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ARTICLE

The impact of group music therapy for individuals with eating disorders

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ABSTRACT

This mixed-methods study examined the impact of group music therapy upon individuals receiving inpatient treatment for eating disorders. There was a total of 21 participants ranging between the ages of 16 and 58. Participants' lived experiences of music therapy, including music's effects on mood and emotion regulation, were explored. Data collected through the "PANAS" (Positive and Negative Affect Scale) (Watson et al., 1988), and subscales of the "DERS" (Difficulties in Emotion Regulation Scale) (Gratz & Roemer, 2004), and "ERQ" (Emotion Regulation Questionnaire) (Gross & John, 2003), demonstrated that participants experienced a decrease in negative affect, as well as an increased ability to express emotion after participating in music therapy. Data collected through audio recordings and transcriptions of music therapy and focus group sessions suggested that, through creating and playing music together, participants discovered music's ability to represent various aspects of themselves and their recovery journeys, music's potential to support them to externalise, shift, and stay with emotions, and music's capacity to foster social connection.

KEYWORDS

music therapy,
eating disorder,
improvisation,
emotion regulation,
mixed methods

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INTRODUCTION

Approximately one million Canadians are diagnosed with an eating disorder (NIED, 2020a). Incidence rates globally are mainly based on registered inpatient and outpatient cases and as many eating disorders go unreported, it is hard to obtain accurate global data (Hoek, 2016). According to Erskine et al. (2016), anorexia nervosa and bulimia nervosa ranked twelfth in the leading cause of disability-adjusted life years in females aged 15-19 years in high-income countries in the 2013 Global Burden of Disease Study (GBD). The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) presents diagnostic criteria for six feeding and eating disorders, including pica, rumination disorder, avoidant/restrictive food intake disorder, anorexia nervosa, bulimia nervosa, and binge-eating disorder (American Psychiatric Association, 2013). Treatment for these disorders often includes nutritional restoration and maintenance, behavioural therapies, and psychotherapy (Treasure, 2016). Creative arts therapies, including music, dance, drama, and art therapy, are also used frequently, supported by research that affirms their "non-threatening" nature, as well as their ability to help clients "identify feelings and integrate new insights into utilizing positive ways of coping" (Heiderscheit, 2016, p. 20). Music therapy for individuals with eating disorders aims to facilitate the identification, regulation, and expression of emotions, and offer support through the development of musical and therapeutic relationships (Bauer, 2010; Bibb et al., 2015; Bobilin, 2008; Heiderscheit, 2008; Hilliard, 2001; Justice, 1994; Lejonclou & Trondalen, 2009; McFerran, 2005; Nolan, 1989; Pasiali et al., 2020; Pavlakou, 2009; Shuman et al., 2016; Trondalen, 2003, 2016a, 2016b; Trondalen & Skårderud, 2007).

This study explores the use of group music therapy, largely improvisation-based, within an inpatient eating disorders treatment setting.

LITERATURE REVIEW

Eating disorders develop due to a combination of biological, psychological, and socio-cultural factors (NIED, 2020b; Palmer, 2015; Treasure, 2016). People of all ages, genders, and backgrounds can develop and be affected by eating disorders (NIED, 2020a) and comorbidity with other psychiatric illnesses is common for individuals with eating disorders (Gadalla & Piran, 2009; Meng & D'Arcy, 2015; Perez et al., 2004; Piran & Gandalla, 2006; Reel, 2018; Treasure, 2016).

Eating disorders are severe mental illnesses that are characterised by controlling thought patterns and behaviours and often involve rigid rules about food (Antony & Swinson, 2009). These behaviours both contribute to and are fuelled by low self-esteem and self-worth (Trondalen, 2016a), and as the illness worsens, the eating disorder in fact "controls the person" (Loth, 2016, p. 301). Personality traits such as perfectionism and cognitive rigidity also increase the risk of developing an eating disorder (Treasure, 2016). Though eating disorders are separated according to symptomatology in the DSM-5, it is important to note that there is significant overlap between each diagnostic category and associated behaviours. We recognise that each individual has their own complex and fluid etiology and symptomatology (Treasure et al., 2010).

People with eating disorders often have difficulties in regulating emotions, demonstrating either high levels of emotional control, that is, "[inhibition of] their response to an emotional state," or in contrast, impulsivity, "engag[ing] in a behaviour prematurely" (Van Blyderveen et al., 2016, p. 77). Emotion regulation refers to the control that "individuals exert … over their emotions, using a wide range of strategies to influence which emotions they have and when they have them" (Gross & John, 2003, p. 348). The association between emotion regulation and eating behaviours is well-documented (Corstorphine et al., 2007; Engel et al., 2005; St-Hilaire et al., 2017; Tchanturia et al., 2004; Van Blyderveen et al., 2016). Emotion regulation and responses to food are connected; Van Blyderveen and her colleagues noted that individuals high in emotional suppression are at risk for dietary restriction whereas individuals high in impulsivity are at risk of increased caloric intake. Individuals with bulimia nervosa (BN), or the bingeing/purging subtype of anorexia nervosa (AN), tend to have higher levels of impulsivity than individuals with AN restricting subtype (Engel et al., 2005), and individuals with AN have higher levels of cognitive rigidity than individuals with BN (Tchanturia et al., 2004).

The research cited above influenced our decision to examine music therapy's impact on emotion regulation. We recognised that our clients demonstrated behaviours along the spectrum of impulsivity to restriction, and that music, particularly musical improvisation, can provide experiences anywhere along the related continuum of structure to freedom. A growing body of research suggests that music therapy has important clinical implications for individuals with eating disorders. Trondalen (2016b) proposes that music therapy is "a *life giving* condition" (p. 32, emphasis in original) in opposition to the eating disorder itself. Musical improvisation offers a unique opportunity to clients with eating disorders to recognise and connect with their emotions, providing "a physical manifestation of one's emotions and thoughts as they flow through time" (Bobilin, 2008, p. 145). Music's ability to elicit emotions—present in any context—is significant here given that many people with eating disorders display alexithymia, described as an inability to identify/describe emotions and differentiate between feelings and body sensations (Nowakowski et al., 2013; Trondalen & Skårderud, 2007). Improvisation allows individuals to "acknowledge their presence physically by playing an instrument" (Trondalen, 2016a, p. 109), using their bodies in meaningful and non-harmful ways whilst expressing themselves and interacting with others.

