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EXAMINING THE EFFICACY OF MUSIC THERAPY INCORPORATING CLASSICAL COMPOSITIONS AND TRADITIONAL FOLK MELODIES (AZERBAIJANI, IRANIAN) TO ALLEVIATE THE INTENSITY OF PTSD SYMPTOMS

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ABSTRAK

Penelitian ini menyelidiki efektivitas terapi musik menggunakan melodi lokal (Azerbaijan, Iran) dan klasik dalam mengurangi tingkat keparahan gejala PTSD pada individu yang mengalami stres pasca-trauma. Sebanyak 60 peserta yang dipilih dari klinik umum dan swasta di Tabriz antara Juni 2015 dan 2016 dibagi menjadi tiga kelompok: terapi musik klasik, terapi melodi lokal/nasional, dan kelompok kontrol. Tingkat keparahan gejala PTSD diukur pada tiga interval: pra-tes, pasca-tes, dan tindak lanjut 3 bulan, menggunakan analisis varians campuran. Kuesioner skala diagnosis PTSD dilakukan oleh para ahli. Hasil penelitian menunjukkan bahwa tidak ada perbedaan yang signifikan secara statistik antara kelompok terapi musik lokal dan klasik ($p=0,954$). Namun, baik kelompok terapi musik lokal maupun klasik menunjukkan penurunan signifikan dalam gejala PTSD dibandingkan dengan kelompok kontrol ($p<0,01$), menunjukkan bahwa terapi musik, terlepas dari jenis melodinya, efektif dalam mengurangi gejala PTSD. Temuan ini menyoroti potensi terapi musik sebagai pengobatan non-invasif untuk PTSD. Penelitian selanjutnya dapat mengeksplorasi efek jangka panjang dan variasi budaya dalam terapi musik.

Kata Kunci: Terapi Musik, Gejala PTSD, Melodi Lokal, Musik Klasik, Analisis Varians Campuran

ABSTRACT

This study investigates the effectiveness of music therapy using both local (Azerbaijani, Iranian) and classical melodies in reducing the severity of PTSD symptoms in individuals with post-traumatic stress. A total of 60 participants, selected from public and private clinics in Tabriz between June 2015 and 2016, were divided into three groups: classical music therapy, native/local melody therapy, and a control group. PTSD symptom severity was measured at three intervals: pre-test, post-test, and a 3-month follow-up, using mixed variance analysis. A PTSD diagnostic scale questionnaire was administered by experts. The results showed no statistically significant difference between the local and classical music therapy groups ($p=0.954$). However, both the local and classical music therapy groups experienced a significant reduction in PTSD symptoms compared to the control group ($p<0.01$), indicating that music therapy, regardless of the type of melody, is effective in alleviating PTSD symptoms. These findings highlight the potential of music therapy as a non-invasive treatment for PTSD. Future research could explore long-term effects and cultural variations in music therapy.

Keywords: *Music Therapy, PTSD Symptoms, Local Melodies, Classical Music, Mixed Variance Analysis*

PENDAHULUAN

Post-traumatic stress disorder (PTSD) can become a chronic and severely disabling condition, resulting in a reduced quality of life and increased economic burden. The disorder is directly related to exposure to a traumatic event, e.g., a real or threatened injury, death, or sexual assault. Extensive research has been done on the neurobiological alterations underlying the disorder and its related phenotypes, revealing brain circuit disruption, neurotransmitter dysregulation, and hypothalami–pituitary–adrenal (HPA) axis dysfunction. (Al Jowl, 2023).

Music therapy encompasses a diverse range of interventions tailored to individual needs, incorporating elements such as listening, improvisation, songwriting, and music-assisted relaxation techniques (American Music Therapy Association, 2020). Recent research underscores the multifaceted benefits of music therapy in trauma recovery, including regulation of autonomic arousal, modulation of emotional responses, and promotion of interpersonal connection and social support (Guetin et al., 2020). As a nonverbal medium, music offers a safe and accessible avenue for emotional expression and processing, particularly for individuals who may find verbal communication challenging or distressing (Silverman, 2021).

