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"It's Like we Have Our Own Rhythm". Music Therapeutic Affect Regulation in a Case Study of a Traumatized Patient in Mental Health Treatment

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Received 9 July 2021; Accepted 23 May 2023; Published 1 July 2023
Editor: Claire Ghetti
Reviewers: Heidi Ahonen, Auli Lipponen

Abstract

This article explores how music therapy can contribute to the treatment of individuals with affect regulation challenges related to relational traumatic experiences. Affect regulation was investigated through a case study of music therapy with a man with complex post-traumatic stress disorder. The case represents clinical work in a psychiatric hospital, on a ward for ambulatory treatment of people with severe mental illness and substance abuse challenges. Based on theories of communicative musicality, intersubjectivity and traumatology, an analysis of transcripts of music therapy improvisations and verbal interaction is presented and discussed. The method used in the study is an abductive explanatory thematic analysis grounded in hermeneutic interpretation of data. The two main themes emerging from the analysis are "Musical interaction as co-regulation" and "Music as a creative (re)source" with the subthemes "Musical interventions serves as a regulation tool", "A process from regulation to relationship, "Musical self-agency" and "Music therapy as an experimental playground". Further studies on affect regulation in clinical music therapy are warranted.

Keywords: case study; trauma; affect regulation; music therapy

Introduction

As an entry to this article, the following case vignette illustrates an episode of affect regulation with the patient "Ali," who comes into the hospital for an emergency consultation because of issues connected to agitated behaviour. He is at the beginning of

Publisher: GAMUT - Grieg Academy Music Therapy Research Centre (NORCE & University of Bergen)

DOI: https://doi.org/10.15845/voices.v23i2.3369

his music therapy course, just before his fourth music therapy session. The music therapist and a psychologist meet the patient together to make an evaluation on his mental state.

Case vignette:

> We are in the psychologist's office. Ali talks rapidly. His eyes are wide open with a frightened look, his body is tight and his voice harsh and loud. It's hard to grasp what he's trying to tell us - there is something about people being after him, the constant pain in his stomach and about painful memories. The psychologist and I try to answer him and to calm him down, but it seems as if Ali can't hear us. Talking feels pointless.
>
> I walk towards the door, open it and ask Ali if he would like to join me in the music therapy room. Although Ali continues his rapid speech, he follows me down the hallway and into the room. While he continues to talk, I get the guitar and the bass. I hand the guitar to Ali. He takes it in his hands and starts to play immediately. His playing has the same rapid tempo as his speech. The music Ali is playing is familiar to me - he plays his own melodies and we have played them before. I join him, following the melodies, matching the speed and intensity of Ali's music. I know his phrases. Then, gradually, I play slower and slower on the bass. Ali follows me and soon we are playing in a common calm rhythm. We start to improvise around the known melodies. We interact in the music, our melodies "talk" to each other; we are inspired by the moment and the music that fills it. Suddenly we burst into laughter at the same time. Ali smiles, looks at me and says, "I actually liked what you did."

In mental health care, there is a population of patients with a complex symptomatology, where a common denominator in the patients' anamnesis is that they have experienced relational trauma from primary caregivers and from an early age (Bath, 2015; Herman, 1997; van der Kolk, 2005). Among a range of symptoms, this can be seen in difficulties with relationships and a lack of self-regulating mechanisms (Nordanger & Braarud, 2014; van der Kolk, 2005). Due to this, treatment of these patients has shown to be challenging and it is suggested that one needs other approaches than verbal psychotherapy alone (Hart, 2017; Siegel, 2012). Music therapy is described as a form of psychotherapy that has been shown to contribute positively to affect regulation processes with this population (Lindvang & Beck, 2017; Porges, 2010; Saarikallio, 2019). Although there is a growing body of research in literature on music therapy and affect regulation, there is a call for descriptions of affect regulation processes in clinical music therapy settings (Moore, 2013; Saarikallio, 2019).

In the case vignette above, a patient with this symptomatology is described. As shown in the vignette, the patient does not respond to verbal therapy interventions. Here, music therapy seems to contribute positively to the patient's affective state. This article approaches affect regulation and music therapy through a case study that aims to investigate how music therapy can contribute to and facilitate affect regulation processes. The case is taken from the first author's clinical practice at a mental health care unit in Norway and is built on the first author's master thesis (Bjørke, 2018).

What is an Affect?

There has been an ongoing discussion regarding the ontology of affect and how to discriminate between affect, emotions and feelings, which sometimes are used interchangeably. The original Latin word affectus means "disposition, mood, state of mind or body." Merriam-Webster categorizes affect as specific to psychology and defines it as "a set of observable manifestations of an experienced emotion**:** the facial expressions, gestures, postures, vocal intonations, etc., that typically accompany an emotion" and

secondarily "the conscious emotion that occurs in reaction to a thought or experience" (Merriam-Webster, n.d.). We choose to regard the concept of affect both as an expression of a basic emotion (categorical affect) including both positive and negative affect, and as an expression of the way the affect is expressed. In this paper, when speaking of affect regulation, we primarily speak of the efforts to minimize negative affects with high intensity such as fear, anger, frustration and panic.

Early Nonverbal Interaction Forms Adult Affect Regulation Capacity

Research on early interaction between infants and parents has shown that the earliest form of communication that humans develop is linked to a pre-linguistic communication form that has many musical qualities (Stern, 2010; Trevarthen & Aitken, 2001).

Infant researchers such as Daniel Stern and Colwyn Trevarthen have been vital to our understanding of what scholar and author Siri Hustvedt called "the intersubjective music of early life, the preverbal melodies of the first human interactions" (Hustvedt, 2012, p.187). This refers to a form of rhythm and timing that is seen as an important part of infancy and as a crucial part of attachment, where recognizing and synchronizing with each other's intensity and 'forms of vitality', shapes the emerging interpersonal dance of communication and play (Stern, 1985; 2004; 2010). Stern described that forms of vitality are "involved... in the moment-to-moment process of adaptation and enactment. Vitality dynamics are thus crucial for fitting a living organism into the world that it encounters" (Stern, 2010, p.19). Caregiver and infant create a duo where mutual rhythms of gazing, vocal intonations and gestures are "attuned" to each other (Hustvedt, 2012), which on a basic level uses musical structures to communicate and bond with the surrounding world (Trevarthen & Malloch, 2000). This intersubjective musical communication form also refers to the part of these preverbal melodies where the caregiver tunes into the affective state of the infant and helps to regulate overwhelming feelings (i.e. fear, overexcitement or frustration) through subtle rhythmic non-verbal interactions, a process often called co-regulation (Hart & Schwartz, 2009). These non-verbal interactions consist of musical variations such as pulse, timbre, pitch, volume, and are all part of what is known as attunement and intonation in communication (Stern, 1985; 2010; Trevarthen & Malloch, 2000).

In his main work, *Affect regulation and the origin of the Self* (1994), Allan Schore was one of the first to formulate a theory that integrates both neuroscience and developmental psychology in regarding human development and affect regulation. Schore (1994) states that the emotional communication between caregiver and infant in itself *is* affect regulation. Schore stresses that it is the caretaker's ability to non-verbally tune in emotionally that helps the infant develop its emerging emotional structures. These emotional structures are made up of the limbic system and in particular the amygdala, which registers fear and activates the body, releasing adrenalin and noradrenalin in case of danger. These structures are also connected to the hippocampus which evaluates new situations built on our former experiences. Through repetitive caregiver-infant interplay, the neural structures connected to the regulation process are created and strengthened. The child will eventually internalize this regulation and this leads to the development of self-regulation, the process where the child has built inner working models for affect regulation and can regulate him/herself (Schore,1994). Even though we develop these communication skills as infants, they are integrated into the development of our communication skills later on and into adulthood (Stern, 2010). As Allan Schore and many developmental psychologists have postulated, these rhythms of attachment are crucial to affect regulation later in life (Ainsworth & Bowlby, 1991; Beebe & Lachmann, 1998; Beebe, 2000; Bowlby, 1969; Dales & Jerry, 2008; Schore, 1994). This is also the basis for Schore's

(2001) description of how a therapist must act as an affect 'regulator' of the patient's dysregulated states, in order for the patient to develop self-regulating mechanisms.