Musical improvisation can also address emotional control, rigidity, and impulsivity, as it requires flexibility and control (Heiderscheit, 2008; Lee, 2015). For example, a client's issues of emotional control may be exhibited within a musical improvisation through rigid playing or imitation of the therapist (Pasiali et. al., 2020). Heiderscheit (2008) comments that "the flexibility of music as a therapeutic agent allows the therapist to individualize the process and also meet a wide variety of needs simultaneously" especially when "feelings and emotions may be fragmented, elusive, and inaccessible to language" (p.128). Research examining the neuroscience of creativity highlights the relationship between engagement in musical improvisation and the "arousal of subcortical areas and neural networks that stimulate action and inhibit self-monitoring" (Tomaino, 2013, p. 85). This has significance for individuals with eating disorders and their accompanying psychological self-monitoring tendencies including "perfectionism, a sense of inadequacy, low self-esteem, hypersensitivity to criticism, and difficulty identifying and expressing emotions" (Reel, 2018, p. 34), all of which can render improvisation particularly challenging and also clinically relevant. In her study examining group singing for people with eating disorders, Pavlakou (2009) recommended facilitating

group singing as a structured musical experience while building rapport, given her participants' struggles with issues of control. Similarly, Bibb and McFerran (2018) examined the role of group singing in mental health recovery and found that group singing was helpful in providing participants with both intra- and interpersonal resources and promoting healthy relationships with music. Recognising the challenges associated with improvisation for clients with eating disorders, we intentionally included some structured musical experiences within sessions, including group singing, while we also pointedly examined the potential benefits of improvisation, grounded in the research cited above.

METHODOLOGY

This study's design allowed for participants[1] to guide the direction of the research as much as possible. Specifically, we wanted to discover:

1. What are the lived experiences of participants with eating disorders in group music therapy?
2. In what ways, if any, do participants' moods and emotion regulation behaviours change during participation in music therapy?

We combined a phenomenological approach with a concurrent triangulation mixed methods design (Creswell, 2007). Our study implemented a convergent parallel single-study design (Bradt et al., 2013) in which both quantitative and qualitative data were collected concurrently with equal emphasis, then integrated after separate analysis, allowing us to examine their points of intersection and distinctions. Phenomenological research, which embodies an interpretivist epistemology, seeks to understand "the meanings that emerge as individuals experience phenomena in their everyday lives" (Hiller, 2016, p. 109). Our non-positivist and constructivist perspective on research aligns with the humanistic, resource-oriented, and music-centred approach to music therapy used within these sessions (Aigen, 2014; Rogers, 1961; Rolvsjord, 2010).

Research setting

This study was approved by the Research Ethics Boards both at Wilfrid Laurier University and the facility at which this study was conducted. This research was conducted at a mental health and addictions facility in Southwestern Ontario, Canada. Patients within the 21-bed eating disorders program receive largely group-based treatment from an interdisciplinary team, with psychoeducation and psychotherapy sessions based upon dialectical behaviour and cognitive behavioural therapy models. In addition, patients participate in creative arts programming along with recreation, horticultural, and music therapies. All of these therapies are undertaken in group settings, allowing more patients to access services and aligning with the facility's overall treatment philosophy.

[1] We will be using the terms "patients" and "participants" interchangeably throughout this paper. Though it is commonplace in our field to refer to those with whom we work as our "clients", the term "patients" is used most often at the facility at which this research was conducted, by both staff members and service users alike.

Music therapy group sessions are offered once per week for individuals in the eating disorders program. The sessions included in this research involved a combination of improvisation, singing, drumming, listening back to recorded group improvisations and responding through visual art, and mindfulness-based exercises.

Improvisations were either referential or non-referential. Referential improvisations typically involved expressing and shifting between different emotions or images. For example, in an improvisation based upon the image of a storm, participants were invited to use their instruments to evoke the calm before a storm, the peak or intensity of the storm, and finally, the calm after the storm. In "Emotion-Shift" improvisations, participants chose a challenging emotion to begin with and a desired emotion to gradually transition to, through the improvised music. In an improvisation titled "I Was, I Am, I Will Be" (Payne, 1995), group members began by brainstorming words to complete each of the title phrases, based upon their own experiences. These words were written down on the whiteboard by the facilitators, and then the group was asked to improvise through each section, using the words as inspiration. The facilitators supported these improvisations by accompanying either on the piano or percussion. In group drumming, patients were taught simple and repetitive rhythms to play together, and then encouraged to explore on their own, creating their own patterns as they felt comfortable within the overall structure of a consistent steady beat. In group singing, patients often selected a meaningful song for the group to sing together.

Music therapy sessions were co-facilitated by four Master of Music Therapy students; two students—including this paper's first author, now the facility's music therapist—co-led the first two research groups, and two additional students co-led the third research group. The facility's music therapist at the time of the research—this paper's second author— observed all sessions and provided individual clinical supervision to all students.

Research participants

All patients in the eating disorders program were welcome to attend group music therapy, regardless of whether they wished to participate in this study. The facility's music therapist shared information about the four-week music therapy group to all eating disorder patients during a regularly scheduled weekly meeting. The music therapist explained that participation in the music therapy group was optional, and in addition, that patients could participate in music therapy without participating in the research component. Patients then informed staff members on the unit if they were interested in attending.

There were 21 participants in total, ranging in age from 16 to 58: 20 identified as women, and one identified as a man. Five patients were diagnosed with BN and 16 with AN; of those patients diagnosed with AN, 12 were diagnosed with bingeing/purging subtype and 4 with restricting subtype. The majority of participants were also diagnosed with comorbid psychiatric disorders, including major depressive, bipolar, post-traumatic stress, generalised anxiety, and substance-use disorders. Research participants were split into three separate groups. Each research group was composed of individuals at different stages of treatment and recovery, and with varying familiarity with music therapy. These distinctions undoubtedly led to differences between the groups, though as evidenced by the results, certain experiences were found to be prevalent across the three research groups.

Data collection and analysis

Qualitative data consisted of transcripts of participants' verbal and musical contributions from music therapy and focus group sessions. In total, twelve music therapy sessions—four with each research group—and three focus groups were audio recorded and transcribed for analysis. During focus groups, research participants were asked a series of questions (see Appendix) and listened back to and discussed recordings of group improvisations. Focus groups were chosen as a method of qualitative data collection as opposed to individual interviews because they were deemed to be less intimidating for participants who were primarily familiar with the facilitators in a group format. The focus groups also allowed the facilitators to continue observing group processes, understanding that participants develop their perspectives through engaging with one another (Mwangi & Bettencourt, 2017). In addition, the focus groups provided an opportunity for participants to listen back to group improvisations collectively, fostering connectedness. Focus groups were led by the facility's music therapist and one Master of Music Therapy student.

