

# Music Therapy; Integration of Science and Art in Promoting Mental Health, Beyond a Complementary Approach

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## Abstract

*Music therapy stands at the intersection of scientific research and artistic expression, offering a powerful approach to mental health care that extends far beyond conventional complementary roles. This article examines how music therapy harmonizes measurable neurological and psychological benefits while simultaneously engaging individuals in creative and meaningful experiences that enhance well-being and resilience. Through exploring its mechanisms, applications, and emerging roles in various mental health settings, we argue that music therapy should be recognized as a central and integral practice—one capable of transforming the landscape of mental health care. By revealing how science and art converge in music therapy, this work calls for redefining its position from auxiliary support to a central and dynamic force in mental health promotion.*

**Keywords:** Music Therapy, Psychotherapy, Sound Therapy, Healing Frequency

## 1. Introduction

Mental health care is undergoing a vital transformation driven by the recognition that treatment often requires more than traditional, one-dimensional interventions [1]. Among the most compelling developments in this evolution is music therapy—an approach that uniquely positions itself at the intersection of science and art. Music therapy, far from being a passive or secondary practice, harnesses the universal language of music to access emotional, cognitive, and social dimensions of human experience that are often unreachable through standard therapeutic methods.

While traditional therapies may rely on logic, analysis, or verbal communication, music therapy resonates directly with mind and body, engaging individuals at both conscious and unconscious levels [2]. This dual engagement enables a powerful combination of scientific evidence and creative process: rhythm and melody stimulate neural pathways, while improvisation and songwriting strengthen personal empowerment, self-awareness, and connection. By integrating these elements, music therapy transforms sessions

into dynamic encounters that both soothe and stimulate, regulate emotions and inspire joy, heal isolation and build community.

As mental health challenges become more complex, the boundaries between scientific treatment and artistic intervention must become more permeable [3,4]. Music therapy, with its proven impact across a wide range of mental health conditions and populations, demonstrates how such integration can lead to richer and deeper healing. This article aims to illuminate music therapy's unique capacity to transcend its traditional position as a complementary therapy, seeking its full integration as a fundamental pillar in mental health care—a practice where science and art work harmoniously to promote comprehensive wellness.

Music therapy is performed through two methods: music medicine and music therapy.

- Music Medicine is a more passive approach where patients listen to pre-recorded music as prescribed by a therapist
- Music Therapy typically involves more active, interactive

The distinction is important in the field of music-based therapeutic interventions, where music medicine is generally more standardized and less interactive, while music therapy involves personalized, dynamic interaction between therapist, patient, and music.

Furthermore, music therapy is increasingly recognized as a complementary or alternative modality for a wide range of conditions, addressing not only physical symptoms but also psychological, social, and spiritual needs [5]. Evidence highlights the utility of music therapy in the management of disorders such as schizophrenia, dementia, depression, insomnia, acquired brain injury, Attention Deficit Hyperactivity Disorder (ADHD), and Autism Spectrum Disorder (ASD), as well as in patients receiving mechanical ventilation, those experiencing preoperative anxiety, individuals with bronchiectasis, and patients suffering from stress and anxiety. Additionally, music therapy has demonstrated benefits in alleviating pain in coronary heart disease, improving outcomes in cesarean deliveries, and reducing pain in oncology settings.

## 2. Research Method

The method used in this research is descriptive-analytical using note-taking (library study) and collection of resources that include sources from several websites, several books, and several scientific journals or research theses, and one documentary, all of which focus on music therapy and sound therapy.

### 2.1. Music Therapy in Ancient Iran and During Islamic Civilization

Soothing music in ancient Iran began with the emergence of Zoroastrianism, and inscriptions found from the Sassanid era testify that treatment with music was part of the educational courses at Jundishapur University, and trained nurses in this field were skilled in playing several main instruments and played the prescriptive music of physicians for patients. At that time, music therapy was even used by physicians during women's childbirth.