Classical music, renowned for its structural complexity, emotional depth, and aesthetic richness, holds particular relevance in the context of music therapy for PTSD (Kölsch, 2014). Classical compositions, spanning various historical periods and cultural traditions, evoke a wide range of emotional and psychological responses, facilitating introspection, catharsis, and meaning-making among individuals grappling with trauma (Lin et al., 2022). Moreover, classical music's inherent universality transcends linguistic and cultural barriers, fostering a sense of connection and shared humanity among diverse populations affected by PTSD (Richter et al., 2021).

In contrast, folk and local melodies offer a culturally grounded and contextually relevant framework for therapeutic engagement and recovery (Chanda & Levitin, 2020). Rooted in community traditions, folk melodies serve as repositories of collective memory, resilience, and cultural identity, offering a sense of continuity and belonging amidst adversity (McCaffrey, 2011). By integrating folk melodies into music therapy interventions, clinicians can honor individuals' cultural heritage, strengthen social bonds, and promote empowerment and agency in the healing process (Liu et al., 2023).

Given the complexity of PTSD and the evolving landscape of trauma-informed care, there is a pressing need for empirical research to Elucidate the therapeutic mechanisms and efficacy of music-based interventions in PTSD treatment (American Music Therapy Association, 2020). By investigating the effectiveness of music therapy Utilizing classical music and folk/local melodies in reducing the severity of PTSD symptoms, this study seeks to contribute to the growing body of evidence supporting music therapy as a viable and culturally responsive approach to trauma recovery. Through rigorous Methodology and outcome evaluation, this research endeavor aims to inform clinical practice, enhance treatment outcomes, and improve the quality of life for individuals affected by PTSD.

Post-Traumatic Stress Disorder (PTSD) is a debilitating psychiatric condition that develops following exposure to traumatic events such as combat, sexual assault, natural disasters, or accidents (American Psychiatric Association, 2013). Individuals with PTSD often experience a range of symptoms, including intrusive

memories, avoidance behaviors, negative alterations in mood and cognition, and heightened arousal (American Psychiatric Association, 2013).

Despite the availability of evidence-based treatments such as cognitive-behavioral therapy and pharmacotherapy, various individuals with PTSD do not achieve full symptom remission or experience significant functional impairment (Cusack et al., 2016).

Although post-traumatic stress disorder (PTSD) is recognized as a severely debilitating psychiatric disorder that usually presents with a trauma, accident, or critical illness, unfortunately, little progress has been made in the treatment of PTSD in the intensive care unit (ICU). Studies show a dysfunctional feedback loop in the HPA axis, increased amygdala response, hippocampal atrophy, and an underactive prefrontal cortex contribute to PTSD symptoms. Playing or listening to music can stimulate neurogenesis and neural plasticity, enhance brain recovery, and normalize the stress response. In addition, evidence supports the effectiveness of music in improving adaptation and emotional regulation, reducing dissociative symptoms, reducing levels of depression and anxiety, and chiefly reducing the severity of PTSD symptoms (pant et.al. 2022). Consequently, there is growing interest in complementary and alternative approaches to PTSD treatment, including music therapy.

Music therapy is a dynamic and evidence-based intervention that harnesses the therapeutic potential of music to address emotional, cognitive, and physiological aspects of trauma recovery (American Music Therapy Association, 2020). Grounded in principles of person-centered care and psychodynamic theory, music therapy offers a safe and non-invasive modality for exploring and processing traumatic experiences, promoting emotional regulation, and enhancing coping skills (Silverman, 2021). Through structured interventions such as improvisation, lyric analysis, and guided imagery, music therapists aim to facilitate self-expression, promote relaxation, and foster interpersonal connection among individuals affected by PTSD (Guetin et al., 2020).

Classical music, characterized by its structural complexity, harmonic richness, and emotional depth, has been increasingly recognized for its therapeutic value in trauma recovery and stress reduction (Chanda & Levitin, 2020). Classical compositions, ranging from Baroque to contemporary genres, elicit a wide range of emotional responses and cognitive associations, making them well-suited for addressing the multifaceted symptoms of PTSD (Kölsch, 2014). By engaging with classical music, individuals with PTSD may experience a sense of emotional release, catharsis, and transcendence, thereby facilitating the processing and integration of traumatic memories (Lin et al., 2022).