Interpretative Phenomenological Analysis (IPA) (Smith et al., 2009) was used as a framework for analysis. In IPA, "participants make sense of their experiences and the researcher, in turn, interprets the participants' meaning-making to gain a fuller understanding of the experience" (Ghetti, 2016, p. 776). Topics from transcriptions were grouped into codes using NVivo software. The codes were then grouped to represent emergent themes (Pothoulaki et al., 2012), and finally, recurrent themes relevant to all three research groups were identified.

In addition to qualitative data, three self-reported measures (PANAS, DERS and ERQ) were collected to provide progress measures of emotional state. At times, patients had to miss one of the music therapy sessions due to illness or conflicting appointments. In addition, several patients were unexpectedly discharged early from the program. Thus, though there were 21 participants in total, not every participant filled out every scale. These absences from sessions are reflected in the tables in the Results section.

The Positive and Negative Affect Scale (PANAS; Watson et al., 1988) is a 20-item self-reported measure constructed to assess positive (PA) and negative (NA) affective states. Both the PA and NA scales have high internal reliability, with the coefficient alpha ranging from .86 to .89 on PA and from .84 to .87 on NA across various time frames. In this study, participants were asked to complete the measure based on how they felt at that moment, where the internal consistencies were: PA (α= 0.89) and NA (α=0.85). Participants filled out the PANAS scale before and after each session.

The Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), is a widely used self-reported measure of difficulties in emotion regulation. In this study, participants received only the "difficulties controlling impulses when experiencing negative emotions" subscale, which has good internal consistency (α=0.86). The Emotion Regulation Questionnaire (ERQ; Gross & John, 2003) is a 10-item self-reported scale assessing two strategies one may adopt to regulate emotion: cognitive reappraisal and expressive suppression. Ratings are made on a seven-point Likert Scale. In this study, participants received only the expressive suppression subscale, which has a good reliability (α=0.73) and test-retest reliability (α=0.69).

Participants filled out the ERQ and DERS scales before the first session and after the final session. The results of these scale measurements provided insight into how group music therapy may have impacted participants' self-reported levels of rigidity and impulsivity as well as affect and mood regulation. Data were analysed using IBM SPSS Statistics. Results were described as mean and standard deviation (SD) for emotional state (DERS and ERQ) and affective state (PA and NA). To determine differences in emotional and affective state before and after music therapy, paired t-tests were used. The P value of <0.05 was considered statistically significant.

RESULTS

Qualitative results

Three main themes emerged from the qualitative data analysis: that music may represent various aspects of the self and the recovery journey, that music can support externalising, shifting, and staying with emotions, and that music may foster social connection. These results are summarised in Figure 1 and are explored in the sections that follow.

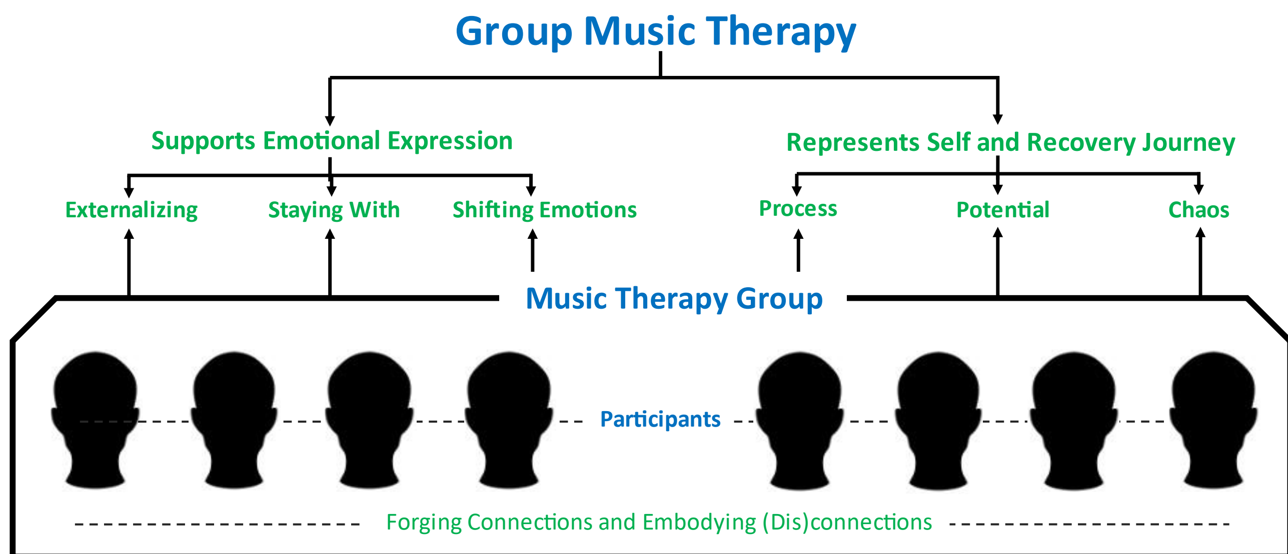

Figure 1: Qualitative results

Music and the recovery journey

Music, in particular improvised music, was seen by participants as representing aspects of themselves and their recovery journeys. We observed that the music often appeared to reflect back to participants the feelings they had about themselves—"this music sounds as my feelings feel" (Ahonen-Eerikäinen, 2007, p. 153)—while also allowing them to view themselves within the wider context of their circumstances and community. This meant that music could contain hopes and visions for potential and wholeness; at other times this meant the music sounded chaotic and stuck.

Music and chaos

Participants often struggled with the unpredictable, and at times messy, nature of group improvisation, perceiving the music to be chaotic and judging themselves for this. Participant (P) 12 recalled, "I could hear some of my instruments and they weren't on time…It felt like chaos to me." Self-criticisms were typically connected with a preoccupation surrounding getting the music "right." P20 commented on the impact of having received prior musical training on her perception of right/wrong notes:

> The first session was really challenging, 'cause I wasn't used to improvising... Whenever I've done music it's always been on [sheet] music. On the first recording I couldn't hear myself. I was specifically playing quiet so that I couldn't hear myself… As the sessions went on I got more comfortable.

