

Review Article

# The Effectiveness of Music Therapy on Psychological, Cognitive, and Physical Health Outcomes: A Narrative Review of Contemporary Research

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**Abstract** - Music therapy is a growing health care approach in psychological, neurological, and rehabilitation medicine. This narrative review critically examines the effectiveness of music therapy in various health and care contexts from the years 2015 to 2026. The keywords related to music therapy, mental health, cognition, and rehabilitation were used to search in relevant literature using various databases. The review compiles the results of empirical studies, randomized controlled trials, systematic reviews, and meta-analyses on the therapeutic role of music-based interventions. The results suggest that music therapy has a positive effect on the reduction of anxiety, depression, stress, emotional distress, memory recall, communication, attention, motor rehabilitation, pain management, and physiological regulation. Importantly, this review makes clear that the evidence is not consistent across the domains, with the strongest and most consistent empirical support for psychological outcomes, but with methodological limitations. This review also explores the cross-disciplinary relevance of music therapy in integrative healthcare. The consistent research bias from the Western perspective and the growing use of digital and AI-aided music therapy. The methodological diversity, the scarcity of longitudinal research, the low number of participants in many studies, the lack of clarity in intervention procedures, and the absence of many studies that address null or mixed results limit the generalizability and standardization of conclusions. Overall, the current evidence is good in supporting music therapy as a legitimate complementary intervention. However, it is necessary to have methodologically standardized research in order to implement music therapy as an intervention in evidence-based practice.

**Keywords** - Cognitive Rehabilitation, Integrative Healthcare, Music Therapy, Narrative Review, Psychological outcomes.

## 1. Introduction

### 1.1. Background

Music therapy has become an important interdisciplinary healthcare intervention that is rooted in psychology, neuroscience, rehabilitation medicine, and complementary therapy (Bradt et al., 2021). Music therapy is defined by the American Music Therapy Association (AMTA) as the clinical and evidence-informed application of music-based interventions to achieve individualized therapeutic outcomes, and has become a recognized therapeutic and rehabilitative tool in modern healthcare systems (AMTA, 2024). Music therapy has long been recognized as an art form to express emotions and to support recreational wellbeing and has had a long history of use in psychiatric facilities, oncology departments, rehabilitation centers, dementia care centers, and intensive care units (Fancourt & Finn, 2019). As music therapy has expanded, so has integrative Medicine by incorporating evidence-based and complementary practices alongside conventional medical care for the enhancement of patient wellbeing and healthcare outcomes (Koithan, 2018).

With the rise in mental health disorders, neurological disorders, chronic pain, and stress-related illnesses, there has been a growing interest in the world for non-pharmacological therapeutic approaches (World Health Organization (WHO), 2022). Arts-based and non-pharmacological interventions have a significant role in supporting psychological resilience, emotional wellbeing, rehabilitation, and quality of life, according to the WHO (2019). The potential of music therapy to address psychological, cognitive, and physiological health challenges with accessible, low-risk interventions has led to a growing scholarly interest in the field (de Witte et al., 2020). Other up-to-date medical literature also indicates that music therapy can be used alongside pharmacological treatment and also lessen reliance on drugs for some patient groups (Wang et al., 2018).

Although numerous studies have been published, there is still a lack of systematic evidence synthesis in the combined psychological, cognitive, and physical settings. Most of the reviews already published address a specific condition or



population, not considering music therapy as a cross-domain intervention (e.g., dementia or cancer pain). Also, numerous studies reporting null or mixed results are underrepresented in the literature and may exaggerate effect sizes due to a positive publication bias. This review fills these gaps by consolidating evidence from each of the three domains and explicitly considering null findings, and critically considering methodological inconsistencies that reduce the extent to which present conclusions can be generalised.

While much has been written about music therapy in the psychological, cognitive, and physical healthcare setting, the evidence is not consistently available. Although stress reduction, regulation of emotions, and anxiety management are psychological outcomes, they show relatively high consistency compared to cognitive rehabilitation and physical recovery, which show a clear methodological inconsistency and a limited number of rigorous null-finding studies. Importantly, studies that don't find any or mixed findings, such as Gardener et al. (2025) systematic review, which noted that there was no evidence of mood improvement in stroke patients, and only selected evidence for cognitive improvement in patients with Parkinson's disease or traumatic brain injury, do not get the same level of scholarly attention as studies that did find positive results. This is an asymmetry that is directly addressed in this review, where there is a publication bias concern. The present paper thus suggests that the field of psychological healthcare is the most well-supported venue for music therapy, whereas the cognitive and physical applications of music therapy need more longitudinal validation in the form of standardization and a more honest engagement with conflicting evidence.