Affect Dysregulation and Developmental Trauma

Affective dysregulation describes the process in which the child is not given the opportunity to develop healthy affect regulation mechanisms. According to attachment theory the child is nested in a safe attachment relationship when the caregiver actively attunes to the child's needs and sensitively responds to its expressions (Bowlby, 1969). If the caregiver is absent, repeatedly and over time does not tune into the child's inner state or is severely dysregulated him/herself, the child will be left to manage their own responses (Beebe, 2000; Schore 1994; van der Kolk, 2005). Without having the necessary neural precondition, the child is then left to manage intense affects on their own (Robinson et al., 2009). As an adult, without having achieved self-regulating skills, a person is often seen as vulnerable to stress and less able to handle conflicts in relationships and will often turn to survival strategies and self-destructive coping mechanisms such as drug abuse or self-harming (Beebe & Lachmann, 1998; Dales & Jerry, 2008).

Childhood trauma, neglect and insufficient co-regulation have been linked to developmental trauma (Nordanger & Braarud, 2014; van der Kolk, 2005). Developmental trauma is associated with a host of psychiatric diagnoses in adolescence and adulthood, such as substance abuse and borderline and antisocial personality disorders. A correlation between people who have been diagnosed with a psychotic disorder and who have experienced childhood trauma has also been found (Bendall et al., 2008; Krabbendam, 2008). In the WHO diagnostic manual, ICD-11, a diagnosis describing trauma-related disorders called Complex PTSD (C-PTSD) is included. In addition to the symptoms related to post-traumatic stress disorder (PTSD): (1) re-experience of the traumatic episode, (2) avoiding circumstances of stressors and (3) persistent symptoms of an ongoing threat manifested in excessive fear and extreme surveillance, there are three additional symptom clusters that reflect "disorders of self-organization" (WHO, 2019). These are (1) affective dysregulation, (2) a negative self-concept and (3) relationship disorders. These disorders are typically proposed to be associated with ongoing, recurrent or other forms of traumatic exposure, such as sexual abuse, severe domestic violence and emotional neglect. These three additional symptoms are intended to highlight the loss of emotional, psychological and social resources that have occurred due to long-term and harsh living conditions (WHO, 2019).

The Window of Tolerance Model - Affective Dysregulation Expressed Through Hyper and Hypo Reactions

Ogden et al. (2006) describes different states of activation through a model called the Window of Tolerance (WoT). In this model, when one is inside the window of tolerance, one can tolerate being present in situations and relationships, and one is able to learn (Siegel, 2012). Two different ways of being outside one's window of tolerance are overactivation, called *hyperactivation,* and under-activation, called *hypoactivation*. Whenever one is too activated or too little activated, one is outside the window. When in these states, it is difficult to be present in the moment and difficult to engage in social interplay, because both are connected to survival states and linked to the physiological state of the body. A hyperactivated state is typically associated with the "fight or flight" response. Here, heart rate, respiration and muscle tone are increased and this can be expressed in, for example, impulsivity and aggressive behavior (Nordanger & Braarud, 2014). In a hypoactivated state, heart rate, respiration and muscle tone are decreased (Siegel, 2012). Porges (2011) describes the hypoactivated state in his polyvagal theory as

an evolutionarily older response called "immobilization." Here, the body becomes paralyzed and a reaction can be a pervasive feeling of numbness (Ogden et al., 2006).

The WoT model is linked to affect regulation and co-regulation between infant and caregiver, illustrated by the crucial role of a regulating caregiver in helping the infant to move into their own window of tolerance. The model emphasizes that the range of the window is increased when the parents tune into the child's emotional state and help the child regulate and move back into the window of tolerance again, gradually giving the child the ability to regulate themself and integrate internal working models for self-regulation (Nordanger & Braarud, 2014).

The WoT theory describes how, when one is outside the window, it can be difficult to communicate with one's surroundings. For example, it describes the difficulty of perceiving verbal speech in a hyper- or hypoactivated state (Porges, 2010). The triune brain model (MacLean, 1990) offers a theoretical base for how regulation terminology and WoT are connected to trauma psychology (Nordanger & Braarud, 2014). The triune brain model illustrates the brain in a simplified way in terms of three hierarchical, evolutionary layers: the reptile brain, the older mammalian brain, and the newer mammalian brain, also called the survival brain, the emotional brain, and the logical brain (MacLean, 1985). *The survival brain* is linked to the autonomic nervous system and sensory and arousal-regulating processes such as heart rate, respiration and body temperature. *The emotional brain* is linked to the limbic system (including amygdala and hippocampus as mentioned above) and emotional processing, and is connected to affects such as anger and fear. It also contains memory functions. Common to both the neurological processes at the autonomic nervous system level and at the limbic and emotional level is that they lack neurological circuits that enable them to communicate verbally (Hart, 2017). *The logical brain* is linked to prefrontal thinking and mentalizing processes and gives us consciousness, verbal language, and the abilities to reflect and control our actions. It is at this level that the ability to imagine and to reflect on oneself and others arises.

When in an activated state outside the window of tolerance, the logical brain can be seen as "turned off." Here, approaches such as verbal therapy, which is related to the logical layer of the brain, often do not succeed in establishing a connection to the patient. Processes of regulating arousal and affective levels are necessary for the prefrontal part of the brain to be "online."

The WoT model and the triune brain model have in recent years been used as a theoretical basis for the use of music in trauma treatment, where the therapist uses musical elements to help the dysregulated patient back into their window of tolerance.

Music, Emotions and Affects

The connection between music and emotion has been studied for decades (Juslin & Sloboda, 2010; Juslin, 2019). We agree with the approach formulated by Cespedes-Guevara & Eerola (2018), where the musical expression of feelings, as well as the perception of basic emotions and affects in music, is seen through a constructivist lens. Hence, proposed affective contours of music (such as downward melodies for sadness, upwards for happiness) are not seen as universal and cross-cultural, on the contrary, emotional meaning is construed according to the specific time, place and relationship.

Theories from music psychology describe affect regulation with music as *situated* - taking place in a context such as music listening, singing or dancing in a specific situation or place, with a personal *strategy* such as seeking pleasure or distraction, and the underlying *mechanisms* of affect regulation contribute to how music impacts emotions and affects (Baltazar & Saarikallio, 2017). In order to explain mechanisms of music-related affect regulation, Saarikallio (2019) proposes the access-awareness-agency (AAA) model, that

defines a music-based social–emotional competence (MuSEC) as an interplay of embodied access, reflective awareness, and sense of agency. The access dimension is related to the ability of music to support embodied non-verbal experiences, the awareness dimension is related to self-reflective, conceptual understanding of affects, and the agency dimension is about self-control, ownership and active participation.

Music Therapy and Affect Regulation

The ability of music to facilitate access to, to express and process emotions or to distract from negative emotions is part of the common narrative of the effectiveness of music therapy, although research in the underlying mechanisms of change is sparse.