P8 reflected on her fear of "play[ing] the wrong note" and shared, "The drum felt less threatening somehow, than the glockenspiel…where you could feel pressure to make a tune." Similarly, P10 shared her worry surrounding the creation of musical ideas: "If I wanted to come up with a rhythm... I had no idea what to do."

Listening back to improvisations was also often challenging, due to participants' self-critical tendencies. P7 reflected, "Listening to [the improvisation] gave me a lot of anxiety, 'cause [my] notes were *so* loud." She shared, "You could hear it boldly. I had a lot of feelings, like I shouldn't have played it." Simply the fact that one's own playing was *audible* was at times enough to prompt self-criticism. P17 remembered, "When I was playing I couldn't really hear myself, but when I heard the recording I felt like…the loudest. I felt a bit of judgement... but, I enjoyed it." Notably, many participants who initially struggled to cope within group improvisations experienced decreased self-judgement over time. P2 appreciated that music therapy provided a "break from perfectionism" and P17 observed a lessening in her own self-criticism: "I've been gaining more confidence in improvising and not being judgmental." P3 recalled, "Making noise is an issue for me… but every session was easier than the one before."

Musical experiences that contained more structure and predictability, such as group drumming, often promoted feelings of safety and comfort. For example, P7 reflected, "I liked when we were all playing the same instruments... like if we were all drumming... It felt safe." On the other hand, several participants found that over time, it became easier to stay with the discomfort inherent in improvisation; participants were able to accept the music's unpredictability and connect the musical process with their unpredictable processes of recovery.

Music, process and potential

Many participants *heard* their own recovery journeys and potential reflected back to them in the music they made and recorded. For example, in listening to one improvisation, P20 initially judged her own playing, but then noted: "It was like chaos at the beginning…In the middle it got a little bit stronger, and then at the end it came together... It just was indicative of the journey that we're all on right now." P16 echoed, "It *was* chaos," at that moment speaking about her past experiences with her eating disorder as reflected in the music. We observed many participants speaking metaphorically in this

way, allowing them to make broader connections between the music, the eating disorder, and their recovery journeys.

Many spoke of the recovery journey as a non-linear process. P6 reflected upon this theme:

> I have this image in my head of an... Eating Disorder [treatment] commercial, like a Viagra commercial. We all blast out the door, frolicking along the property, like, "Yes I'm free!" ... I think there's the notion that when you're discharged, you're cured, and everything's amazing. Through playing this instrument... it was a very subtle change and yet, it's much more peaceful… That's really what recovery is: it's more fluid as opposed to black and white.

P2 also commented on the bumpy nature of recovery. After an improvisation based around the image of a storm, she shared:

> My life has been a storm, but I've been underwater for a long time… The feeling that I had when we were [improvising] is, I'm not underwater, I have skills to ride the waves…It's like living life and expecting that it's gonna be bumpy, instead of being underneath it all the time and not knowing how to get out.

For several patients, music contained the sound of possibilities and a vision for a better future. In listening back to one improvisation, P17 experienced an image of hiking in a jungle. She expanded: "It's tough to get through, 'cause you have to chop down as you go. But it's also really pretty, like, jungles are really beautiful. They're lush, they're green, they're full of wildlife." P17 explained that this image represents what she would "like for [recovery] to be." Like exploring a jungle, she described, recovery as "tough" and as having "beautiful parts – in it, but also at the end of it." P17's image is striking, both in her vision for the beauty possible for her in the future, but also within her insight that though "it's tough to get through," beauty exists along the journey.

Music, emotional expression, and emotional regulation

The second theme that emerged through the qualitative analysis pertained to music's ability to *support* participants in their recovery. Patients identified that music-making acted as a vehicle for emotional expression and a useful medium for shifting away from or staying with difficult emotions.

Expressing and shifting emotions

Co-creating music allowed participants to express emotions and later, through visual art or verbal processing, to better understand these emotions. P2 described music therapy as an "outlet" and shared, "It was my highlight every week for trying to sort through how I was feeling, 'cause I've been going through a lot." P4 reflected on the emotions that surfaced during sessions: "I released the emotions I was suppressing, so I often left more upset than I was when I came, but it was good because then I was able to like, use skills... instead of just keeping it repressed." Though participation in therapy provoked challenging emotions at times, "in the long term it made things better… It enabled me to deal with the sadness instead of not knowing why I felt sad" (P4).

At times, the group explored shifts in emotion and mental states directly through referential improvisations. In one example, P6 chose to explore shifting from "busyness" to "calm" through an improvisation that the group supported her through (see Recording 1 – "Group 1, Session 4, Emotion Shift").[2] At other times, shifts in mood happened unexpectedly. Several participants described feeling "scattered" before entering music therapy, and afterwards feeling more "grounded" or "calm." P16 described, "I'd always go [to music therapy] anxious and tired. And then I'd leave feeling more hopeful and... happier." After a mindfulness experience involving the singing bowl and humming, P13 shared, "I felt really vulnerable and frustrated when I came in… [I'm] a lot more grounded now". P14 stated, "I felt depressed when I came in. And now I feel very comfortable. The [improvisation]... reminds me of how close me and my brother were. It brings really good memories... It was nice, 'cause I kinda needed some sort of pick-me-up". In this instance, imagery and memories evoked by a particular improvisation reconnected P14 to a significant relationship in her life and elevated her mood. Following one activity in which participants drew while listening back to a recording of a group improvisation, P14 drew a crib and explained, "I felt like [the music] was something that you'd put on in a baby's room… to get them to sleep. It brings me a lot of calmness and feelings of safety… [It's what] I need right now." The musical and visual outlet provided her with the opportunity to identify and fulfil her need to feel safe and calm.

In another instance, after an instrumental improvisation in which members emulated the ebb and flow of a storm, P9 commented that the middle of the storm was "anxiety-provoking" but that there had been a "controlled coming down", reaching an ending that felt "euphoric". P7 described feeling "joy and awe" when listening to a group improvisation exploring the theme of past, present, and future (see Recording 2 – "Group 2, Session 2, I Was, I Am, I Will Be"). This was echoed by several other participants after listening back to improvisations; they noted that while playing, they had been so focused on themselves that they had not been able to hear, or fully appreciate, the full group sound.