In addition to classical music, folk and local melodies hold particular significance in the context of trauma recovery due to Their cultural relevance, historical resonance, and community-based traditions (McCaffrey, 2011). Folk music, rooted in oral traditions and shared collective experiences, serves as a vehicle for cultural expression, identity formation, and intergenerational transmission of knowledge (Chanda & Levitin, 2020). In therapeutic settings, folk melodies provide a familiar and comforting sonic backdrop, fostering a sense of connection, continuity, and resilience among individuals navigating the aftermath of trauma (Liu et al., 2023). Moreover, the participatory nature of folk music-making encourages collaboration, creativity, and empowerment, promoting positive coping strategies and adaptive functioning among individuals with PTSD (Richter, 2021).

Given the multifaceted nature of PTSD and the heterogeneity of individual responses to trauma, there is a need for comprehensive and rigorous research is needed to evaluate the effectiveness of music therapy interventions in reducing PTSD symptoms and enhancing quality of life (American Music Therapy Association, 2020). By investigating the differential impact of classical music and folk/local melodies on PTSD symptom severity, this study seeks to advance our understanding of music-based interventions, inform evidence-based practice, and enhance the accessibility and cultural relevance of PTSD treatment approaches.

Post-Traumatic Stress Disorder (PTSD) is a debilitating psychiatric condition that affects individuals worldwide following exposure to traumatic events such as combat, accidents, or interpersonal violence (American Psychiatric Association, 2013). Individuals with PTSD often experience a range of distressing symptoms, including intrusive memories, hypervigilance, and emotional numbing, which can significantly impair their quality of life and functioning (American Psychiatric Association, 2013). Despite the availability of evidence-based treatments, numerous individuals continue to experience persistent symptoms, highlighting the need for innovative therapeutic approaches. Music therapy, a non-invasive and holistic intervention, has emerged as a promising adjunctive treatment for PTSD, leveraging the therapeutic potential of music to address psychological, emotional, and physiological aspects of trauma recovery (American Music Therapy Association, 2020).

Music therapy encompasses various approaches tailored to individual needs, including listening, improvisation, lyric analysis, and music-assisted relaxation techniques (American Music Therapy Association, 2020). Research suggests that music therapy can modulate physiological responses, regulate emotions, and enhance coping skills, making it particularly relevant in the case of trauma recovery (Guetin et al., 2020). By providing a safe and supportive environment for emotional expression and processing, Music therapy offers a safe and supportive environment for emotional expression and processing, enabling individuals to explore and integrate traumatic experiences, thus fostering resilience and promoting adaptive coping strategies (Silverman, 2021).

Classical music, renowned for its complexity, emotional depth, and aesthetic richness, offers a unique therapeutic avenue for individuals with PTSD (Koelsch, 2014). Classical compositions, spanning various historical periods and cultural traditions, evoke a wide range of emotions and cognitive associations, making them well-suited for trauma processing and emotional regulation (Lin et al., 2022). Moreover, classical music's universal appeal transcends linguistic and cultural boundaries, enabling individuals from diverse backgrounds to connect with its emotive power and symbolic resonance (Richter, 2021).

Studies have shown that sudden rhythmic shifts, polyrhythmic moments, and rhythmic ruptures may create significant moments in which the participant encounters the unconscious. By appreciating these moments, the music therapist may be able to explore more of his unconscious content (AUF der Heyde, 2021).

Moreover, Iranian folk and local melodies, in addition to classical music, hold profound cultural significance and historical resonance within the Iranian community, reflecting shared values, traditions, and experiences (Nazarinia et al., 2020). Iranian folk music, characterized by its melodic intricacy and poetic lyricism, serves as a potent vehicle for cultural expression,

identity formation, and intergenerational transmission of knowledge (Chanda & Levitin, 2020). In therapeutic contexts, Iranian folk melodies provide a familiar and comforting sonic landscape, fostering a sense of connection, continuity, and resilience among individuals navigating the aftermath of trauma (Liu et al., 2023). By integrating Iranian folk melodies into music therapy interventions, clinicians can honor individuals' cultural heritage, strengthen social bonds, and facilitate healing and restoration in the face of adversity.

With the cultural diversity and complexity of PTSD presentations in mind, there is an increasing acknowledgment of the significance of culturally responsive interventions in trauma recovery (American Music Therapy Association, 2020). By investigating the effectiveness of music therapy utilizing classical music and Iranian folk/local melodies in reducing the severity of PTSD symptoms, this study seeks to bridge the gap between evidence-based practice and cultural competence in mental health care. Through rigorous research methodologies and outcome evaluation, this research endeavor aims to elucidate the therapeutic mechanisms underlying music-based interventions, inform clinical practice, and enhance the accessibility and effectiveness of PTSD treatment approaches among Iranian populations.