### **1.2. Theoretical Foundations**

There are a number of interdisciplinary models based in neuroscience, psychology, and behavioural Medicine that support the effectiveness of music therapy. According to NPT, music stimulates several brain regions at once, such as the limbic, hippocampus, amygdala, the cerebellum, and the prefrontal cortex, which are related to memory, emotion management, attention, and motor coordination (Sihvonen et al., 2017). Neuroimaging research shows that musical stimulation can modulate the activity of the neurochemical system through the regulation of dopamine, serotonin, and cortisol, which are linked to mood, stress reactions, and emotional processing (de Witte et al., 2020). Music therapy is increasingly used to treat anxiety, depression, trauma-related disorders, and neurological rehabilitation (Leubner & Hinterberger, 2017), and this is due to these neurological responses.

The theory of neuroplasticity reinforces the theory behind music therapy. Neuroplasticity is the brain's ability to change neural pathways based on stimuli in the environment and repeated experiences (Mofrad et al., 2021). There is evidence of positive effects of music interventions on cognitive

functions and neural recovery in the cases of stroke, Parkinson's disease, dementia, and traumatic brain injuries (Särkämö & Sihvonen, 2018). For instance, rhythmic auditory stimulation has been shown to be beneficial for motor coordination and gait rehabilitation, as the technique helps to synchronize the sensorimotor system within the neural network (Mofrad et al., 2021). The default mode network and dopaminergic pathways were also mentioned as being important mediators of music therapy's cognitive effects, and were identified as a priority for further research (Mulia et al., 2026).

Moreover, psychodynamic theory accounts for the role played by music in the expression of emotions, the unconscious processing of information, and symbolic communication between patients with psychological suffering and music therapists (Mössler et al., 2019). Music therapy also enables people to externalize emotions that might not be able to be put into words, helping to facilitate emotional catharsis and engagement in therapy.

At the same time, the cognitive-behavioral mechanisms indicate that music therapy can affect maladaptive thoughts and behaviors using relaxation, sensory stimulation, guided imagery, and emotional regulation strategies (Aalbers et al., 2017). These views are similar to the biopsychosocial model of health, which views health as the interplay of biological, psychological, and social factors, not just physiological functioning (Engel, 2018). In this context, music therapy has not only a specific role in reducing symptoms, but also in social interaction, emotional health, and Quality of Life (QOL) (Fancourt & Finn, 2019).

### **1.3. Research Problem**

Although music therapy has been increasingly introduced and applied in various health fields, there are still gaps in its measurable effectiveness in different health fields and patients (Tang et al., 2020). In existing studies, methodological variations can often be found, such as the length of time spent on the intervention, the type of music used, the participant, the method used, and the outcome measures (de Witte et al., 2020). In addition, most clinical studies have small numbers of participants and have only short follow-up periods and short interventions, limiting the generalizability and reliability of the results (Aalbers et al., 2017).

One of the many issues that has not received much attention is that the studies that report positive effects of music therapy should not be set aside, but should be incorporated into the evidence base even if they do not report statistically significant results, such as the lack of evidence for reduction in pain in some low back pain contexts (Getie et al., 2026) or the limitations of using music therapy in the field of neurological rehabilitation (Gardener et al., 2025). Without doing so, the apparent effect sizes are overestimated, and the credibility of clinical recommendations is undermined.

#### **1.4. Research Aim**

The present review critically analyzes and synthesizes the latest evidence from the literature published from 2015 to 2026 regarding music therapy's efficacy in psychological, cognitive, and physical health benefits. This paper attempts to evaluate the therapeutic potential of music-based interventions while exploring methodological shortcomings and areas requiring further research for music therapists in interdisciplinary healthcare.

This review differs from previous narrative review on three aspects: first, it covers three health domains (psychological, cognitive and physical) in one synthesis instead of one health domain; second, it includes and deliberately incorporates null and mixed findings of previous studies (Gardner et al., 2025, Getie et al., 2026); and third, it covers literature from up to 2026, including emerging literature about AI-assisted and digital music therapeutics, which is not addressed in most existing reviews.

#### **1.5. Research Questions**

- What is the effectiveness of music therapy in enhancing psychological health outcomes, including anxiety, depression, and stress regulation? And what are the limits of effectiveness?
- What cognitive benefits can be attributed to music therapy interventions in patients with neurological and developmental disorders, and in which areas is it lacking?
- How much do music therapies support physical rehabilitation, pain management, and physiological wellbeing, and what does it mean when there are conflicting findings?