The book, *Musik krop og følelser [Music, body and emotions]* (Lindvang & Beck, 2017), addresses the way in which the therapist and client can interact on affective levels in music therapy. Here it is described how music therapy can contribute to the healing and regulation of adults and children who have experienced emotional neglect through their developing years, or are affected by neurological damage. Hart (2017) emphasizes that humans develop the ability to express and regulate emotions before they acquire verbal language - and that music, with its inherent emotional structures and communication potential, has a unique capacity to facilitate affect regulation. In a case study, Trondalen and Skårderud (2007) describe how affect attunement can constitute "affective intersubjectivity" when matching the client's expression with regard to form, intensity, and timing. The authors state that vitality affects, rather than categorical affects, are prominent in processes of affect regulation: "Vitality affects have a *regulating* function, vary in form and inner process, are connected to body awareness, and are always present and continually available for interpersonal coordination via sharing and mutual regulation" (Trondalen & Skårderud, 2007, p.102). Music therapy and affect regulation were also the main themes in psychologist Dag Nordanger's keynote lecture at the Norwegian music therapy conference, where he described how the musical neurological structures can help the individual to regulate within the WoT (Nordanger, 2018). Thus, music therapy can be an arena for achieving security, relationships and a sense of mastery, as well as providing a basis for learning (Krüger et al., 2017).

In the article, "Introducing a new model of emotion dysregulation with implications for everyday use of music and music therapy," Marik & Stegemann (2016) investigate how music therapists in many different fields work with emotion regulation. They understand emotion regulation in music therapy as interpersonal regulation that takes place in a therapeutic relationship, and they point out that music can be helpful, but also potentially harmful to emotion regulation, as music can evoke unpleasant emotions and memories. They emphasize that emotion regulation is context and person dependent and that a person-centered approach in music therapy provides optimal conditions for emotion regulation.

In "A systematic review of the neural effects of music on emotional regulation: Implications for music therapy practice," Moore (2013) studies the role of music in emotion regulation and the use of music to change emotional states. Moore describes how music that appears happy and pleasant with predictable harmonies is best suited to obtain an optimal level of regulation in the patient. As in the article by Marik & Stegemann (2016), Moore also points out that emotion regulation is related to the person's musical preferences. A systematic review, conducted in order to identify music-related brain mechanisms for affect regulation in patients with affective disorders, showed, among other findings, that music that was considered non-threatening calmed the amygdala, which is related to stress and fear. There are numerous significant relationships between music-based affect regulation factors, healthy and unhealthy music use, and coping strategies (Silverman, 2015; 2020). As music can be used for maladaptive coping strategies such as rumination

and isolation, Silverman suggested that music therapists should educate patients to use music-based affect regulation as an effective adaptation and coping strategy. We agree that qualified psychoeducation related to (home) music listening is important, but within the safe space of music therapy and within a stable therapeutic relationship, it can also be important to work with "unpleasant" music in order to process and work through traumatic experiences, states and affects that are experienced as problematic.

Studies of Affect Regulation in Music Therapeutic Trauma Treatment

In her PhD, *Interpersonal rhythm disrupted by a history of trauma: an in-depth case study of analytical music therapy,* Auf der Heyde (2012) explores how musical improvisation can be used in the treatment of a woman with a trauma history. The case study investigates how rhythmic interactions in musical improvisations facilitated co-regulation, healing interactions, and the repair of interpersonal issues. The study contains an analysis of the use of clinical improvisation, through the use of four Improvisation Assessment Profiles (Bruscia, 1987). The data was further seen in the light of the WoT model, and it was found that most of the mental state ratings of the client were within the "optimal arousal state." Auf der Heyde (2012) concludes that musical improvisation facilitates opportunities for bi-directional co-regulation, and regulation on both intrapsychic and interpersonal levels.

Although articles that explicitly describe affect regulation in music trauma therapy are sparse, it is possible to find descriptions of affective phenomena in the literature of music therapy and trauma treatment. Carr et al. (2012) describe how music therapy in groups helps trauma survivors to alleviate PTSD-symptoms, increase sense of autonomy and self-determination and create security. This study also suggests that the music helps regulate the arousal level and the affective state of the participants. Ahonen & Desideri (2014) describe how music was used as an emotional expression in a music therapy group with refugee women experiencing PTSD. Here, the goal for the therapy was to help the women to cope with feelings of guilt, loss, loneliness and fear. In a study of group music therapy with six war veterans who all had a PTSD diagnosis, Bensimon et al. (2008) describes how playing the drum in a group increased the group members' sense of togetherness, belonging, connection and closeness. They also describe how music could help to express and regulate negative emotions such as anger. In another study on war veterans and PTSD by the same authors (Bensimon et al., 2012), various instruments were used in an active, improvisational setting, taking into account the associations these instruments gave the veterans. By exposing the veterans to sounds that led to the re-experiencing of trauma (metal instruments), and then switching to a soundscape associated with pleasure and security (wood instruments), the group participants were able to regain a sense of control and security, as well as an experience of being able to better regulate their emotions. Orth (2005), states in an article about music therapy in trauma treatment that the main goals of the therapy are to facilitate ways of expressing emotions nonverbally, creating a safe framework in which to do so and establishing social interactions where negative emotions can be expressed and contained.

In receptive music therapy, such as Guided Imagery and Music, several studies describe how music listening can contribute to affect regulation (Beck et al., 2017, 2021; Maack, 2012; Story, 2018). Beck et al. (2017) found that Music and Imagery could be used in all Herman's (1997) three phases of trauma treatment (establishing safety, retelling the story of the traumatic event and reconnecting with others), in establishing inner resources such as positive emotional stabilizing experiences with music, as well as working through traumatic memories with music as a supportive structure and emotional mirror. Furthermore, the clients experienced that music helped them to feel and contain contradictory emotions related to traumatic memories, regulate these emotional states, and broaden their capacity for emotional depth. Recently, McFerran et al. (2020) pub-

lished a critical interpretive synthesis of research literature, examining theories informing music therapy studies related to how music works in trauma treatment. The authors were critical of a mechanical view of music as a tool to entrain or stabilize the brain based on authors such as Porges, van der Kolk, and Siegel, without taking into account the highly personal, internal and relational processes related to music in trauma work.

Although some knowledge about affect regulation in music therapy exists, there is still a need for a deeper understanding of how the process of affect regulation unfolds. In the following, a case study of music therapeutic interaction and affect regulation will be provided.

Method

The present study is conducted as a clinical explanatory case study (Murphy, 2016) which is recognized as a methodology to explore a case unit, in this article a specific course of music therapy, where the focus is on acquiring more knowledge about a specific phenomenon. The phenomenon in question is affect regulation, where the case is investigated in light of existing theories in the field. The study is situated in a hermeneutic tradition and in an abductive approach (Thurèn, 2007) where the inquiry of knowledge is based upon an interactional process consisting of interpretations of the material in a framework of existing literature. The first author was the (advanced) music therapy student in the clinical setting and the second author was the clinical supervisor.

Data Selection

The raw data material consisted of audio recordings and logs from 13 music therapy sessions within the time limits of four months. The logs were written as clinical notes and provided descriptions of the sessions, assessment of the patient Ali's state of mind and the therapist's reflections about the session. In a dialogue between the two authors two music therapy sessions were selected as the subject for the analysis. The two sessions were selected according to the principle of purposive sampling. We estimated that these were sessions with thick descriptions, many patient verbalizations so that the voice of the patient could be heard, and that different types of processes of affect regulation were prominent. We also chose sessions in the middle of the therapy course that we estimated to be typical and representative.