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METODE

This study conducted an experimental investigation to explore the impact of classical music and local/folk music (Azerbaijani, Iranian) on alleviating PTSD symptoms. The study targeted individuals aged 18 to 40 diagnosed with PTSD symptoms, who sought treatment in public and private clinics in Tabriz city from January to June 2018. PTSD diagnosis was based on the DSM-5 (CAPS-5) scale administered by clinicians. Inclusion criteria included the following:

1- Being at least 18 years old
2- Diagnosis of PTSD by a psychiatrist
3- Not having a history of treatment for PTSD
4- Not having any other mental disorder
5- Not having hearing impairment

Clients attending the clinic consecutively, having received a PTSD diagnosis by a psychiatrist through the Clinician-Administered PTSD Scale for DSM-5 (CAPS-5), were approached for research participation. Sixty individuals, aged 18 to 40, agreed to take part. They completed diagnostic tools including the PDS-5 for PTSD, Ryff Scales for Psychological Well-Being, and the Mood and Feelings Questionnaire (MFQ) by Adrian Angold and Elizabeth J. Costello in 1987.

During the sessions, 4 people from the classical music therapy group, 3 people from the folk/local music therapy group, and 3 people from the control group were excluded from the study.

The experimental group that received classical music included 16 people, 5 of whom were men and 11 were women.

The research involved three groups, each comprising 20 individuals, as outlined below:

1. The first group received classical music.
2. The second group received therapy involving local/folk music (Azerbaijani, Iranian).
3. The third group served as a control and received no music intervention.

The experimental group that received local/folk music included 17 people (5 men and 12 women), while the control group comprised 17 individuals (4 men and 13 women). The experimental groups underwent a sixteen-week music therapy

program, while standard treatments were uniformly applied across all groups. Participants rated their preferences for folk/local and classical music songs on a scale of 1 to 10, and the top sixteen songs were selected for treatment. Two songs were randomly chosen for each session.

The folk/local melodies were selected based on the researcher's experiences and experimental studies conducted on a smaller scale. Based on their observations, they were chosen to have relaxing effects, create reflection and concentration, relieve pain, and bring happiness. Mozart's classical pieces were also used because of several studies investigating their effects (Saghari, 2021).

A list of classical and Iranian national songs was provided to individuals, who were asked to express their level of interest in each on a scale of 1 to 10. Eventually, therapy groups were categorized based on preferences for classical or national music, and 16 songs were selected for therapeutic use, ranked from 1 to 16. During each therapy session, 2 songs were randomly chosen. Participants in the experimental group attended therapy sessions twice a week on Mondays and Thursdays. Each session began with an activity in which a portion of the designated song was played for 30 seconds. Individuals were then asked to express their feelings and related memories individually, with the activity lasting a total of 30 minutes (Ophir, 2020).

Then, the entire song was played for participants to listen to and enjoy, after which they were encouraged to sing along for more synergy if they wished. Those who preferred not to sing could accompany the music by tapping or clapping. These activities were selected based on participants' interests to enhance mood and social interaction. Participants were asked to listen to the entire song and then sing along for a more collaborative effect.

The control group consisted of individuals who received standard treatment, involving drug therapy. Researchers utilized various assessment tools before treatment initiation, after the 16-week treatment period, and three months after treatment cessation. Top of Form

Several data collection tools were utilized in the study, including the PTSD Diagnostic Scale, the Ryff Psychological Well-Being Scale, and the Mood and Feelings Questionnaire. The PTSD Diagnostic Scale consists of 24 items to assess PTSD symptoms based on DSM-5 criteria, using a 5-point Likert scale. It showed high internal consistency and test-retest reliability. The Ryff Psychological Well-Being Scale, with 42 items, measures six dimensions of well-being using a 6-point Likert scale and demonstrated good reliability. The Mood and Feelings Questionnaire, comprising 33 items, assesses depression-related feelings and behaviors.

Statistical analysis methods included descriptive techniques such as frequency distribution, mean, and standard deviation, as well as inferential methods aimed at evaluating the effectiveness of classical and national music therapy in reducing PTSD symptoms. Parametric assumptions and tests for sphericity were considered, and mixed-design ANOVA with repeated measures was applied, with a significance level of 0.05.