Staying with challenging emotions

Engaging in improvised music-making was a first-time experience for all participants. Many group members described feeling vulnerable, uncomfortable, or anxious during music-making. Along with our reminders that there were "no right or wrong notes" in music therapy, we encouraged participants to observe their own thoughts and feelings as they arose, which often included perfectionist and repetitive self-judgements. P14 described "sitting through" improvisations and explained: "I think the more you sit through it the more you become comfortable with being uncomfortable… and you eventually [will] not be uncomfortable anymore. And be able to enjoy those moments that are meant to be enjoyed."

P2 described the parallel between feeling vulnerable in group improvisations and other aspects of her life: "The eating disorder... and your job keeps you focused on something else that you really don't allow yourself to be vulnerable." She identified allowing herself to "be totally vulnerable" as a goal, "and not fighting it, which is what I've done my whole life, is suppressed everything." Group music-making allowed her to explore feeling vulnerable in a safe and supportive environment. P21 shared wanting to be able to "let go and fall" within the music. She related a group improvisation, which

[2] All recordings are available as supplementary material on the website of *Approaches*.

deliberately moved from more to less structure, to her recent experience trying rock-climbing (see Recording 3 – “Group 3, Session 3, Structure to Freedom”).

> The way that we went from having the beat to just doing whatever and hoping that it worked out, felt really similar to when I was at the top and they were like “Just let go!” and I’m like, “I can’t!” And then I did, and it was fine.

Group music-making was indelibly linked to emotions for most participants. Participants experienced music as an *outlet* for emotional expression, as a medium for *desired shifts* in emotions, as well as an opportunity to *stay with* challenging emotions. Some participants expressed the desire to continue engaging in music-making after the group was over, mainly because of the connections they felt with one another.

Music and connectedness

Social connection, the third theme from the qualitative data, was strongly highlighted by all three research groups. Participants recognised that group music-making invited and sustained connections with one another in unique ways.

Embodying (Dis)connections

Participants often observed that their musical experiences symbolised and embodied their connections to one another. For example, after listening back to her group’s improvisation based on the theme, “I Was, I Am, I Will be”, P11 described: “I felt all warm inside... I could picture a group of women standing tall and proud against something… it felt beautiful and inspirational and like there was such power, strength, and harmony in it.” Participants noted feeling personal connection with one another during moments in which the music was perceived to be in sync: “We started low, and got to a really high point…I remember thinking, like, ‘This is beautiful,’ and looking around at everybody and being just really happy that I was experiencing this with them” (P16). For P15, during a particularly difficult week, she noted, “I feel like I’ve totally disconnected from everything… It felt good to be in the room with everyone else participating and to know that there are still people around me... I felt more safe than I have in a while.” P15 also noted how the continuity of sound, while humming with the group, contributed to her feeling of safety: “I liked that when I had to stop to breathe it just kept going. When my mind started to drift I came back to just the sound.”

P2 noted that improvisation could either connect you with others or keep you within yourself:

> You really have to listen when you’re doing the improvisations…It takes you out of yourself… When we’re in our own self we’re only thinking about our own sound and how we’re doing... If we’re listening to everybody else’s sound and trying to find something that complements it, you’re actually relating and that is connectedness.

Similarly, P3 noted that “you have to listen to each other… and through that you can tune in to what they’re feeling and what they’re going through.”

P17 identified feelings of "community connection" when the group sang together, and continued, "I was getting... the musical shivers. When the notes really hit well you feel it at the back of your neck." Several other participants also experienced connection while singing. P2 shared, "When I sing by myself I'm not very good but I like to sing with other people... I like the connectedness when we were doing those things, and I love 'Let It Be'... that's my favourite song". P10 said that in contrast to playing the instruments, which felt uncomfortable, "singing the songs was the most positive thing... I think because it was familiar."

Self-consciousness at times presented a barrier to group connection. Several patients echoed P11's observations that in some improvisations, the group did not come together and individuals were focused on their own sounds, "like a bunch of animals at a watering hole." At times, patients' experiences of discomfort with perceived chaos within group improvisations hindered feelings of connection. P14 described one improvisation: "I started to get anxious, because people weren't following the beat… so I just focused on myself, and neglected everybody else because they weren't… sounding like I wanted the song to sound." As noted previously, increased musical structure was helpful at times. P19 observed that structured drumming experiences "felt more supportive and communal" than improvisations in which everyone played distinct instruments more freely; similarly, P7 reflected that drumming "brought... unity and cohesiveness."

Participants noted that music can simultaneously allow for individual voices to be heard while also creating a larger group sound. While listening back to an improvisation, P17 drew an infinity symbol using vibrant and overlapping colours, and described,

> I was trying to get hold of the unity that we were trying to portray…It's still a little bit jumbled in a sense, but not in a bad way… Some sounds here, other sounds there, then a bigger sound kind of encompassing all of the little sounds together.

Along this theme of parts creating a whole, P5 reflected after an improvisation, "Each individual is so important… it's give and take constantly... We're giving to people whether they see us blossom, and notice that, or whether they see us struggling."

Forging distinct connections

Several participants in each group reflected that music therapy had brought them together in different ways from other group programming at the facility, and noted that particular qualities of music had afforded this. For example, P18 described, "We're all in our heads a lot," noting that music-making allowed the group to "let loose and find a rhythm together in whatever way we feel that we need." After an improvisation representing a transition from vulnerability to strength, in which the group had supported P2, P2 described, "To me that's what healing in the community is… I don't feel it there (pointing towards the hallway) the way I feel it here." P7 described "You can see a different side of people here than you would in traditional groups... It brought me closer to some people."

A noteworthy interaction between P16, P17, and P20 took place at their focus group.

> P16: I feel like music therapy brought us a lot closer than other groups… I felt connection every time I left, like, every time I left this room I felt closer to you guys… We were making something together, and that bonds people.
>
> P17: When you think about it, it's the only group where we do that... Everything else is super useful but it's more an individual thing. Like when we're in horticulture we make our own plant. When we're in one of the CBTs [groups], it's like *our* homework. We share, but it's not something that we make together.
>
> P20: Here we make it together. We always say that we heal in community and this is actually healing in community, 'cause we're actually working together and bonding.

Here, in music therapy, they were creating *the same thing* together, which demanded "being in tune with other people" in a different way than "in groups… where people are speaking" (P2).

External factors often affected the dynamic within sessions, sometimes hindering social connection through music, or making it more meaningful. P7 remembered that at one particular session, "we were all kind of low and not into this as much". In contrast, after listening back to one particular improvisation, she reflected, "I had a lot of joy and happiness knowing that we did that... because there can be a lot of tension on the unit."