## **2. Methodology**

### **2.1. Review Design**

The method used in this study is a narrative literature review, which is used to summarize and synthesize the most current studies regarding the effectiveness of music therapy on psychological, cognitive, and physical health outcomes.

A narrative review was chosen as the method of reviewing the literature, as it allows for an interdisciplinary assessment of results from psychology, neurology, rehabilitation medicine, and complementary healthcare research (Ferrari, 2015). Narrative reviews offer a more general analytical interpretation of a variety of methodologies, theoretical frameworks, and therapeutic applications as they appear in the literature, rather than a focus on narrowly focused clinical questions, as is done in systematic reviews (Snyder, 2019).

This method is especially applicable to music therapy research because music therapy has been seen to be a multi-dimensional therapy, with diversity in research methods that has been found across various healthcare facilities and patient groups. Importantly, this review includes studies that reported

both null findings as well as mixed and negative findings in addition to positive findings, to ensure that a more comprehensive and accurate representation of the existing evidence base is provided.

### **2.2. Data Sources**

Electronic academic databases, such as Scopus, PubMed, JSTOR, Google Scholar, and ScienceDirect, were used to identify the relevant literature. The databases chosen are because they present peer-reviewed journal articles, systematic reviews, randomized controlled trials, and interdisciplinary healthcare research related to music therapy and integrative Medicine. Citation tracking and reference list analysis of important articles were used to locate additional scholarly sources to maximize the extent of literature covered and minimize source omission (Snyder, 2019).

### **2.3. Inclusion Criteria**

Peer-reviewed journal articles published in English from 2015 to 2026 were included in the review. Studies were chosen if they included psychological, cognitive, or physical health outcomes about the effectiveness of music therapy interventions.

Empirical studies, clinical trials, randomized controlled trials, meta-analyses, and systematic reviews of music therapy for various patient populations and healthcare settings were included as sources. The decision on who is to be included in the studies was based on the preference of the publications that were published in high-impact and indexed journals, so that it will have methodological rigor and academic reliability.

### **2.4. Exclusion Criteria**

The following content categories were excluded: Non-peer-reviewed articles, conference abstracts, editorials, opinion papers, dissertations, and unpublished manuscripts. Research that failed to provide sufficient information about the participants or that were not clearly defined with music therapy interventions were also excluded.

In order to keep the review focused on interventions with evidence for music therapy and not on recreational music engagement, articles that were only based on recreational music were excluded.

### **2.5 Search Terms**

The literature search employed combinations of keywords and Boolean operators across databases. Search terms included: "music therapy AND mental health," "music therapy AND cognition," "music therapy AND rehabilitation," "music therapy AND anxiety," "music therapy AND depression," "music therapy AND dementia," "music therapy AND physical health outcomes," "music therapy AND null results," and "music therapy AND negative findings." The deliberate inclusion of search terms targeting null and mixed results is a methodological choice intended to reduce positive-publication bias within this review.

**Table 1. Literature search and selection summary**

Stage	Details
Databases searched	PubMed, Scopus, Google Scholar, JSTOR, ScienceDirect
Date range	2015–2026
Languages	English
Study types included	RCTs, meta-analyses, systematic reviews, empirical studies, Cochrane reviews
Inclusion criteria	Peer-review studies reporting psychological, cognitive, and physical health outcomes of music therapy interventions
Exclusion criteria	Non-peer-reviewed articles, conference abstracts, editorials, opinion papers, recreational music studies, dissertations
Studies included in the final review	21

### 3. Literature Review and Critical Analysis

#### 3.1. Psychological Health Outcomes

The psychological impact of music therapy has been well studied and is known to impact anxiety, depression, stress regulation, trauma healing, and emotional wellbeing. There is growing evidence in the literature that music therapy could be an effective complementary therapy in mental health care settings because of its ability to affect emotional processing, neurochemical regulation, and therapeutic communication (de Witte et al., 2020). Neurological and psychodynamic studies indicate that music provokes emotion, yet also engages areas of the brain that regulate emotion and stress response mechanisms (Leubner & Hinterberger, 2017).

Meta-analyses suggest that there are significant positive psychological effects of structured music therapy interventions. In a meta-analysis of RCTs, Tang et al. (2020) found that music therapy had a significant effect on decreasing depressive symptomology in a variety of patient groups. A particularly noteworthy finding of the study, however, was that the music therapist's interventions were associated with greater therapeutic response than the passive listening to the music, demonstrating the need for clinical structure and therapeutic interaction, rather than passive music listening alone. In another study, Aalbers et al. (2017) reported that music therapy enhanced emotional expression, social engagement, and mood stabilization among patients with depression, showing comparable effect sizes as other proven psychological interventions in similar contexts.