Analysis Method

An explanatory case study is characterized by an analysis that contains condensing of data into concepts, as well as structuring these concepts into explanatory themes (Murphy, 2016). In this process a thematic analysis (TA) was used (Braun & Clark, 2006). TA is in line with the study's hermeneutic and abductive fashion, emphasizing the circular process of the research between theoretical investigations and new insights in the research process. In TA "coding" refers to the process of detecting entities which could further be developed into themes. The analysis is conducted using *NVivo* (QSR International, 2015) and the process can be described in three steps: (1) Generating initial codes, (2) Searching for themes and (3) Defining and naming themes.

Analysis Process

The verbal dialogues of the audio recordings of the two therapy sessions were transcribed, and the improvisational musical interaction was thoroughly described by the first author, although not in musical notation. The first author created narratives from the two selected sessions weaving together clinical notes and transcriptions. The creation of narratives was

approached in a descriptive way, with emphasis on the actions and verbalizations more than the interpretation of the interaction, yet with the purpose of upholding a poetic style of writing that could mirror the artistic media of music and the relational "dance." As such, the narratives served as the first layer of the hermeneutic interpretation in the analysis, and the thematic analysis as the second hermeneutics. Quotes from the narratives illustrate and deepen the description of the themes in the results section.

In step (1) NVivo was used in the process of investigating the narratives, marking codes and further generating codes into meaningful groups. In step (2) the different codes were sorted into potential themes, here theories on the field were taken into the interpretation process. Two themes emerged as prominent for the narratives. One of these was a theme that described the affect regulation process due to musical interventions and musical-social interactions. For the other theme further investigations of the data material were needed. We returned to the narrative and to step (1). By studying the narratives and the codes more closely, and by looking once more into the literature, a new aspect of regulation processes emerged. Here the *context* around the regulation process appeared as crucial for the actual affect regulation to take place. This cyclic research process resulted in the last step of the analysis. In (3) a review of the themes was conducted. In this process refining and describing each theme, and detecting sub-themes, took place which led to the naming of the two main themes *Musical interaction as co-regulation* and *Music as a creative (re)source*. Finally, each theme was illustrated with data extracts capturing the essence and prevalence of the theme. Practicing an abductive approach, theoretical perspectives were intertwined with the analysis process and contributed to the creation of themes. To present the themes as clearly grounded in data, we have chosen to first present the themes without the theoretical perspectives, and then elaborate upon the corresponding theories in the discussion.

Ethics

Informed consent was obtained from the patient to use audio data for the analysis and academic publication in anonymized form; the audio recordings were deleted after transcription in accordance with the patient and any form of information about the patient that could compromise his anonymity was removed. The study was approved by the Norwegian Centre for Research Data.

Preunderstanding

Due to the hermeneutic fashion of this study and TA as "an organic approach to coding and theme development and the active role of the researcher in these processes" (Clark & Braun, 2017, p. 297) we will now elaborate our preunderstanding since we believe that this plays an active role in our interpretations of this case and the results from the analysis. The stance of the researcher informs the lens through which we look at and interpret data, and also serves as a positioning in the music therapeutic theoretical landscape.

Both authors are educated in the integrative psychodynamic tradition of music therapy and have worked with trauma treatment clinically and theoretically for several years. The first author has worked in the psychiatry field and in addiction treatment with patients working through trauma disorders. The second author has worked with GIM, music listening and affect regulation in psychiatry and private practice and published on music therapy treatment of refugees who have experienced trauma. She has several forms of further education in trauma treatment and body therapy and is informed by Somatic Experiencing. Both authors had a pre-understanding that something special was happening in this complex case, and that it could provide more knowledge about specific musical processes of affect regulation.

Analysis

Case Presentation

Maintaining the patient's anonymity, it can be said that Ali grew up in an Arab country and came to Norway as a teenager. During the course of music therapy, Ali was in his late thirties; he was without a permanent home and did not have a permanent job. Ali had experienced a violent upbringing, sexual abuse and broken relationships. As a result of this, he was described as having significant relational traumas and Complex PTSD, which were expressed through flashbacks, panic anxiety, sleep disorder, unstable and turbulent relationships and difficulties regulating affect. In addition to this, he had developed challenges with substance abuse and associated drug-induced psychosis. He was also described as having an elevated risk of violence and had a past history in a criminal environment.

In treatment, several therapists had described Ali as difficult to build an alliance with. He had difficulties trusting the therapists and could become suspicious and rejecting towards them. He also tended to become agitated in verbal therapy and would occasionally interrupt the therapy and storm out of the therapist's office or behave in a threatening way. Despite his challenges, Ali had a number of personal resources. In addition to good musical skills, he was described as being a polite and caring person. The psychiatric unit practiced milieu therapy, which included a music café once a week. Ali joined this occasionally where he played the guitar and got positive feedback from the other attendants.

Ali had a lifelong and close relationship to music. In Ali's own words, music for him was something deeply personal. He described the music he played as his own feelings and "an ongoing story about my life." Ali had attended music school from an early age in his home country. He described this as a positive contribution in his life, where he experienced mastery and positive recognition from family and friends. He described how he discovered that he could use music for comfort in times where he felt lonely.

Music Therapy Sessions

Ali attended music therapy once a week for four months in an out-patient psychiatric ward for dual diagnoses related to psychiatric illness and drug addiction. In addition to music therapy, Ali attended verbal psychotherapy with a psychologist and occasionally attended the milieu therapy in the ward. Ali attended a total of 13 music therapy sessions. The music therapy consisted mainly of improvisation based on melodies, or more precisely "musical themes" composed by Ali. He would teach the music therapist how to play these themes, and they would improvise around them. Ali could describe his melodies in terms of feelings, for example, "this is a sad melody." In summary, the music therapy contained musical interactions as the basis for and main mode of communication.

During the time period where Ali received music therapy, his mental state was considered poor and his relational issues and poor affect regulation mechanisms were prominent. He was often assessed to be dysregulated and outside his window of tolerance. In music therapy, Ali was on several occasions described as *hyperactivated* when entering therapy. Here, talking to him did not lead to anything (as described in the introduction) and musical play was experienced as a way to connect with him. Eventually, it was appraised that Ali should attend music therapy followed by verbal therapy. It was assumed that Ali would benefit from verbal therapy to a greater extent if he attended music therapy first.