We move now to presenting the results from quantitative data analysis, which pertains to music therapy's impact upon patients' moods and emotion regulation behaviours.

Quantitative data analysis

The results presented in Tables 1 and 2 are grouped according to analysis first based upon all research participants followed by patient diagnosis. Table 3 further stratifies the analysis by diagnostic group. These results display that patients were better able to regulate their affective and emotional states after participating in four weeks of music therapy.

Pre-post presentation

Paired t-tests were conducted to compare the difference in emotion regulation strategies and affective state before and after four sessions of music therapy. There was no significant difference in difficulties with impulse control before and after music therapy. There was a significant difference in expressive suppression before and after music therapy ($t(16)=2.648$, $p=0.018$), suggesting that participants were less likely to suppress their emotions after music therapy. Additionally, positive affect before and after four sessions of music therapy was not significantly different. Negative affect before and after four sessions of music therapy was found to be statistically different ($t(15)=3.203$, $p=0.006$), suggesting that participants experienced lower levels of negative affect after four sessions of music therapy (see Table 1).

Response to each session

The PANAS measure was collected before and after each of the four sessions. A paired t-test was used to compare the difference in positive affect (PA) and negative affect (PA) for each session (i.e. S1-S4).

There was no difference found for PA or NA after session one and session three. There was a significant difference in scores of PA before and after session two ($t(19)=-4.740$, $p=0.000$) and a trend towards a significant difference before and after session four ($t(16)=-2.045$, $p=0.058$), suggesting participants experienced increased levels of positive affect after these two sessions of music therapy. Additionally, there was a significant difference in scores of NA before and after session two ($t(19)=3.241$, $p=0.004$) and session four ($t(16)=2.671$, $p=0.017$) suggesting participants experienced decreased levels of negative affect after these two sessions of music therapy (see Table 2).

Diagnosis

Paired t-tests were conducted separately for participants based on diagnosis, Anorexia Nervosa (AN) and Bulimia Nervosa (BN), to compare the difference in emotion regulation strategies and affective state before and after four sessions of music therapy. Paired t-tests were also conducted separately for participants based on primary behavioural subtype i.e., restricting or binge eating/purging behaviours, to compare the difference in emotion regulation strategies and affective state before and after four sessions of music therapy (see Table 3).

There was a significant decrease in negative affect from before to after four sessions of music therapy ($t(10)=3.192$, $p=0.010$) for AN, and the change was not significant for those with BN. When considering primary symptom presentation, participants whose primary symptom presentation was restriction had a significant decrease ($t(7)=2.456$, $p=0.043$) and participants with AN approached significance ($t(11)=2.084$, $p=0.061$) in expressive suppression from before to after four sessions of music therapy, suggesting an increase in the ability to express emotion after music therapy. There was a significant decrease in negative affect from before to after four sessions of music therapy ($t(7)=4.592$, $p=0.003$) and a slight increase in positive affect ($t(7)=-2.227$, $p=0.061$) for participants with a primary symptom presentation of the binge eating/purging subtype.

As demonstrated, music therapy is associated with a decrease in negative affect measured by the PANAS, as well as an increased ability to express emotion measured by the ERQ, particularly for participants whose behavioural symptoms are characterised primarily by dietary restriction.

DISCUSSION

The themes, questions, and considerations arising from this study's results are further elucidated in this section. We begin by discussing the complementary nature of the gathered numerical and narrative data, and then explore the study's results in the area of emotion regulation in particular. Finally, we emphasise the music-centred (Aigen, 2014) perspective that was integral to the music therapy sessions themselves, and which is reinforced by the study's results.

Complementary perspectives: Qualitative and quantitative data

This study's mixed methods design provides two distinct lenses through which to better understand group music therapy's impact. For some elements of the study's results, both numerical and narrative data must be considered together in order to understand participants' experiences more fully.

Regarding patient affect, for example, we recognise that although the PANAS scores indicated that participants experienced lower levels of negative affect after four music therapy sessions, there was no significant overall change in positive affect. During check-ins at the beginning of sessions, patients often expressed feeling anxious and uncomfortable upon arriving to music therapy. Therefore,

Paired T-Test		N	Mean	SD	Mean difference	T	DF	P
Pair 1								
	Pre ERQ	17	18.00	5.96				
	Post ERQ	17	15.47	6.04	2.53	2.648	16	**0.018**
Pair 2								
	Pre DERS	16	16.25	5.90				
	Post DERS	16	14.13	3.30	2.13	1.491	15	0.157
Pair 3: PANAS								
	Pre PA	16	26.06	8.43				
	Post PA	16	26.81	11.61	-0.75	-0.238	15	0.815
Pair 4: PANAS								
	Pre NA	16	21.06	8.49				
	Post NA	16	15.25	5.87	5.81	3.203	15	**0.006**

Table 1: All participants from baseline to end of four music therapy sessions

Paired T-Test		N	Mean	SD	Mean difference	T	DF	P
Pair 1								
	Pre PA (S1)	19	27.16	8.32				
	Post PA (S1)	19	29.63	8.30	-2.47	-1.362	18	0.190
Pair 2								
	Pre PA (S2)	20	21.55	7.38				
	Post PA (S2)	20	29.65	8.11	-8.1	-4.740	19	**0.000**
Pair 3								
	Pre PA (S3)	16	26.81	9.11				
	Post PA (S3)	16	31.13	9.83	-4.31	1.808	15	0.091
Pair 4								
	Pre NA (S4)	17	24.29	9.00				
	Post NA (S4)	17	27.06	11.28	-2.76	-2.045	16	**0.058**
Pair 5								
	Pre NA (S1)	19	21.63	8.69				
	Post PA (S1)	19	19.63	8.98	2.00	1.026	18	0.319
Pair 6								
	Pre PA (S2)	20	26.30	9.85				
	Post PA (S2)	20	20.50	5.39	5.80	3.241	19	**0.004**
Pair 7								
	Pre PA (S3)	16	20.81	8.94				
	Post PA (S3)	16	17.69	7.27	3.13	1.27	15	0.224
Pair 8								
	Pre NA (S4)	17	20.53	8.22				
	Post PA (S3)	17	16.00	6.47	4.53	2.671	16	**0.017**