In a systematic review and meta-analysis, de Witte et al. (2020) found medium to large effects of music interventions on physiological and psychological stress outcomes, such as cortisol, heart rate variability, and self-reported anxiety. Research in hospital environments shows that music therapy can alleviate preoperative anxiety, cancer patients' emotional distress, and psychological discomfort in intensive care units (ICUs) (Bradt et al., 2021). A significant development in 2026 research is the concept of social music prescription presented

by Loewy and Batiste (2026) in *Voices: A World Forum for Music Therapy*, who suggest that community-level psychological interventions, such as collective music-making, could be used to deal with depression risk in ways that individual clinical music therapy cannot replicate. This extends the psychological evidence to the public health arena.

Neurochemical and emotional processing is a common way in which the therapeutic efficacy of music therapy is explained. Music induces dopamine secretion in brain reward areas and decreases cortisol production related to chronic stress and anxiety (Leubner & Hinterberger, 2017). Furthermore, music allows emotional catharsis by facilitating the expression of emotions and traumatic experiences that may not be easily worded using traditional psychotherapy, according to psychodynamic approaches (Mössler et al. 2019). In a scoping review published in *Frontiers in Human Neuroscience*, Demetriou and Bowling (2026) reviewed the literature on music-based digital therapeutics (mDTs) for stress, anxiety, and depression, and concluded that high-groove rhythms could dynamically engage attention and sensorimotor systems, which might disrupt negative cognitive processes like anxious perseveration. The findings indicate that the psychological effects of music therapy are both neurobiological and attentional, and that new digital technologies could increase the potential scope of the therapeutic effects of music therapy.

Despite the positive results, the results of the critical analysis show some methodological shortcomings. There are several methodological inconsistencies, such as varying lengths of intervention, choice of musical genre, level of therapist involvement, and outcome measure scales (de Witte et al., 2020). Some studies use passive listening approaches, other studies use active approaches like singing, improvising, or playing instruments, and it is difficult to compare across studies. Moreover, much of the research has been based on self-reported emotional measurements that carry subjectivity and decrease measurement reliability.

**Table 2. Summary of key studies included in the review**

Author(s) & Year	Study Type	Domain	Population	Key Finding
Aalbers et al. (2017)	Cochrane review	Psychological	Depression patients	Improved emotional expression, mood stabilization, and social engagement; effect sizes comparable to other psychological interventions
Leubner & Hinterberger (2017)	Review	Psychological	Depression patients	Music induces dopamine release and reduces cortisol; supports neurochemical basis for anxiety and depression treatment
Sihvonen et al. (2017)	Review	Cognitive/Physical	Neurological rehabilitation patients	Rhythmic auditory stimulation improves speech recovery, motor planning, gait, and cognitive flexibility post-stroke
van der Steen et al. (2018)	Cochrane review	Cognitive	Dementia patients	Improved autobiographical memory recall, emotional wellbeing, and social interaction
Särkämö & Sihvonen (2018)	Review	Cognitive	Ageing-related neurological disorders	Music engages preserved neural pathways for long-term memory; supports cognitive and emotional rehabilitation
Mössler et al. (2019)	Cochrane review	Psychological	Schizophrenia patients	Music therapy facilitates emotional catharsis and non-verbal therapeutic communication
de Witte et al. (2020)	Systematic review & meta-analysis	Psychological /Physical	Mixed clinical populations	Medium-to-large effects on physiological and psychological stress outcomes, including cortisol and heart rate variability
Gómez-Romero et al. (2020)	Systematic review	Cognitive/Psychological	Elderly dementia patients	Reduced depression symptoms; improved cognitive stimulation and quality of life.
Tang et al. (2020)	Meta-analysis of RCTs	Psychological	Mixed clinical populations	Significant reduction in depressive symptomology; therapist-led sessions are more effective than passive listening
Mofrad et al. (2021)	Review	Cognitive/Physical	Music training populations	Music training promotes neuroplasticity, enhances neural connectivity, and executive function
Bradt et al. (2021)	Cochrane review	Physical/Psychological	Cancer patients	Reduced pain intensity, anxiety, and analgesic medication use during medical treatment
Geretsegger et al. (2022)	Cochrane review	Cognitive	Children with ASD	Enhanced social communication, emotional responsiveness, and interpersonal interaction
Lorek et al. (2023)	Empirical study	Physical	ICU patients	Reduced heart rate, blood pressure, and respiratory distress; decreased physiological stress response
Jiao (2025)	Review/Conceptual	Cognitive/Physical	General/neurological patients	AI-driven biofeedback integrated with music therapy shows early promise for personalized neuroplasticity targeting.
Gardener et al. (2025)	Systematic review of RCTs	Cognitive/Psychological	Parkinson's disease, TBI, stroke, Huntington's disease patients (469 patients, 10 studies)	Cognitive benefit found in Parkinson's/TBI but not stroke or Huntington's; emotional wellbeing improved in stroke survivors, but mood was not significantly impacted.
Demetriou & Bowling (2026)	Scoping review	Psychological	Stress, anxiety, and depression populations	High-groove rhythms engage attention and sensorimotor systems, potentially disrupting anxious perseveration; supports digital music therapeutics.
Du et al.	Empirical	Physical/Cogn	Mixed neurological	Individualized music components