Zoroaster can be considered the founder of religious music due to his melodic poems in the form of prayers recorded in the Gathas [6]. However, it should be noted that what is attributed to Zoroaster as music therapy is not accompanied by playing instruments, but rather his melodic and influential tones.

By examining Zoroaster's poems in the Gathas, the impact that his melodic speech and rhythmic prayers had on his Mazdaean followers becomes clear. It can be said that he employed a type of music in the service of religious beliefs, one of whose important functions was its healing and therapeutic aspect [7]. Many of the prayers included in the Gathas, in addition to guiding toward good thoughts, words, and deeds, evoke a sense of hope, reliance on a higher power, and a desire for life, which is the same work that psychotherapists do to improve patients.

Zoroaster himself treated patients and, alongside using plants and surgery, used rhythmic prayers and incantations called manthra for

Music in ancient Iran was performed as a religious suggestion, which is observed today in relaxation exercises. (Kaviani, 1389 SH)

Another dimension of music's function and the impact of melody on body and mind should be sought in the writings and texts of philosophers, music theorists, and physicians. Abu Nasr Farabi (died 949 AD) made a significant contribution to the musical knowledge heritage of Muslims by authoring the book "Al-Musiqi Al-Kabir." In this book, Farabi, a philosopher and physician, explains in detail about music, its relationship with the soul, and its effect on emotions [8,9]. Farabi addresses various types of melodies and their purposes, and divides the impact of tunes in their two forms (composition and performance) into three categories. The first part, which is more well-known, is pleasant and soothing for humans, without stimulating artistic taste or simulating. The second category has the same characteristics, but also stimulates our imagination and creates images of objects in the mind [10]. The third category is the reaction of emotional states. When these three states are combined in one tone, that tone will be complete and therefore more effective. The complete tone comes from human voices, but musical instruments can also simulate some of its components. (Farabi, Al-Musiqi Al-Kabir)

Content analysis of texts and treatises related to music knowledge also shows that Iranian musicians were aware of the therapeutic function of music and described music as a way to maintain health and treat physical and mental illnesses [11,12]. Abdul-Mu'min ibn Safi al-Din Urmawi (1216-1294 AD), one of the famous scholars in the field of music, addressed the importance of music and its connection with medicine in his works (Urmawi) notes: "Philosophers have treated several diseases with the science of music: scales, modes, rhythms and strange melodies, such as consumption (disease and fever caused by grief), spasm, and tuberculosis" (Urmawi).

In this regard, Qabus-nama by Keykavus ibn Qabus Washmgir is one of the important works that contains many materials about the effect of music on spirit and soul. According to him, the greatest art of playing is that which corresponds to the nature and conditions of the listener.

Ibn Sina also has an extensive discussion about music in his book Shifa. For Ibn Sina, music was not just an art but an important scientific category. To the extent that he considers the science of music as part of the human body. His emphasis is on the point that the science of music also has a celestial concept based on which it periodically affects the main organs of the body and can be examined by physicians. According to Ibn Sina, the method of music therapy is effective at a specific time of day and night and along with beverages and dietary instructions useful for repelling diseases.

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Many Iranian philosophers and poets, such as Rumi and Hafez, often explored themes of music and its effect on the soul [13]. Their works reflect the belief that music transcends the physical realm and connects individuals to a higher consciousness.

In this article, we briefly examine various methods of music therapy and sound therapy that have influenced the treatment process of human spiritual and physical diseases in different aspects.

### **A. Music Therapy and Sleep Disorders**

Sleep disorders are a common issue among people in society, usually related to the quality and duration of sleep. Insomnia is one of the factors affecting human health, increasing the risk of heart disease, neurological disorders, and cancer. Some research's results indicate that memory loss and impaired concentration are both caused by insomnia.

Additionally, these issues indirectly affect daily functions and turn sleep problems into one of the main causes of road accidents. Also, sleep problems are often concurrent with mental health issues such as depression and anxiety, creating a bilateral relationship that can exacerbate existing conditions and disrupt the effectiveness of psychological interventions.

