exploring the theoretical framework used as well as the benefits seen for Janna in particular. We explored the application of improvisational music therapy and described the active elements, behavior, and interaction that took place during music therapy. The reflection process shed more light on the challenges that the MT encountered. The results showed that music therapy was used to help Janna experience the world around her—both through sounds and a sense of togetherness. The MT made clear choices regarding structure, recognizability, and a multi-sensory approach to music therapy. This was also reflected musically: the MT varied familiar melodies to match the situation and maintain contact with Janna. Large or small rituals, structures, and repetitions could be found in all parts of the therapy session.

Improvisation played a key role in this process, facilitating interaction and attuning within the music. On the one hand, the MT was constantly observing, adjusting, and checking whether Janna felt comfortable, and acted accordingly. On the other hand, the MT often acted intuitively during the music therapy session or was not sure how to react. Despite knowing Janna for two years and working intensively with her for nearly a year, the MT is still learning about Janna's behavior.

About the Authors

Annet ten Brug, PhD studied educational sciences and works as assistant professor at the Department of Inclusive and Special Needs Education. Her work centers on improving the quality of life for people with intensive support needs. Building on her dissertation (2015) on the application and effects of multi-sensory storytelling, her research focuses on the development, evaluation, and implementation of interventions within the social and cultural domain, specially aimed at people with profound intellectual and multiple disabilities. She is involved as co-supervisor in several projects such as snoezelen, the use of technology, loneliness, and inclusive societies.

Richard Lekkerkerk, MSc MA is a cellist and music therapist. He obtained his Master of Arts degree at Codarts University of the Arts. During his training in music therapy, he completed an internship working with people with profound intellectual and multiple disabilities and conducted research on the application of music therapy within this population. After graduating, he became involved as a researcher at the Academic Collaborative Center PIMD. Richard combines his work as a researcher, cellist, and independent music therapist with his work in mental health care and elderly care. His work focuses on the development and application of music therapy for people across the lifespan.

Gineke Hanzen, PhD is a postdoctoral researcher at the Academic Collaborative Centre related to people with PIMD. In addition, she is working as a physiotherapist with people with visual and intellectual disabilities at Koninklijke Visio. She focuses on ways to improve participation of the target group. She does this by developing/researching methods to actually promote participation.

Aly Waninge, PhD is physiotherapist, professor at the Hanze University of Applied Sciences, and associate professor at the University Medical Center, University of Groningen in Groningen. From this background, she is member of the management team of the Academic Collaborative Center for PIMD. Her research focuses on the Participation and Health of persons with severe or profound intellectual, visual and multiple disabilities. She

is co-supervisor of several PhD projects at the intersection of participation and health, for example about healthy lifestyle, health issues, pain observation, visual rehabilitation, and palliative care.

Prof. dr. Annette A.J. van der Putten is a professor at the Special and Inclusive Needs Education: Learning and Development department at the University of Groningen. She supervises numerous research projects in the field of education and support for children and adults with profound intellectual and multiple disabilities and their relatives. As chair of the academic collaborative center she oversees that (scientific) knowledge about people with multiple disabilities is created in close collaboration with relatives and professionals, and is then disseminated and implemented in daily practice, both in care organizations and families.

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