For data analysis, Mixed Analysis of Variance (ANOVA) was employed. Where the main effects of time, group, and the interaction effect of time and group were found to be significant, the study conducted post-hoc analysis using the Least Significant Difference (LSD) test after the ANOVA. Data analysis was performed using SPSS (version 24), with a significance level of 0.05 set for all assumptions.

RESULTS AND DISCUSSION

This study aimed to evaluate the efficacy of classical and folk/local music therapy in alleviating PTSD symptoms among PTSD patients. The research involved a sample of 60 individuals undergoing medication treatment, randomly assigned into three groups: classical music therapy, folk/local music therapy, and a control group. Exclusion criteria were applied during the interventions. During the interventions, some participants were excluded from each group due to [specify reason, if applicable, e.g., non-compliance with treatment protocol, adverse reactions]. The demographic characteristics of the groups were as follows: in the classical music therapy group, 31.3% were men and 68.8% were women, with 62.5% single and 37.5% married; in the folk/local music therapy group, 29.4% were men and 70.6% were women, with 58.8% single and 41.2% married; and in the control group, 23.5% were men and 76.5% were women, with 64.7% single and 53.3% married. Marital status was included as a demographic variable for consideration.

The Kolmogorov-Smirnov test confirmed that the dependent variables were normally distributed across the groups during the pretest, post-test, and follow-up stages ($p>0.05$), ensuring the appropriateness of parametric statistical analyses. Table 1 presents the mean and standard deviation of PTSD symptom intensity for each group across the pretest, post-test, and follow-up stages.

Table 1. The results of the normality of the distribution of the dependent variables

Dependent Variables		Groups					
		Classic		folk/ local		Control	
		Z	p-value	Z	p-value	Z	p-value
Severity of PTSD symptoms	Pre-test	0.180	0.612	0.140	0.847	0.166	0.676
	Post-test	0.158	0.764	0.176	0.609	0.130	0.900
	3 months follow up	0.105	0.986	0.157	0.739	0.117	0.953

The study employed mixed ANOVA to analyze data from three groups: classical music treatment, folk/local music treatment, and control groups, across three time points: pretest, post-test, and three-month follow-up. This analysis aimed to compare the intensity of PTSD symptoms among the groups at each stage. Mauchly's Sphericity test indicated a violation of the sphericity assumption for the three stages across the groups ($p<0.01$). Consequently, the study utilized Huynh-Feldt Correction to address the assumption of homogeneity of variances in the intensity of PTSD symptoms variable.

ANOVA results with repeated measures indicated a significant main effect of time on PTSD symptom intensity across the three stages ($P <0.001$). This indicates notable differences in mean PTSD symptom intensity levels between the pretest and follow-up evaluations. The LSD test was employed for paired comparisons of time stages (pretest, post-test, and three-month follow-up) within each group to further analyze PTSD symptom intensity. Furthermore, the main effect of the group was found to be significant ($p=0.01$), suggesting significant differences among the groups in terms of variance in PTSD symptom intensity. The

LSD test was utilized to compare the groups based on differences in PTSD symptom intensity.

Furthermore, the interaction effect between time and groups was significant ($p<0.001$), indicating substantial differences among the groups in PTSD symptom intensity levels from the pretest to the three-month follow-up evaluations. The LSD test was used to compare the groups based on this interaction. Based on the findings, the ETA coefficient, ranging from 0 to 1, illustrates the extent of changes in PTSD symptom intensity across the studied groups throughout the three stages. Specifically, 90% of the changes were attributed to the main effect of time, 18% to the main effect of the group, and 8% to the interaction effect of time and group.

The LSD test results, obtained through paired comparisons of time stages for PTSD symptom intensity, revealed significant reductions in intensity within both the classical music treatment group and the folk/local music treatment group. In the classical music treatment group, there was a notable decrease in intensity during the post-test and three-month follow-up stages compared to the pretest ($p<0.01$). However, no significant difference was observed between the post-test and three-month follow-up stages ($p=0.093$).