This pervasive health problem has attracted the attention of global researchers and has led to the extraction of a wide range of potential solutions. Among these, music has attracted a great deal of attention as a non-pharmacological intervention.

Sleep-promoting music may have common musical characteristics. Experimental studies focusing on internal music parameters such as rhythm, tone, notes, and genre have attracted scientific attention. The other research focus has concentrated on examining experimental paradigms to validate the effectiveness of music therapy, with the identification of neural signals emerging as a promising experimental model. Musical input directly affects brain wave patterns and peaks, and electroencephalographic (EEG) signals provide an observable way to identify sleep stages, providing an acceptable experimental paradigm for inducing, monitoring, and modulating sleep states in music-based conditions [14].

### **B. Sound Therapy Using Solfeggio Frequencies:**

In science, we continuously conduct research to observe how anxiety and post-traumatic stress disorder (PTSD) are related to negative energy and low frequencies [15]. Today, many resources are available to modern society to acknowledge how music and sound are inherent in our nature and have contributed to human evolutionary development.

In this section of the article, we discuss how sound therapy using Solfeggio frequencies is effective in healing physical, generational, and emotional damages that are embedded in our DNA.

Six electromagnetic sound frequencies, known as ancient Solfeggio tones, have been identified as keys to creating positive effects. By

examining how emotions, sounds, and negative feelings relate to ancient Solfeggio tones, we can identify them as effective tools for universal treatment methods. In science, we continuously conduct research to observe how anxiety and post-traumatic stress disorder (PTSD) are related to negative energy and low frequencies [16]. Today, many resources are available to modern society to acknowledge how music and sound are inherent in our nature and have contributed to human evolutionary development.

The main findings of Fauble's study indicate that "music and sound therapy can help us release damaged emotions and stop the downward cycle of PTSD."

Findings from research on different frequencies and how sound affects our spiritual bodies and energy, and its importance in treating negative traumas across different cultures and times, show that "spiritual chants had specific tones that calmed the mind, and people believed that performing religious ceremonies bestowed special spiritual blessings on their spirit and psyche. Solfeggio frequencies represent a common fundamental sound used in both Western Christianity and Eastern Indian religions." Early Christians, Eastern Indians, and Western Europeans all use ancient archetypal sounds, known as Solfeggio frequencies. "Solfeggio sounds were rediscovered in the 1970s by Dr. Joseph Puleo, when he found the frequencies using the Pythagorean method of numerical reduction to solve six mathematical patterns he had found in the Bible [17,18]. Also, Eastern Indian classical music uses 12 semitones like most Western classical music, but they use Just Intonation."

Native American chanting is often based on Just Intonation. Although this sound seems monotonous, music researchers have found that the monotonous sound contains multidimensional harmonies within itself [20]. If more research is done on music from older cultures, it would likely show that Just Intonation methods were used in creating music or chants.

This frequency is also known as the "Schumann Resonance Frequency," which is measurable around the Earth and equals 7.83 Hertz. Ancient Indian yogis call this tone "Om." The theory is that when our bodies are unbalanced and off center, they are inherently searching for this tone. Electromagnetic fields produced by humans can cause severe diseases in humans, and researchers in geophysics believe that human health is related to Earth's frequencies [21,22]. (Ivonin and Chang, 2013). Ivonin and Chang's study further defines the relationship between archetypal sounds, "Om" and Solfeggio frequencies.

In fact, to achieve the proper mental state during meditation, individuals must distance themselves from their conscious experiences and free their minds from thoughts. Therefore, individuals use archetypal sounds (for example, the famous "Om" sound) to keep their awareness focused on these sounds during meditation [23,24]. It can then be concluded that archetypal sounds effectively capture people's attention. These findings conclude that archetypal sounds are particularly effective in creating meditative

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states and their strong effect is on our unconscious mind and spirit. Solfeggio frequencies can specifically be used to help evolve our mind, body, and spirit.