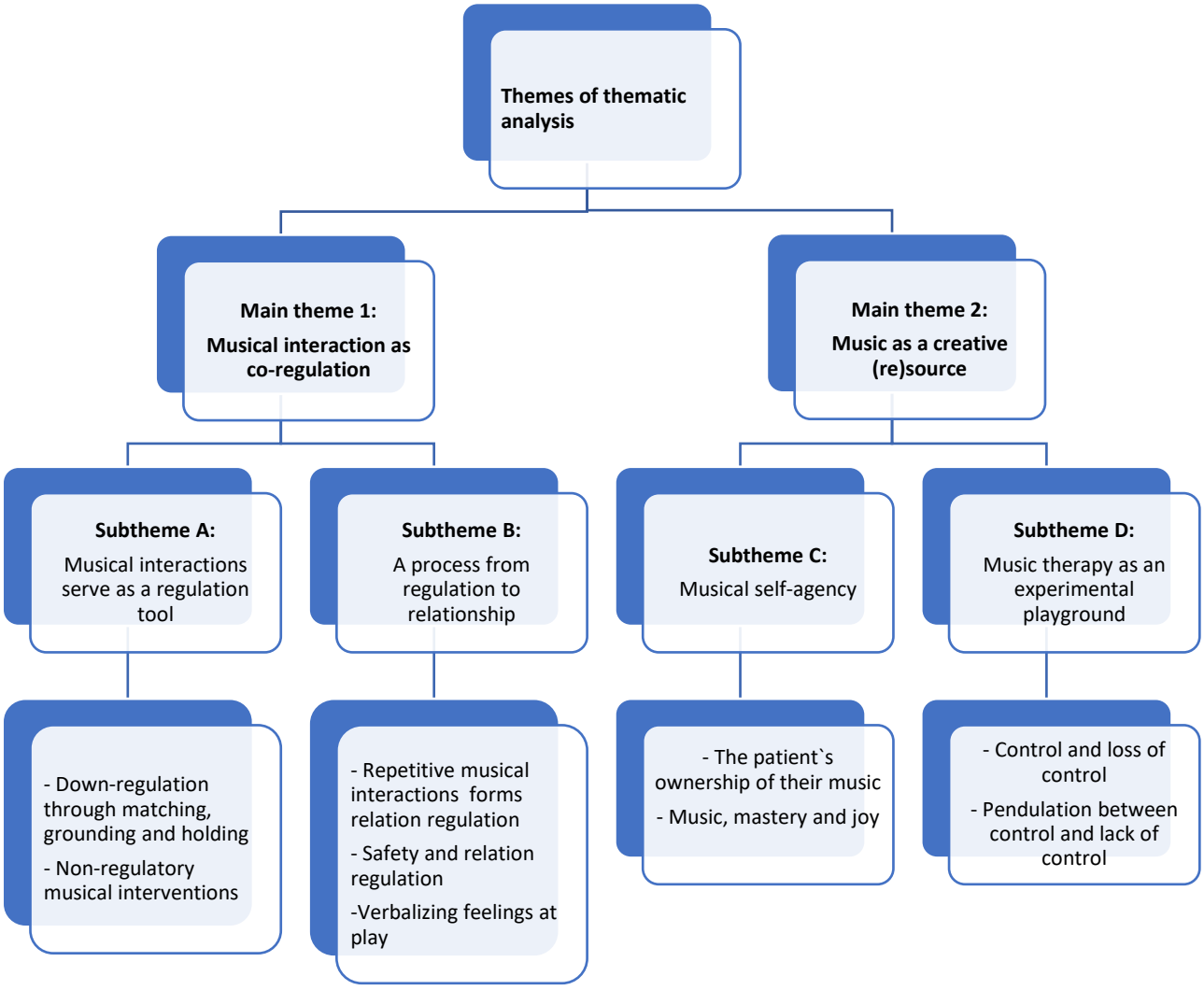
During the course of music therapy, Ali was hospitalized two times. The first time this was coercive treatment. The second time, at the end of the course of music therapy, Ali

was hospitalized on a voluntary basis, where he was permitted to attend music therapy as an outpatient during his hospitalization.

Results from Thematic Analysis

Figure 1 gives an overview of the themes that were identified in the thematic analysis. Two overarching main themes were found, the first captures processes of affect regulation and the second captures the finding that the patient's relationship to music was important for affect regulation to happen. Four subthemes are presented – they serve as parallel subthemes, each with their own subcategories.

Figure 1. Themes of Analysis in the Case Study.



The figure displays two main themes. Main theme 1, *Musical interaction as co-regulation,* describes the inherent communicative aspect in musical interaction and co-regulation. The musical interaction gives the patient, who struggles with affect regulation, an alternative way to express himself and communicate. Here, the music therapist uses the music to tune in to the patient's state and, through musical interventions, helps the patient to regulate himself.

Main theme 2, *Music as a creative (re)source*, expresses both the patient's personal relationship to and personal resources regarding music and places the regulation processes in a larger context.

Subtheme A: Musical Intervention Serves as a Regulation Tool.

This theme describes how the music therapists' musical interventions provided a musical structure that the patient could use to lean into musically, and thereby calm down and get out of high arousal states, which were intertwined with negative affective states.

> Then, gradually, I play slower and slower on the bass. Ali follows me and soon we are playing in a common calm rhythm.

Down-regulating through matching, grounding and holding

Down regulating Ali's hyperarousal states took place in the shared musical improvisation, through matching, grounding and holding, which are all improvisation techniques. In *matching* the music therapist matches the patient's musical expression through playing in the same style and with the same musical qualities as in the patient's music (Wigram, 2004).

The narratives describe how the music therapist matches the speed and intensity of Ali's music. In the context of the narrative, this took place when Ali was highly activated and it was not possible to reach him through verbal communication.

> I join him; following the melodies, matching the speed and the intensity of Ali's music.

Matching his expression musically is interpreted here as creating a bridge to Ali's attention and creating a connection with him.

Grounding is a technique where the therapist uses musical parameters such as beat and pulse as an anchor for the patient's musical expression (Wigram, 2004). This is seen in the extract from the narrative below.

> We play together. There is a lack of pulse in the music and it is hard to find a common ground. I play a bass tone in a 5/4 beat, knowing that this rhythm comes easy to Ali. Ali then breaks out from his own melodies and plays freely over this rhythm. We play in the same pulse, and the music increases in intensity.

The choice of instrument is seen as helpful in grounding. The bass creates a rhythmical ground for Ali's musical expression. Furthermore, the electric bass with its deep sound and vibrations that can be felt physically in the body, as well as the bass' natural role as an instrument that supports a musical expression of a guitar, provide structure and a ground for musical expression.

> Ali is playing some familiar tunes in a kind of 5/4 beat. I play one deep note on the bass in this same rhythmic figure. Ali begins to improvise freely over the bass note. The joint improvisation becomes increasingly intensive and intricate.

Holding is a technique that aims to create a container for the patient's musical and emotional expression (Wigram, 2004). It is a way for the therapist to acknowledge the

patient's inner state and also a way to show, through musical parameters, that one can contain the patient's way of expressing him/herself.

> Ali plays one of his melodies in a rapid tempo. We've played these before. I join him. Play the fast tones in the furious, chaotic style Ali is playing. Then I start to slow the tempo down, playing deep, steady bass tones as only a bass can.

The music therapist uses the bass to create a lullaby-like cradling style supporting Ali's musical expression; this is interpreted as holding.

> Ali plays faster and faster. I start repeating two of the bass tones at a slower tempo, back and forth in a rocking form. Ali slows down the tempo, too ...

Non-regulatory musical interventions

In the analysis, musical interventions that did not have an affect regulating effect were also detected. At one point, the music therapist started to play a 12-bar blues progression.

> I begin to feel tired of playing in unknown musical styles and start to play a 12-bar blues. Ali bends forward. Narrows his eyes and listens. He starts to play his guitar. His playing does not match my tempo. I continue to play a steady 4/4 beat blues progression. Ali adds triplets to his playing, plays in Arabic scales and outside of the 4/4 beat. I do not follow him in the music. Ali stops playing. He says that it's too difficult to play.

Here, the music therapist proposes her own well-known framework to regulate herself, but it does not match the musical expectations of the patient, who interrupts the musical interplay.

Subtheme B: A Process from Regulation to Relationship

Several and repeated episodes of affect regulation took place, and musical co-regulation became a part of the way the therapist and the patient attuned to each other. We interpret that these emerging co-regulation patterns seemed to develop into a relationship.

Repetitive musical regulations form a relationship

The regulation-focused musical interactions described in subtheme A were integrated in the relational patterns that developed during the (two sessions) of the music therapy course. The analysis describes how the music therapist and the patient developed musical strategies to attune to each other – when Ali's state is challenging. Here, humming melodies together while (trying to) play them on instruments is a strategy:

> I'm humming what I play on the bass. Ali hums with me. He goes in and out of playing rhythmically. We continue humming and trying to play together.