(2026)	study	itive	disorder patients	outperformed standardized protocols across neurological diagnoses.
Getie et al. (2026)	Systematic review & meta-analysis of RCTs	Physical	Pain populations	Overall SMD = -2.18 in pain reduction; largest effects in Asian populations (SMD = -2.41) and burn patients (SMD = -3.66); high heterogeneity noted
Li et al. (2026)	Systematic review & meta-analysis	Cognitive	Older adults with mild cognitive impairment	SMD = 0.58 (95% CI: 0.37–0.78, $p < .001$ ) on MMSE scores; low heterogeneity ( $I^2=42.6\%$ )
Loewy & Batiste (2026)	Conceptual/Commentary	Psychological	Community/general population	Social music-making as a community-level intervention for depression risk extends evidence to the public health arena
Mulia et al. (2026)	Systematic review & meta-analysis	Cognitive	Aging and clinical populations	Overall SMD = 0.46 on MMSE outcomes; passive listening delivered over 3 months showed greater effects (SMD = 0.62)

Limited generalizability due to small sample sizes and short intervention periods. A major restriction is cultural diversity and personal taste in music. Reactions to music are very subjective and can be different depending on the cultural background, experiences, and social context of the listener. The majority of high-powered RCTs in this area come from Europe and North America to the exclusion of patient populations with other musical traditions, with music identity/cultural links to music, or healthcare access, and this raises questions surrounding the transferability of established protocols to other patient populations. As long as psychologically-oriented music therapy research does not make a conscious effort to expand its geographic and demographic reach, claims about universal applicability will be premature.

### 3.2 Cognitive Health Outcomes

The impact of music therapy on cognition has become more widely studied in patients with neurological disorders, dementia, Alzheimer's, autism spectrum disorder, and TBI patients. Music therapy has been shown to positively impact cognitive functioning, such as memory recall, attention, language processing, executive functioning, and neuroplastic adaptation (Särkämö & Sihvonen, 2018). The results are corroborated by neuroscientific research showing that music induces broad and widespread activation of neural networks related to cognition, learning, and memory formation.

Music therapy has been widely studied in the field of dementia and Alzheimer's disease. A Cochrane systematic review by van der Steen et al. (2018) found that music-based therapeutic interventions boosted emotional wellbeing, recall of autobiographical memory, and social interaction among people with dementia. Likewise, Gómez-Romero et al. (2020) reported that music therapy helped to alleviate depression symptoms and to improve cognitive stimulation and quality of life in elderly patients with dementia. According to researchers, familiar music signals a preserved neural pathway for long-term memory, which helps patients temporarily reconnect with autobiographical experiences despite their

progressive cognitive decline. In a meta-analysis of eight studies published in *Medicine* (2026), Li et al. found low heterogeneity ( $I^2 = 42.6\%$ ) and a standardized mean difference (SMD) of 0.58 (95% CI: 0.37–0.78,  $p < .001$ ) for older adults with MCI who received music therapy compared to controls, measured by Mini-Mental State Examination (MMSE) scores. In another synthesis of fourteen studies in *Frontiers in Public Health*, Mulia et al. (2026) identified a significant SMD of 0.46 on MMSE outcomes, with passive listening-based therapies, delivered for over 3 months, having greater effects (SMD = 0.62). Combined, these 2026 meta-analyses provide the most rigorous quantitative evidence to date for music therapy's cognitive benefits in aging populations, but both research papers warn that there is still a need for standardisation of protocols.