Changing our music frequency and changing our mind frequency. By tuning to 432 Hz or 443/444 Hz, instead of 440 Hz which has become common since the second half of the twentieth century, we can tune the frequency of our mind, emotions, and bodies to a frequency harmonious with the earth, our own magnetic fields, and existence [25]. In addition to changing the common tuning to its original frequency, we can add tones and undertones that specifically match the type of music we create and the purpose of that music. Music to strengthen and create a sense of love and universal acceptance: can be 528 Hz.

Romantic music for sensual nights and real, close connection at the soul level: 639 Hz. For every intention a song has, there is a specific frequency (PRF) that harmonizes with it and expands it. Not only will the music be more in harmony with the natural world and human instinct, but it will likely bring musicians a larger and more loyal fan base as well as more income. (Fauble, 2016).

Music therapy and its connection to Solfeggio frequencies can even be traced to David Hulse's research, which identifies a set of six electromagnetic sound frequencies and their correlation with the six lost notes of the ancient Solfeggio scale: 396 Hz, 417 Hz, 528 Hz, 639 Hz, 741 Hz, 852 Hz.

Sound science is a useful tool that allows individuals to raise their vibrations and cultivate high-energy frequencies for physical/emotional/spiritual healing and obtaining abundance [26]. In my research, I discovered how sound can be simultaneously used with numbers, shapes, chakra healing, musical notes from instruments, and visualizations to address PTSD, anxiety, panic, and stress/mood management.

### **C. The Effect of Music on Depression During Pregnancy and Postpartum**

studies that have conducted on mothers suffering from postpartum depression, mothers who had moderate to severe depression symptoms and participated in 10 weeks of music and singing classes with their infants showed significantly faster improvement in symptoms compared to mothers who participated in regular care groups listening to music significantly reduces psychological stress, anxiety, and depression. Therefore, daily listening to music during pregnancy can create significant health benefits [27,28].

### **D. The Role of Music in Controlling Anxiety**

Anxiety is a widespread emotional experience, attracting the attention of both clinicians and researchers seeking accessible ways to reduce its impact. Amongst various non-pharmacological interventions, music emerges as a unique and adaptable tool for modulating anxious states [29,30]. Unlike language-based therapies or medications, music can influence mood and physiology almost instantly, bypassing the need for conscious processing and thus reaching individuals who might struggle with other approaches.

One reason music is particularly effective in anxiety control is its ability to shape our bodily responses. Rhythmic and melodic aspects of music can alter heart rate, breathing patterns, and even hormone levels, nudging the body towards relaxation. Slow tempos and harmonious sounds are frequently associated with decreased physical symptoms of anxiety, such as muscle tension and rapid breathing. This suggests that carefully chosen musical pieces can serve as a kind of "sound environment," guiding the anxious mind and body away from stress [31].

Furthermore, engaging with music often draws our attention outward rather than inward. When listening intently, the mind has less room to ruminate on worries or catastrophic thoughts that fuel anxiety. For some, creating music—singing, playing an instrument, or composing—offers an even more immersive escape, demanding focus and providing a sense of accomplishment that counters feelings of helplessness common in anxious states.

Music also provides a means for emotional identification and release. Through experiencing emotions expressed in music, listeners may feel their own feelings are validated or mirrored, helping them process difficult internal experiences. This emotional companionship creates a space where anxiety seems less overwhelming, making coping more manageable.

In summary, music's role in controlling anxiety rests on its ability to directly soothe the body, redirect attention, and support emotional processing. With these benefits, music stands out as an accessible ally—one that is available to many people, in various settings, and across cultures [32,33]. Continued exploration and mindful application of music could illuminate even more nuanced ways to harness its power in the journey toward mental well-being.