Table 2: All participants' pre and post session PANAS scores

Paired T-Test		N	Mean	SD	Mean Difference	T	DF	P
Anorexia Nervosa (AN)								
Pair 1								
	Pre ERQ	12	17.25	6.17				
	Post ERQ	12	14.67	6.08	2.58	2.084	11	0.061
Pair 2								
	Pre DERS	11	13.91	5.09				
	Post DERS	11	13.36	3.04	0.55	0.392	10	0.703
Pair 3: PANAS								
	Pre PA	11	25.18	7.88				
	Post PA	11	29.45	12.02	-4.27	-1.194	10	0.260
Pair 4: PANAS								
	Pre NA	11	23.27	8.17				
	Post NA	11	16.18	6.74	7.09	3.192	10	0.010
Bulimia Nervosa (BN)								
Pair 1								
	Pre ERQ	5	19.80	5.63				
	Post ERQ	5	17.40	6.15	2.40	1.596	4	0.186
Pair 2								
	Pre DERS	5	21.40	4.22				
	Post DERS	5	15.80	3.56	5.60	1.830	4	0.141
Pair 3: PANAS								
	Pre PA	5	28.00	10.22				
	Post PA	5	21.00	9.08	7.00	1.340	4	0.251
Pair 4: PANAS								
	Pre NA	5	16.20	7.76				
	Post NA	5	13.20	2.86	3.00	0.973	4	0.386
Restricting Behaviours (Subtype of AN)								
Pair 1								
	Pre ERQ	8	18.25	5.50				
	Post ERQ	8	14.13	6.53	4.13	2.465	7	0.043
Pair 2								
	Pre DERS	8	17.38	6.44				
	Post DERS	8	14.88	3.98	2.50	1.009	7	0.347
Pair 3: PANAS								
	Pre PA	8	26.88	9.20				
	Post PA	8	21.00	11.16	5.88	1.341	7	0.222
Pair 4: PANAS								
	Pre NA	8	17.75	7.72				
	Post NA	8	14.13	5.82	3.63	1.163	7	0.283
Binge Eating/Purging Behaviours (Subtype of BN)								
Pair 1								
	Pre ERQ	9	17.78	6.67				
	Post ERQ	9	16.67	5.68	1.11	1.296	8	0.231
Pair 2								
	Pre DERS	8	15.13	5.51				
	Post DERS	8	13.38	2.50	1.75	1.101	7	0.307
Pair 3: PANAS								
	Pre PA	8	25.25	8.14				
	Post PA	8	32.63	9.32	-7.38	-2.227	7	0.061
Pair 4: PANAS								
	Pre NA	8	24.38	8.35				
	Post NA	8	16.38	6.09	8.00	4.592	7	0.003

Table 3: Diagnostic breakdown: Baseline to end of four music therapy sessions

we can hypothesise that the significant decrease in negative affect could be a function of participants arriving to each session in a state of heightened anxiety, and then gradually becoming more comfortable in the space. Also notable was the fact that, during *each* research group, several patients mentioned the unfortunate Wednesday morning timeslot; music therapy occurred simultaneously to the eating disorders unit "rounds", during which the interdisciplinary team discussed patients' treatment plans and decided who would have particular privileges granted or taken away based upon treatment progress. Many patients shared that they felt anxiety at this time each week, knowing that team members were speaking about them behind closed doors. Undoubtedly and understandably, this external factor impacted patients' affect while attending music therapy and likely impacted PANAS scores. Notably, the unit has since changed the format for their rounds, with patients now expected to attend and participate in discussion surrounding their own treatment progress.

The perspectives that certain patients shared regarding their affect at the end of sessions also provides one potential explanation for the numerical scores gathered. During focus groups, several participants stated that the emotional state in which they left sessions, as captured on the PANAS scale, was distinct from the longer-term or less obvious benefits they experienced from music therapy. For example, P4's insightful description, cited earlier, of having felt sad when leaving music therapy and then processing rather than suppressing this sadness, affirms this patient's commitment to in-depth psychotherapeutic work. It also provides one potential explanation for the fact that the PANAS scores did not always indicate an improvement in affect during sessions. P4's description portrays the way in which narrative data can contextualise numerical data, reminding us to note the wider context of clients' lived experience and recovery journeys as we interpret and integrate the quantitative scores. While recognising the significance of improved affect, we also suggest that music therapy's success cannot narrowly be evaluated upon mood improvement alone, particularly not in the short-term. Despite insignificant PANAS scores, many patients' narrative accounts of sessions provided a nuanced picture in which music therapy indeed played an impactful role in recovery.

Music therapy and emotion regulation

The measures of emotion regulation collected before the first music therapy session and after the final session demonstrated a statistically significant change in expressive suppression for *all* participants, demonstrating that our approach to group music therapy, which focused upon creativity and freedom in music-making, was supportive of participants in expressing and regulating their emotions (i.e., externalising, shifting away from, and staying with challenging emotions). One important distinction is that participants with AN, restricting subtype—the diagnosis associated with the most restrictive behaviours—demonstrated the *highest* decrease in levels of emotional suppression over four weeks.

We propose that a potential area for further exploration would be to design a model of group music therapy focusing on goals to increase emotional regulation and manage or decrease impulsive behaviours. For individuals with eating disorders who display impulsivity, a potential secondary benefit of group music-making could be the development of greater self-awareness and self-control, as group music-making demands listening, turn-taking, and a constant balancing of one's own sound within the

group's whole, in order to create cohesive music. We recognise this as an area for future clinical development and research.

We also recognise that a major limitation of this study was the absence of a control group. We cannot infer causality in our observations of changes in participant affect or emotional restriction. We acknowledge that some of the improvements documented may be attributed to general progress within treatment. This study was also limited in terms of sample size, at 21 participants. We cannot generalise our results, but rather, only observe trends and suggest that there is great potential for future research in the areas of music therapy's impact upon affect and emotion regulation for individuals with eating disorders.

A music-centred perspective

Music naturally affords experiences of structure and freedom, embodying this dialectic within its very nature. When music is too structured, we can become bored, however, when it is too free, we can become lost or disoriented. Participants in our study, with styles of emotion regulation ranging from impulsivity to restriction, provided feedback that they were able to both benefit from music's structure and also challenge themselves to explore music's freedom.