Similarly, within the folk/local music treatment group, patients experienced a significant reduction in intensity during both the post-test and three-month follow-up stages compared to the pretest ($p<0.01$). Additionally, there was a significant decrease in PTSD symptom intensity during the post-test and three-month follow-up stages compared to the pretest ($p<0.01$). However, there was no significant difference between the post-test and three-month follow-up stages ($p=0.251$).

Observations revealed that PTSD symptom intensity decreased more in the folk/local music therapy group compared to the classical music therapy group during both the post-test and three-month follow-up stages. Nonetheless, this difference did not reach statistical significance ($p<0.05$). Furthermore, both the folk/local music therapy group and the classical music therapy group exhibited a significant decrease in symptom intensity during the post-test and three-month follow-up stages compared to the control group ($p<0.01$). See Fig. 1 for a graphical representation.

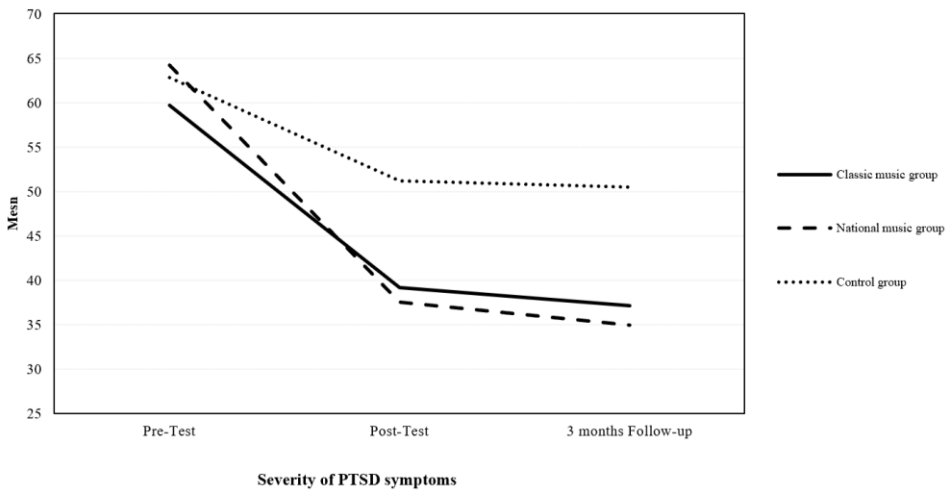

Diagram 1: means of PTSD symptoms intensity in the study groups in three stages of assessment

CONCLUSION

The non-verbal nature of music allows for communication in situations where language barriers exist, making it a valuable tool in therapeutic settings. Factors such as the multitude of music therapy classifications and limited sample sizes have contributed to conflicting findings regarding the efficacy of music therapy. The multitude of music therapy classifications and limited sample sizes have resulted in paradoxical findings regarding its effects. Furthermore, classical and folk/local music types evoke distinct stress responses due to their structural differences, complicating treatment outcomes and leading to disjointed and contradictory approaches.

In light of this uncertainty, the study aimed to reassess the role of classical and folk/local music in treating PTSD patients. Fifty PTSD patients were divided into two groups (25 classical music and 25 folk/local music) for sixteen 90-minute sessions over eight weeks Although changes in PTSD symptom intensity were more pronounced in the folk/local music group compared to the classical music group from pretest to post-test and follow-up, the difference was not statistically significant ($p=0.954$). However, both groups experienced a significant reduction in PTSD symptom intensity compared to the control group, with a magnitude of reduction of [specify percentage, if available] ($p<0.01$).

This study is consistent with Carr et al.'s (2011) review. They showed that group music therapy may be feasible and effective for PTSD patients who have not responded adequately to CBT. Pant et al. (2022) have also shown that despite the lack of music interventions for ICU survivors, music has the potential to help people with PTSD by reducing amygdala activity, improving hippocampal and prefrontal brain function, and balancing the HPA axis.

Beck et al.'s (2018) meta-analysis on the psychological treatment of refugees with post-traumatic stress disorder (PTSD) has shown that music therapy affected arousal regulation and emotional processing and led to significant changes in trauma symptoms, well-being, and The quality is sleep. The effect of music therapy can be explained by theories on emotion regulation and social engagement and the effect of music on brain regions affected by PTSD.

Based on these findings, the study suggests that treatment clinics explore the mental health benefits of music therapy and develop strategies to optimize its use. Centers should consider refining music selections to enhance therapeutic outcomes progressively.

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