While the therapist and patient interact through musical play, they find a way to communicate. Ali refers to this as "our own rhythm" which could be interpreted as a musical metaphor for the relationship that has developed.

> After the music therapy session, Ali talks about the session. He says "although you and I play differently, we now know how to get back together. It is as if we have our own rhythm."

Safety and regulation

Through establishing regulatory interaction patterns, a sense of safety may have arisen in Ali. We interpret that Ali recognizes that a relationship has developed between the

therapist and himself and wishes for this relationship to continue. He describes creating safety as a process that takes time:

> Ali says, “we needed to do some communication together, really. It is like this when you meet new people. It takes time to present yourself to another person and to become safe. I hope you can continue to work here.”

Verbalizing feelings at play

In this subtheme, we describe how feelings coming into play are interpreted and verbalized by the patient. This often occurs as an integrated part of the musical interplay.

> Then Ali says, “The first melody is a little sad, but then it gets an answer.” Ali plays a new melody on his guitar. This one sounds less sad. I mirror the melody on the bass, though with fewer notes. Ali then says: “that’s just the way it is,” and I answer “yes, that’s just the way it is.” In the musical interaction, we both follow a movement from low-pitched tones to some high-pitch tones and Ali says “yes, it's true.” Then we both play a wave-like motion, and rhythm and dynamics are synchronized in the musical interaction. Ali then suddenly begins to play rapid melodies, on the verge of chaos, but still in interaction with me. I play a few low-pitched bass tones to his playing. When the intensity subsides, Ali says “now he told everything at once!”

In the example above, one can see how verbal and non-verbal communication are intertwined. This was seen as a significant event in the data material where co-regulation on an affective level led to a more conscious way of interacting at a higher cognitive level - where Ali explicitly related the musical interaction to his feelings.

Ali’s way of using his music to express and verbalize his emotions can also be seen as an emerging self-regulatory act, where he, through verbalization and music, plays the role of the one expressing sadness and the one who recognizes this: *“The first melody is a little sad, but then it gets an answer… that’s just the way it is.”*

Subtheme C: Musical Self-Agency.

Musical self-agency describes the way Ali uses the music to empower himself and how music can have a positive role in the patient’s life which he can benefit from in therapy.

The patient’s ownership of their music

The music that Ali’s music therapy is built on is from Ali’s own culture, and it often consists of melodies that he has composed himself. The music therapist is invited into his musical world and invited to intervene here. In many ways, he takes ownership of the content in his music therapy.

Ali describes several times how music has had a role in his life from an early age. He plays mostly in the Arabic music style of his home country and tells stories and anecdotes from his life associated with the music he plays.

> While we are improvising, Ali starts singing folk tunes from his homeland. His song voice blends in with my playing. I follow his notes. Ali tells me that the folk tune he’s singing is a poem - that he belongs to an ethnic group that has lost their country, language and culture. And that music became a secret language in which they could speak and remember their country.

Ali describes how music is something comforting for him:

> Ali then says that he uses the music to “comfort himself.” That he often plays; “just fooling

> around on the guitar and then it becomes music."

Ali's expertise regarding music is related to his cultural background and homeland and to his own relationship to music - which involved using music to comfort himself. Ali's ownership and expertise are interpreted as increasing the ability to use music as a medium for affect regulation.

Music, mastery and joy

Ali knows he is a skilled guitarist and musician. This is something he shows pride in and wants to share with the music therapist.

> Ali wants to show me a song he has recorded on his cell phone. He says he surprised himself when he made this tune and that "it's a fine Arabic tune."

To share his music also seems to be a joyful activity for Ali.

> Ali wants us to play a melody he's composed, He says "try to do the same as me." Ali alternates between explaining with words what to play and showing it on his guitar. I say, "it's complicated stuff you teach me!" Ali responds "yeah, I'm teaching you a really good rhythm. You and I can play it together and jam together in different ways over it... I was really surprised by myself! I showed it to a friend and he was laughing like he was shocked about how good it is!" Ali smiles when I succeed in playing his melody.

In these examples, Ali shows positive affect such as joy and mastery, and a wish to share this with the music therapist.

Subtheme D: Music Therapy as an Experimental Playground.

The analysis detected a theme that was related to control and loss of control. It was built on a musical improvisation that explored roles. It was related to creativity and exploration in the music playing and the relationship between therapist and patient, and, at the same time, related to an exploration of and exposure to levels of control and power. Here, music therapy can be seen as an experimental playground where issues of control and loss of control can be played out in the musical interaction. The theme was named music therapy as an *experimental playground* – where recognition of how issues of control are addressed in play therapy with children reflects the theme title. One can see these music therapy sessions as age-appropriate (musical) play therapy.

Control and loss of control at play

The analysis reveals that dynamics of control and loss of control are played out in music therapy. The therapist and the patient mostly play music from the patient's "home court," where his musicality and cultural background are in play. This creates an opportunity to explore degrees of control and loss of control, and the exploration of different roles to play. We interpret that Ali plays the role of teacher as well as a dominating role. In the dominating role, Ali commands and controls what the music therapist plays. In the example below, the number Ali is referring to is the frets on the bass that the music therapist is playing.

> Ali says: "3 .... 7 ... 2. 2, 3 and 7! 7!" I ask "should I play it now?" Ali responds by saying "play 1..2..3..and 7!"

> Ali says "12, 11, 7, 8, 3 and 2." I try to follow Ali's instructions, I say "does this sound correct?" Ali answers "just try! Try to go to 5 ... to 7 ... to 8, back to 7, 5, 1!"

The dominating role is closely linked to the role of teacher. What separates the roles, however, is the relational and dialogical aspect. In the role of a teacher, Ali is perceived as attuning more to the therapist, being more attentive to the relationship. The following example illustrates this:

> Ali stops playing. He explains the structure of the melody. His explanations appear to me to be somewhat incoherent; I cannot quite capture what he means. He tries to get me to play a rhythm. I try to grasp it without succeeding. I say this out loud; "I'm trying to catch your rhythm, but it's hard.". Ali then makes his voice softer and says "then I play here, and you can freestyle." I interpret freestyling as an opportunity to take a solo role and improvise freely over our interaction. Ali responds with "there you have it!" He then says "You see. I'm helping you."

The example illustrates not only that Ali takes the role of teacher, but also that the music therapist takes the role of student. This creates room for the patient to lead the musical expression and at the same time explore being in the role of a helper, which also points to some of his inner resources enabling him to tune in and show empathy.

Pendulation between control and lack of control

Ali is in control of the genre and the Arabic scales he and the music therapist are playing. From this position of control, Ali explores different degrees of control as mentioned above. This is found to be a positive mechanism, when linked to the role of teacher, as well as negative, when linked to a dominant role. The narratives show that the shift in the degree of control often happens fast. In the first example, it is shown how Ali and the music therapist attune in a joint interaction, until Ali takes control of the interaction again.

> I start repeating two of the bass tones at a slower tempo, back and forth in a rocking form. Ali slows down the tempo too … Then, at the same time, we start playing the melody again, this time slowly and in a common pulse. He goes from the melody to improvising. Ali says "I do not know what I'm doing," I comment that it sounds good. Ali responds by saying "I will try to follow you, if you continue to play, I will end up with your melodies automatically." Then, abruptly, Ali starts to instruct the interaction again "you go to 7, then down to 6… good!"

In the example above, Ali's statement that "I do not know what I'm doing" can be linked to a loss of control, where he has relinquished inhabiting a controlling role. The example then shows how he goes on to instruct the interaction and moves back to having a controlling role again.