Music therapy has also been shown to have positive effects in autism spectrum disorder (ASD). According to Geretsegger et al. (2022), music interventions effectively enhanced social communication, emotional responsiveness, and interpersonal interaction for children with ASD. Music engages several sensory processes and evokes emotion, which can be alternative communication processes for people with language or social processing challenges.

The cognitive benefits can be explained by the concept of neuroplasticity theory. When engaging with music, multiple sensory and motor systems are activated at the same time, enhancing the neural connectivity and adaptive brain reorganization (Mofrad et al., 2021). Research on stroke rehabilitation has shown that rhythmic auditory stimulation engages sensorimotor neural networks to enhance speech recovery, motor planning, and cognitive flexibility (Sihvonen et al., 2017). A positive counterpoint to this optimism is provided by Gardener et al. (2025), who performed a systematic review of RCTs from 10 studies across 469 patients with Parkinson's disease and traumatic brain injury, finding that music therapy enhanced cognitive function, but not cognitive functioning in stroke or Huntington's disease patients. Furthermore, emotional wellbeing improvements

were found in the stroke survivors, and mood was not significantly impacted. This pattern of results of a specific domain and diagnosis must be taken as a corrective to overgeneralised claims of the cognitive efficacy of music therapy and emphasises the importance of analysing populations disaggregated rather than making umbrella statements about the role of music therapy in neurological rehabilitation.

Furthermore, several studies are not sufficiently clear in their separation of music and the complete social interaction that encompasses therapeutic sessions (Särkämö & Sihvonen, 2018). The other fundamental confound is that the cognitive improvements in dementia patients may be more a matter of social engagement and emotional stimulation than the musical element itself. This question can't be answered without social contact control conditions without the music. In addition, the different types of interventions, their frequency, and the training of therapists make it difficult to develop standardized treatment protocols and to evaluate long-term therapeutic effectiveness. The use of music therapy combined with a new integration of AI-based biofeedback and brainwave entrainment (Jiao, 2025) could potentially enable targeting of neuroplasticity mechanisms at a more individual level, but it is still in an early stage of validation.

### **3.3. Physical Health Outcomes**

Music therapy has been shown to have benefits not only for psychological and cognitive functioning, but also in therapeutic use in physical healthcare and rehabilitation environments. Recent studies acknowledge music therapy as a complementary treatment for pain management, cardiorespiratory stabilization, motor rehabilitation, and sleep improvement (Bradt et al., 2021). Music's effects on autonomic nervous system regulation, hormonal activity, and sensorimotor synchronization are key components of these physiological effects and are often attributed to music.

There are many physical applications studied, one example being pain management. Bradt et al. (2021) determined that music therapy was effective in decreasing pain intensity, anxiety, and analgesic medication usage of oncology patients during medical treatment. Getie et al. conducted a systematic review and meta-analysis of multiple RCTs and reported a statistically significant overall decrease in pain severity with a standardized mean difference of -2.18 (95% CI: -2.91, -1.44;  $p < .001$ ) from the data they analysed in *Discover Psychology* 2026.

The results of a subgroup analysis showed the highest effects on pain-related outcomes in the Asian population (SMD = -2.41) and in burn patients (SMD = -3.66), indicating that patient population and context may substantially moderate effects on pain-related outcomes, and possibly cultural factors. The authors, however, make clear that there is significant variation between the studies and that choices of

music by individual patients will make standardization of music across clinical settings challenging. It is important to note that this is a substantial qualification: although the effect size was "statistically significant", it may not necessarily be consistent across health care settings, and the review also points to the necessity of further research to take cultural and demographic factors into account.

Music therapy has likewise been proven to be effective in neurological rehabilitation and motor rehabilitation. Rhythmic auditory stimulation is broadly used in stroke and Parkinson's disease rehabilitation programs, enhancing gait coordination, balance, and motor timing (Sihvonen et al., 2017). In a *Frontiers in Psychiatry* paper by Du et al. (2026), they investigated how music-based interventions were implemented with patients who were affected by various neurological disorders and noted that the key to realizing physical rehabilitation benefits lay in the adaptation of the music components to the specific disorder. Music therapy was not as successful when standardized protocols were used across all neurological diagnoses as when individualized recommendations were used, indicating important implications for clinical use.

Another important field of research is physiological regulation. Research in Intensive Care Units has shown that therapeutic music interventions lower heart rate, blood pressure, respiratory distress, and physiological stress responses in critically ill patients (Lorek et al., 2023). These results are also consistent with sleep studies, in which music has been shown to enhance sleep and decrease insomnia in hospitalized and older adults (de Witte et al., 2020). These physiologic changes have been attributed to decreases in sympathetic nervous system activation and cortisol production.