Music can also play a significant role in identity formation and development, challenging the eating disorder that so often begins to define the individual. In our study, participants were able to perform their musical selves both autonomously and in relation to one another (Trondalen, 2016a), using a range of music therapy techniques to enhance and explore self-identity (Pasiali et al., 2020). Lee (2015) suggests that "it is through the creative immediacy of music that clients can translate their world into musical form" (p. 14) and Ruud (1998) states that music is "similar to play…[and] can be seen as a form of transition leading to imagined ways of being" (p. 163). The ability to play in music, experiment, make "mistakes", and communicate without words allowed participants to play with their identities and challenge perfectionism and rigidity through uninhibited self-expression (Pasiali et al., 2020).

Finally, music's social affordances, well-documented both within and outside of the music therapy literature (Cross, 2014; Grocke et al., 2009; McCaffrey, 2018; Small 1998), provided participants with meaningful experiences of social connection. Participants' music-making reflected, contained, and supported their connections with one another in ways they described as markedly different from other group therapy settings; group music-making allowed individuals to "see a different side of people" (P7), "make something together" (P16), and "heal in community" (P20). Though social connections can of course be made and supported in many different settings, music's *unique* potential benefits in this area provide a strong rationale for the provision of group music therapy within inpatient mental health.

Participants' invaluable experiences of social connection through music-making also connected to the other themes that emerged in this research. For example, music's ability to represent aspects of participants' selves and recovery journeys was amplified by the fact that participants heard this representation with and for one another. P6's and P2's insights, described earlier, about the way in which music represented the "bumpy", "subtle", and "fluid" nature of recovery, were made possible by the group; each individual's musical contribution was vital to the resulting music, which facilitated

these metaphors and insights. In tandem, as participants expressed and stayed with difficult emotions through music-making, they witnessed and supported one another doing this. This was indicated in P5's statement: "Each individual is so important… We're giving to people whether they see us blossom, and notice that, or whether they see us struggling.*"* Our development as individuals is interconnected with our relationships, and music provides a unique medium through which to support and witness one another (Mitchell, 2021). In this way, the themes that emerged from this research are interconnected.

CONCLUSION

In its exploration of the impact of group music therapy for individuals with eating disorders, this study seeks to provide compelling rationale to maintain and increase music therapy services currently offered within inpatient treatment. This study also aims to provide a resource for practicing music therapists while prompting allied health professionals to advocate for music therapy's use within treatment.

Participants' descriptions of their experiences resonated with our music-centred recognition that music provides us with experiences that are "essential to well-being and that are uniquely musical" (Aigen, 2014, p. 65). Our participants took risks, many of them exploring sound creatively, messily, and outside of their comfort zones, connecting these sounds to their lives and emotions, and supporting one another throughout the process. Here, participants' narratives provided this study's melody, and their scale responses filled in a rich harmony to bolster their voices. Through its temporal nature, engaging in musical improvisation challenged participants to stay with their emotions and confront perfectionism and rigidity through subtle changes in their playing or singing. The music they made together reflected reality, provided new possibilities, and held and sustained a range of emotions, connecting participants to themselves, to each other, and to new ways of being.

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APPENDIX: FOCUS GROUP QUESTIONS

Impact of group music therapy on patients with eating disorders

1. What was the most memorable experience for you in the four music therapy sessions?
2. Were there any musical experiences that you did not enjoy? If so, what were they?
3. What musical experience felt most challenging? What do you think made it challenging?
4. What musical experience felt easiest? What do you think made it feel easy?
5. Did attending music therapy affect your relationships with your co-patients in the group? If so, how?
6. Describe the experience of improvising as a group.
    a. What (if any) aspects of this experience did you enjoy and/or find beneficial?
    b. Were there challenges associated with spontaneously creating music? Were you able to overcome those challenges, and if so, how?

7. Describe the experience of singing as a group.
    a. What (if any) aspects of this experience did you enjoy and/or find beneficial?
    b. Were there challenges associated with singing? Were you able to overcome those challenges, and if so, how?
8. Were there any moments where you felt critical towards yourself or your playing/singing during the sessions? If so, when did these occur? Did these thoughts/feelings increase or decrease as the sessions progressed?
9. In what ways, if any, did participating in the group affect your overall mood?

Ελληνική περίληψη | Greek abstract

Ο αντίκτυπος της ομαδικής μουσικοθεραπείας με άτομα με διατροφικές διαταραχές

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ΠΕΡΙΛΗΨΗ

Η παρούσα μελέτη μικτής μεθόδου διερεύνησε τον αντίκτυπο της ομαδικής μουσικοθεραπείας σε άτομα που νοσηλεύονται λόγω διατροφικών διαταραχών. Στη μελέτη συμμετείχαν 21 άτομα ηλικίας από 16 έως 58 ετών. Μελετήθηκε η ζώσα εμπειρία τους στη μουσικοθεραπεία, συμπεριλαμβανομένης της επίδρασης της μουσικής στη διάθεση και την συναισθηματική ρύθμιση. Τα δεδομένα, τα οποία συγκεντρώθηκαν με χρήση της κλίμακας "PANAS" (Positive and Negative Affect Scale) (Watson et al., 1988), και των υποκλιμάκων της κλίμακας "DERS" (Difficulties in Emotion Regulation Scale) (Gratz & Roemer, 2004), και του ερωτηματολογίου "ERQ" (Emotion Regulation Questionnaire) (Gross & John, 2003), κατέδειξαν μείωση αρνητικών συναισθημάτων των συμμετεχόντων καθώς και μία αύξηση της ικανότητας για έκφραση των συναισθημάτων τους μετά τη συμμετοχή τους στη μουσικοθεραπεία. Τα δεδομένα που συγκεντρώθηκαν από ηχογραφήσεις και μεταγραφές των μουσικοθεραπευτικών συνεδριών και των ομάδων εστίασης [focus groups], προτείνουν ότι, μέσω της κοινής μουσικής δημιουργίας και εκτέλεσης, οι συμμετέχοντες ανακάλυψαν την ικανότητα της μουσικής να αναπαριστά ποικίλες πτυχές του εαυτού τους και της πορείας της ανάρρωσής τους, τη δυνατότητα της μουσικής να τους βοηθήσει να εξωτερικεύσουν, να διαφοροποιήσουν και να ασχοληθούν με τα συναισθήματά τους, και την ευχέρεια της μουσικής να προάγει κοινωνικούς δεσμούς.

ΛΕΞΕΙΣ ΚΛΕΙΔΙΑ

μουσικοθεραπεία, διατροφική διαταραχή, αυτοσχεδιασμός, συναισθηματική ρύθμιση, μικτή μέθοδος