Pendulation through degrees of control and loss of control can be seen as an approach to activating some of Ali's relational trauma issues. To change between being in control and loss of control can be seen as a way to expose Ali to aspects of his relational traumas, where the same dynamics are activated. Through music and play, one could argue that this could give Ali a safer way to explore this dynamic in therapeutic settings. In allowing the patient to be in control, the patient allows himself to let go of some of his need of control.

Discussion

This case study elaborates on the question of how music therapy contributes to affect regulation in a case of a patient with trauma. In the discussion the two main themes and four subthemes regarding affect regulation in this case study will be linked to concepts from trauma theory and music therapy literature. Furthermore, the role of music for the

music therapist working in the field of trauma treatment with psychiatric patients will be discussed, specifically related to intercultural meetings. Finally, a critical evaluation of the method will be carried out, and clinical and research perspectives will be provided.

Musical Interaction as Co-Regulation

Main theme 1, *Musical interaction as co-regulation,* describes matching, grounding and holding as down-regulating clinical improvisation techniques.

Stern (2010) has pointed out that Wigram (2004)'s description of *matching* is reminiscent of the affective tuning process that takes place between infants and caregivers. This also relates to Schore's (1994) description of how a therapist must act as an affect regulator for the patient in their dysregulated state, in order for the patient to develop self-regulating mechanisms. Furthermore, tuning in to the patient's state is also mentioned as an important tool for regulating the patient within the window of tolerance (Nordanger & Braarud, 2014; Siegel, 2012). One could speculate that when trying to match the patient's expression of hyperarousal solely using verbal language as in standard psychotherapy, the patient and therapist would talk rapidly and at the same time. The benefits of music therapy interaction are that the therapist can play with the patient simultaneously, synchronizing with one or more elements of the patient's communication, such as tempo, sound quality, dynamics and vitality, and then gradually change and slow the tempo to regulate the patient out of their hyperaroused state, in a process called entrainment (Schneck & Berger, 2006).

Likewise, it is described how the music therapist makes contact with Ali by matching his musical expression when he doesn't respond to verbal interventions. Porges (2010) describes how a hyper- or hypoactivated person may have difficulty perceiving the human voice. Porges points out that the neurological structure of music creates a way to activate a person's social engagement system and creates an optimal way of regulating. MacLean's (1990) triune brain model also has a neurological approach. Using his theory, Hart (2017) argues that music can activate, communicate and regulate on different neurological levels. In this case, the music therapist first regulates activation on the *survival brain* level, where she matches and synchronizes with Ali and then regulates his level of activation down. Saarikallio (2019) states that music allows access to affective embodiment - and emphasizes the ability of music to access the embodied, unconscious levels of experience.

Creating a sense of security is described as important when working with traumatized patients (Bath, 2015; Herman, 1997; van der Kolk, 2005). In subtheme B, Ali himself describes the need for communication in order to feel safe. Safety is defined as a goal in several of the articles on music therapy in trauma treatment. In the Carr et al. (2012) study, creating security to make interaction possible is one of the main goals. In the Bensimon et al. (2012) study, security is about regaining control in trauma processing through exposure, and in Orth (2005), security is described as an important factor for the patient's self-expression. Orth (2005) describes how music therapy can be a safe way to express emotions, as the emotional outbursts can be integrated into the music. In his article, he describes how an improvisation based on instrumental music combined with talking/singing could be an expression of the patient's emotional state and makes it easier for the patient to verbalize their inner state. This resonates with the subtheme *Verbalizing feelings at play,* in subtheme B. The technique described by Orth (2005) has several similarities to Austin's (2002) descriptions of different *holding* techniques for recreating early forms of regulative interactions, for example playing two alternating chords to establish a ground for vocal improvisation. This corresponds with the finding in this study, where two alternating bass lines are used to establish holding, which resembles "adult cradling." Orth (2005) mentions that musical structures help to create security. This is echoed in Porges' (2010) view on how music and especially melody can promote a neuro-

perception of security in a music therapy interaction. Saarikallio (2019) writes about music as a way to bring non-verbal levels of experience into dialogue with conscious reflection and meaning making. Saarikallio further stresses that musical experiences are deeply personal, and, at the same time, they allow for reflection and self-distancing. Furthermore, she states that musical affect regulation can be strategies and mechanisms that either focus on embodiment or reflection. Saarikallio's theories resemble findings in this study and in particular how affect regulation is both an embodied co-regulatory process and a self-reflective process.

Music as a Creative (Re)Source

Subtheme C refers to how music can promote self-agency. *Self-agency* is linked to the feeling of being in charge of one's own life (Skårderud, 2016). It is about a *sense of self* (Stern, 2004) and the formation of an identity. It contributes to ownership and responsibility for our own actions and choices, so that we are not just victims of "what is happening." Saarikallio (2019) proposes that self-agency is a component that underlies self-regulating mechanisms in music through allowing the client to actively participate and feel ownership of their experiences.

Van der Kolk (2005) highlights joyful activities as important in trauma treatment. Here, mastery and joy are key words in counteracting trauma reactions. Music is something that Ali enjoys and masters. It is conceivable that being allowed to interact with another human being based on an activity that gives a feeling of mastery helps to create a safer reason to engage in interaction with another - and promotes positive emotions in relational settings. As Marik & Stegemann (2016) describe, music and affect regulation are context dependent - and it is advisable to have a person-centered approach in music therapy. Here it is conceivable that the music Ali chooses to play is something that gives him a sense of security and thus strengthens his ability to participate in regulatory interaction. As Amir (2004) describes, playing music one feels confident about can promote a sense of safety that creates a platform for engaging in improvisational interaction. This may also be the case in Ali's descriptions of the music he makes himself, which gives him comfort and a way to express emotions. Ahonen & Desideri (2014) link the ability to express one's cultural identity to re-integrating sides of one's personality. By playing and speaking about the music and culture Ali had grown up with, he also gives the therapist insight into aspects of his personality that may not become apparent in the same way in another form of therapy. This is seen, for example, when he talks about the folk group he belongs to and how people have used music as a secret language - one could speculate whether Ali has experienced his music as a secret language, which also helped him survive even in extreme situations?

When a person has experienced traumatic events, loss of control and helplessness are part of this experience (Hermann, 1997). Regaining a sense of control can be important in processing a traumatic event. However, the need to be in control can also bring the risk of becoming dominant and rigid (Hart, 2012). Control and loss of control are the topic of several articles on music trauma therapy. Bensimon et al. (2008, 2012) describe how regaining control is important for the group participants in their study. Here, regaining a degree of control in music therapy is linked to being able to gradually take more control in one's own life. Amir (2004) describes how control can be released when one gradually feels more secure in music therapy. Auf der Heyde (2012) links control themes to the window of tolerance model. According to Auf der Heyde, taking a leadership role can occur both inside the window of tolerance and "in the window frame," when one is on the way out of the window of tolerance towards hyperactivation. When taking a leading role inside the window of tolerance, the leader attunes to the co-player and the interplay has a variety of expressions. This description resembles the teaching role found in the thematic

analysis regarding Ali's taking a "teacher role." Auf der Heyde also describes a leadership role characterized by controlling leadership, tension and contrast in the musical interplay. This role is described as reflecting on an inner state where one is in the "window frame." This has many similarities to Ali's "dominant role." The need for control in the musical interaction may indicate that Ali is dysregulated and therefore may need to take a controlling role to regulate himself down and to be able to interact.