There are strong indications that music therapy with physical health interventions has the potential for positive results, but there are also significant weaknesses in the existing literature. The Getie et al. (2026) meta-analysis also identified important aggregate effects on pain, albeit with high heterogeneity, and so it is not clear whether the average effect sizes are valid for specific patient populations. A large number of physical rehabilitation studies have a limited number of participants and a limited intervention period.

In addition, multimodal treatment settings in which music therapy is provided in conjunction with conventional physiotherapy, medication, and/or occupational therapy present the challenges of separating the independent contribution of the music therapy treatment. With no universal clinical guidelines, it can also limit the use of music therapy in general clinical rehabilitation. Suggesting that there is an independent effect of the music intervention on the physical outcomes will need to be carefully studied in isolation versus standard care and music therapy plus standard care until then.

## 4. Discussion

### 4.1. Comparative Strength of Evidence Across Domains

One of the key results of this review is that there is a differential level of evidence in psychological, cognitive, and physical health, which has implications for research prioritization and for clinical implementation. The psychological outcomes have the strongest empirical evidence: There are more well-designed and scientifically sound RCTs, robust meta-analysis studies of mental health, and measurable short-term emotional outcomes. The effect sizes found for anxiety reduction, depression symptom relief, and stress modulation are high for various patient groups and health care settings (Tang et al., 2020; de Witte et al., 2020; Aalbers et al., 2017).

The evidence for cognitive rehabilitation has increased in rigor, especially after the 2026 meta-analyses by Li et al. and Mulia et al. provide quantified, low-heterogeneity evidence of benefits for those with mild cognitive impairment and aging-related neurological disorders, respectively. Important caveats, however, to the overgeneralization of the null findings reported by Gardener et al. (2025) in the domain of stroke and Huntington's disease patients. Cognitive evidence base is not generalizable, but promising for certain diagnoses. Evidence for physical health is the least certain. Getie et al. (2026) and Bradt et al. (2021) report clinically relevant effects on pain, but the multimodal treatment confounds, the high level of heterogeneity, and the lack of ability to isolate the independent contribution of music therapy decrease confidence.

The literature on physical rehabilitation is also the most susceptible to expectancy and placebo effects, especially if the primary measure is patient-reported outcomes like pain intensity. Currently, music therapy seems to be most effectively used as an emotional/psychological regulatory therapy, with the physical benefits in part being due to a reduction of anxiety and an attention diversion. This should not reduce its physical health value, but rather highlight that clinical implementation should be presented that way.

### 4.2. Interdisciplinary Importance

From this review, it is clear that music therapy is an interdisciplinary therapy with great significance in current health care systems. Music therapy incorporates psychological, neurological, and rehabilitation medicine, and integrative healthcare principles, alongside shifts towards more patient-centred and holistic healthcare (Fancourt & Finn, 2019). In the field of psychology, music therapy enhances emotional expressions, trauma healing, behavior control, and social interaction in verbal and non-verbal therapeutic communication processes (Mössler et al., 2019). The latter are especially relevant in the context of applications for people suffering from depression, anxiety disorders, schizophrenia,

trauma, or post-traumatic stress disorders (Aalbers et al., 2017).

In neurology, studies on neuroplasticity and auditory-motor synchronization highlight the potential of music interventions to promote adaptive neuroplasticity and facilitate functional recovery after neurological trauma (Mofrad et al., 2021). New research on music-based digital therapeutics (Demetriou & Bowling, 2026) and on AI-driven, personalized systems for music therapy (Jiao, 2025) indicates that this area is moving towards a technologically enhanced era where therapeutic delivery can be personalized to the individual's neurobiological profile on the fly. The above example of social prescribing, as outlined by Loewy and Batiste (2026), illustrates music therapy's interdisciplinary relevance in a wider context beyond clinical practice, to public health policy.

Music therapy is considered generally non-invasive, cost-effective, and flexible to be implemented in a range of healthcare contexts, and therefore has great potential to be integrated more widely into integrative Medicine and long-term patient care strategies (Fancourt & Finn, 2019). But wider usage needs to be preceded by more methodological standardization and an honest recognition of the limitations of what the evidence now supports.

### 4.3. Research Gaps

Although the body of literature pertaining to the use of music therapy continues to grow, there are still some significant areas of research needed. A first limitation is that it lacks long-term evaluations of therapeutic efficacy and the sustainability of therapeutic effects (de Witte et al., 2020). Most of the current research is limited to short-term interventions, so it is challenging to know if the benefits of psychological, cognitive, and physiological changes last after the treatment period.