### **E. How Music Might Link Mind, Brain, and Immunity**

Music is often seen as a comfort or entertainment, but it may also act as a subtle influencer within our body, linking how we feel emotionally, how our brain responds, and how our immune system reacts. In this article, I introduce new ideas about how these connections might work beneath the surface.

When we listen to music, the brain's emotion centers light up. I propose that these moments of emotional arousal send signals along nerve pathways that reach far beyond the brain. Specifically, these signals could change how alert or relaxed our body feels, which in turn might adjust the activity of our immune cells.

Rhythm and melody, in this view, are not just pleasing sounds but act as codes the brain deciphers. Depending on their pattern, these sounds might 'tell' the brain to either prepare for action or to relax. A relaxed state could mean fewer stress signals are sent to immune cells, potentially allowing them to function more smoothly.

Furthermore, music that evokes memories or a sense of belonging—whether through lyrics or familiar melodies—might trigger a release of brain chemicals tied to social connection. These chemicals could indirectly boost the immune response by lowering

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feelings of threat or isolation, known factors that can weaken immunity.

If these ideas hold true, using personalized music interventions could become a tool to support patients during recovery, not just emotionally, but by navigating their brain-immune communication. Music could be adjusted for tempo, familiarity, or emotion, depending on what kind of support the person needs at the moment.

Future studies could test these relationships and reveal new healing uses for music.

### **F. The Impact of Music Therapy on Individuals with Autism**

Based on conducted research, music therapy acts like a bridge that helps individuals with autism enter new realms of communication and self-expression. By creating soundscapes tailored to these individuals' sensory preferences, music therapy can unlock hidden pathways in the mind and allow emotions and ideas to flow more freely. When rhythms and melodies are woven into daily activities, children may discover new ways to interpret the world around them. This can sometimes lead to unexpected breakthroughs; for example, a child who rarely speaks might hum their emotions, or someone who avoids eye contact might synchronize their movement with a group rhythm.

In general, dancing, singing, and playing instruments affect the motor functions and emotional control of these individuals. Additionally, listening to specific types of music and participating in music therapy groups can optimize the communicative and social skills of affected children.

When music therapy becomes part of a child's treatment from early childhood, the regulation of brain function and behavior can continue throughout life. Over time, music becomes a personal language and safe space where self-confidence and curiosity can gradually flourish.

### **3. Conclusion**

Music therapy represents the harmonious convergence of scientific rigor and artistic expression, emerging as a distinct and multifaceted discipline in the pursuit of mental well-being. While its roots may intertwine with complementary health practices, the contemporary evidence base positions music therapy as a dynamic and integral element in mental health care, capable of bridging clinical methodologies with the human need for meaningful connection and creative experience [34,35]. As our understanding deepens, music therapy stands poised not merely as an adjunct, but as a transformative force capable of reshaping how we understand and address the complex tapestry of mental health.

Music plays an important role in the functioning of our brain and body. Listening to music reduces the hormone cortisol and decreases stress while increasing the number of endorphins in the bloodstream. Endorphins are a type of neurotransmitter that the brain sends to the rest of the body, causing feelings of happiness [36-39]. This process leads to increased self-confidence and

self-esteem in individuals. On the other hand, the brain attempts to prevent nerve cells from receiving pain signals by releasing endorphins. In this way, music plays an important role in mourning ceremonies or various rituals by reducing physical and spiritual pain and suffering.

Other effects of music include activating different parts of the brain, helping with the learning process and strengthening memory, delaying cognitive decline in adults, improving mood, creating motivation for greater interaction with others, and ultimately reducing symptoms of depression.

In general, music therapy has increasingly attracted researchers' attention due to its minimal or no side effects and ease of use, such that it is predicted that in the near future, music therapy will be positioned as a first-line treatment in disease management.

### **Footnotes**

Safi al-Din Urmawi: He was a musician, calligrapher, literary scholar, prosodist, and pioneer of the Muntazimiyya school. Among his famous books on music are "Al-Risalah al-Sharafiyya" and "Al-Adwar fi al-Musiqi."

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