The Therapist's Self-Regulation Competence

In subtheme A, a theme called "non-regulatory musical interventions" is described. Here, it is speculated that the music therapist began to play a 12-bar blues progression to regulate herself which resulted in Ali stopping his playing. Working with individuals with regulation difficulties can be challenging. Regulation processes take place in an interaction, and it is easy (and very human) to move outside of one's own window of tolerance in interplay with a person who is hyper- or hypoactivated. To regulate a child, one needs a regulated adult, as Braarud and Nordanger (2011) state; this can be adjusted slightly to mean that to regulate the client one needs a regulated music therapist. Furthermore, Braarud & Nordanger write that the expertise required by the professionals working with persons with affective dysregulation is to have a reflective and conscious relationship to one's own window of tolerance - and what triggers dysregulation.

Charlotte Lindvang, PhD in music therapy (2017), emphasizes that music therapists tend to have a strong emotional relationship to music, and that, in the educational program as music therapist, one should be trained in self-reflecting and mentalizing as to one's own relationship to music, in order to move towards being a therapist. Furthermore, one should be aware of which music seems to have an affect regulating effect on oneself, and which music seems to have a dysregulating effect. Lindvang points out that in training as a therapist one must develop mental stability and resilience, so that later one will be able to attune to the patient, maintain grounding and regulate turbulent therapeutic issues. In the blues interaction described above, one could say that the music therapist moved outside her window of tolerance and used the music she herself found regulatory to help her self-regulate, at the cost of *mismatching* and not attuning to Ali, which resulted in him interrupting the interaction. Here, it should be pointed out that the goal of music therapy is not that one should avoid having incorrect reconciliations or that the music therapist is always inside her window of tolerance. Hart (2012) emphasizes that interplay in limbic, emotional structures also means mismatches and repairs of these - and that the therapeutic effect lies in these reparations (Hart, 2012; Hart, 2017; Stern, 2010). An important component is therefore for the therapist to have well-developed regulative competence to be self-reflective regarding this, and that "non-regulatory musical interventions" are part of affect regulation processes.

Intercultural Meetings and Affect Regulation

Ali's case was complex, with a history of severe trauma and multiple psychiatric diagnoses, but an important aspect of his case was also the intercultural meeting between therapist and patient, as the patient had a background from an Arab country. The patient was educated in music, and composed and improvised in a musical style from his country of origin, while the therapist was Norwegian with a classical music background, and comfortable with modern Western music styles. The way the therapist met the patient musically, with intercultural sensitivity, can be said to have created a door to affect regulation.

Regarding affect regulation in a multicultural context, there can be different ways of expressing and conceptualizing musical emotions in different cultures. This is already the

case within different Western musical styles, for example an expression of anger will sound very different in opera and country styles, so when it comes to a musical style unfamiliar to the music therapist, this demands a well-developed intercultural musical sensitivity and also a willingness to study and learn about other types of music, outside and inside of the therapy room. One could also speculate if the management of emotions differs between cultures, for example regarding appropriateness of expressing specific feelings, even with therapists. Both authors have observed in clinical settings that persons from Middle Eastern countries often express their emotions verbally with the use of poetic language and metaphors. This way of expression seems to be close to the musical expression of emotions, as seen in Ali's own words about his relationship to music. Here he describes music as "an ongoing story about my life" and that "music is my feelings."

Micro-Regulation in a Context

Music therapy affect regulation has been described as a micro-regulation process building on an inborn communicative musicality (Hart, 2017), and the interpretation of data has been carried out in a framework of intersubjectivity theory. However, it is important to realize that micro-regulation processes are situated in a context, both in terms of the framework for the therapy session such as time, place and session structure (which Hart (2017) calls macro-regulation), and a wider societal or even international context (Pavlicevic & Ansdell, 2009). In this case study, the institutional context of the psychiatric outpatient ward provides the framework for the intercultural negotiation between a young Norwegian female therapist and a male patient in his 30's with roots in an Arab culture. Power dynamics is one of the issues that comes to mind when taking into consideration the broader perspective of the systems surrounding the therapy. In this case, the music therapist has a position in society as well as the authority that comes with her professional role, whereas the patient is marginalized, and seemingly in a powerless situation. It is an ethical consideration to bear in mind that the therapy setting is part of a larger community and constitutes a negotiation of different life worlds. Taking this theme further to a discussion of music therapy models, we think that different music therapy models emphasize micro processes and macro processes differently. In the psychodynamic music therapy model, the micro processes of dyadic regulation have a more distinct focus (Pedersen et al., 2022), whereas in community music therapy models, the discussion of agency and empowerment in society is more in the foreground (Stige, 2002). We think that consideration of both dimensions is important when working with the patient and in supervision, and when researching and analyzing a clinical case.

Sensitivity when working with different cultural frameworks might be particularly important when meeting patients with diverse cultural backgrounds, such as in this case; patients who are vulnerable and might feel disempowered by their lack of familiarity with national laws and systems, let alone the workings of health systems and sources of support. Thus, therapy takes place in a complex ecological system, where the agency of the client is emphasized (Stige, 2002), and the micro regulation processes of the therapist are important for communication of support and empathy, as well as for affect regulation.

Evaluation of the Analysis Method

This study is formed as an abductive explanatory case study. Theories on communicative musicality and embodied regulation in trauma treatment were seen through an "affective regulative lens" following Schore's description of affect regulation as nonverbal co-regulation (Schore, 1994). An explanatory study is defined to both generate new concepts and theory formation. In this case we have identified and defined concepts and themes

related to affect regulation, whereas core theory building might be a result of further investigation with more data.

Evaluating the trustworthiness of a qualitative study can be said to be strengthened by the transparency provided by the presentation of quotations as part of the analysis. The music therapist in the case study is also the first author of the article. The first author, therefore, is presented in the data material, in the analysis process and as an article author. This can be said to be positive, in the way that the data material is viewed and interpreted from several angles, both through knowledge from her embodied presence in the situation and her memory of the process, and through analysis and reflection on the process from a research point of view. From a more critical perspective, it is important to consider aspects of bias related to having double roles. Here, it is conceivable that aspects of the data material were lost in the analysis process, while simultaneously being a co-player in the musical interactions. The second author viewed the data from an outside perspective, and in cooperation between both authors all the themes were discussed and refined in an iterative process going back and forth between raw data and themes. All the themes were refined and made more distinct from each other in this process. This served as a triangulation, and increased the quality of the study.

Research Perspectives

The case study analyzed transcriptions of audio tapes; however, it would have been interesting to be able to use microanalysis of video material in order to describe and conceptualize affect regulation in further detail and with more precision. Affect regulation with a psychiatric patient who has experienced significant trauma participating in an intercultural music therapy meeting has been complex and it could be interesting to investigate affect regulation in other contexts and with other populations as well.

Clinical Implications

We believe that findings from this study can be used by other music therapists in several ways. Firstly, to detect musical interventions that serve as regulation for dysregulated patients. Secondly, to create an awareness of how music therapy interaction can facilitate processes of affect regulation, and how it can affect dysregulation in both the therapist and in the patient.

Music therapists in the mental health field often work in interdisciplinary teams. To have a language for explaining how one can work in music therapy with patients struggling with affect regulation issues, explained by theories common for health professionals working with this population, such as the Window of Tolerance model, is seen as advantageous.

Conclusion

Music therapy interaction through improvised interplay was found to be a way to establish affect regulation with a man with complex post-traumatic stress disorder, who could not engage in verbal therapy because of frequent episodes of hyperactivation. A thematic analysis demonstrated that music therapy facilitated musical interaction as co-regulation and had a down-regulating effect on the patient. Further, the analysis shows that music therapy could be a creative source for playfulness and exploration of issues concerning trauma, as well as promoting self-agency.

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