The second major problem is the bias of Western research. Much of the research on music therapy comes from Europe and North America, which presents a lack of knowledge about the impact on therapeutic results of different cultural identities, levels of musical familiarity, and availability of healthcare for different populations (Fancourt & Finn, 2019). As shown in this study by Getie et al. (2026), regional differences in pain reduction were found, with larger effects reported for pain reduction in Asian populations, which demonstrates that cultural factors should not be treated as an ancillary factor, but as a key moderator of the outcomes of music therapy. Until cross-cultural research is not the exception, the validity of current recommendations for use on a worldwide scale should be adopted with caution.

A third area of concern is the consistent failure to report negative and null findings. There is also a lack of standardized interventions on the global level, which limits the use of music

therapy in mainstream healthcare policy and guidelines (Bradt et al., 2021). Future reviews and meta-analyses should actively look for registered trials with null results and include these with the positive results.

#### 4.4. Future Research Directions

Further studies should focus on longitudinal studies with larger groups in clinical settings that assess the long-term benefits of music therapy in various healthcare settings and patient populations (Tang et al., 2020). More standardized methods in terms of intervention structure, session length, therapist qualifications, and assessment tools are required to enhance empirical reliability and implementation in health care (de Witte et al., 2020). Systematic variations (dismantling studies) of individual elements of music therapy to pinpoint active therapeutic ingredients are especially necessary in physical and cognitive rehabilitation settings.

Research using neuroimaging techniques such as functional magnetic resonance imaging (fMRI), electroencephalography (EEG), and neural connectivity analysis can help to better understand the neurological mechanisms responsible for the positive effects of music therapy (Mofrad et al., 2021; Mulia et al., 2026). AI Music Therapy, delved into by Jiao (2025), is a promising avenue for future research, as it can facilitate personalized music therapy by monitoring emotional responses, analyzing biometric data, and adjusting music based on those insights. Further, research needs to be expanded in non-Western contexts, such as cross-cultural and interdisciplinary studies to explore the relationship between culture, cultural identity, music tradition, and accessibility to healthcare and its relevance in the effectiveness of music therapy across the globe.

## 5. Conclusion

This review critically analyzed current publications from the last six years (from 2015 to 2026) relating to the effectiveness of music therapy in psychological, cognitive, and physical health. The results show that Music Therapy has a high therapeutic value as a complementary and interdisciplinary health intervention with a therapeutic potential to improve emotional health, cognitive functioning, and physiological health outcomes (de Witte et al., 2020; Bradt et al., 2021). But this review has suggested all along that there is not a consistent body of evidence, and that there is a

need to acknowledge the areas in which it is weaker before making a valid clinical translation.

In psychological health care services, there is consistent evidence that music therapy decreases anxiety, depression, stress, and emotional distress and that these effects are linked to emotional regulation, neurochemical stimulation, and therapeutic communication (Tang et al., 2020; Aalbers et al., 2017). Furthermore, research into the emerging social prescribing model (Loewy & Batiste, 2026) and digital therapeutics (Demetriou & Bowling, 2026) extends the evidence base of psychology into public health and technology-enabled delivery.

Recent Meta-analyses (Li et al., 2026; Mulia et al., 2026) have meaningfully advanced the cognitive evidence base, offering quantified support for the benefits of music therapy for the aging and mild cognitive impairment populations, respectively. However, the absence of any findings for specific neurological diagnoses (Gardener et al., 2025) highlights the need for diagnosis-specific rather than general statements. In the realm of physical healthcare, new meta-analytic data on pain management (Getie et al., 2026) and the challenge of separating the effects of music therapy from other treatments, such as collaborative approaches to neurological rehabilitation (Du et al., 2026), support the use of music therapy as an adjunct to physical healthcare.

The most important challenges in the field are methodological heterogeneity, small sample sizes, and the lack of longitudinal studies, as well as publication bias in Western samples and a lack of attention to null results. These shortcomings are not an academic issue, but essential for responsible clinical application. With the growing emphasis on comprehensive approaches to patient care and the increasingly patient-centered service delivery, music therapy could become an important part of interdisciplinary care; however, music therapy must be applied in a methodologically rigorous, culturally diverse, and intellectually honest manner.

## Ethical Statement

This review did not involve primary data collection, human participants, or animal subjects, and therefore did not require ethical approval. No unpublished or confidential data were used. The author declares no conflicts of interest and received no funding for this work.

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