ROLE OF CARNATIC MUSIC THERAPY ON PSYCHOLOGICAL WELL-BEING

ABSTRACT

India's classical music heritage embodies centuries of tradition, emotion, and spiritual depth. Among its two major systems, Carnatic music from South India stands out for its intricate melodic (raga) and rhythmic (tala) structures and its deep orientation toward vocal expression. Even when rendered instrumentally, Carnatic compositions emulate the nuances and ornamentations of the human voice. In recent years, Carnatic music has gained attention for its therapeutic potential in enhancing psychological well-being. This review explores the impact of Carnatic music therapy on mental health using secondary data and existing literature. Findings from previous studies suggest that listening to or engaging with specific ragas such as Bilahari, Shankarabharanam, Kannada, and Vakulabharanam improves mood, cognitive function, and emotional regulation while reducing depression, anxiety, and sleep disturbances. However, existing research remains limited by small sample sizes, lack of control groups, and short-term designs. To address these gaps, future experimental research will be conducted across diverse populations—including children, adults, older adults, and clinical groups—to empirically examine the effects of Carnatic ragas on emotional regulation, resilience, and physiological responses such as heart rate variability and EEG patterns. Proposed studies include randomized controlled trials for anxiety and depression, school-based interventions for attention and emotion regulation, and dose–response studies in older adults focusing on sleep and cognition. Each study will employ standardized raga exposure and pre–post assessments to identify raga-specific effects. Collectively, these efforts aim to establish Carnatic music therapy as an evidence-based, culturally grounded approach to mental health and well-being.

KEY WORDS: Carnatic music therapy, music therapy, psychological well-being, ragas, mental health, emotional regulation, cognitive function, experimental study, cross-population research.

INTRODUCTION

The connection between music and mental health is well established, with research consistently demonstrating how music influences emotional, cognitive, and psychological well-being. Music has the ability to evoke emotions, regulate mood, enhance memory, and provide therapeutic benefits, making it a valuable tool in mental health care. From a psychological perspective, music therapy is widely used as an intervention for various mental health conditions, including anxiety, depression, and post-traumatic stress disorder (PTSD). In India, different musical traditions, particularly Carnatic music, have been explored for their role in improving cognitive function, promoting relaxation, and strengthening emotional resilience.

Health is generally defined as physical and emotional well-being associated with the normal functioning of the human body and absence of illness or distress. Mental health, as defined by the World Health Organization (WHO, 2022), is a state of mental well-being that enables individuals to cope with stress, realize their abilities, learn, work productively, and contribute to their community. Mental health affects how people think, feel, and interact in their everyday lives. Globally, one in eight individuals experiences anxiety or depression (WHO, 2023). In India, approximately 5.1% of the population suffers from mental health disorders, yet many do not receive treatment due to stigma, lack of awareness, limited trained professionals, and financial constraints. The National Mental Health Survey (2016) reported a treatment gap of 80.4%, indicating a significant unmet need.

Common treatments for mental disorders include medication, counseling, cognitive behavioral therapy (CBT), and psychosocial support services such as rehabilitation, supported employment, and peer support. While these interventions are effective, many medications can produce side effects such as nausea, dizziness, weight gain, and dependency. For example, long-term use of anxiolytics such as valium may lead to depression, memory impairment, or personality changes (Better Health Channel, 2025). Due to these limitations, there has been increasing interest in alternative therapeutic approaches such as yoga, meditation, expressive arts therapy, Ayurveda, and music therapy, which support stress reduction and emotional regulation (Patel et al., 2020).

Music has played a significant role in Indian culture for centuries. Ancient Indian musical heritage can be traced to texts such as the *Natyashastra* and the *Samaveda*, which contain early references to musical chants and devotional hymns. Over time, Indian music evolved into two main traditions: *Margi Sangeet* (temple-based classical music) and *Deshi Sangeet* (folk music). By the medieval period, Hindustani classical music developed in the northern region under Persian and Mughal influences, while Carnatic music flourished independently in the southern states. Notable composers and musicians, including Tyagaraja, Amir Khusrau, and Tansen, played key roles in shaping musical structures and forms. In the 20th century, artists like Ravi Shankar and Ali Akbar Khan helped popularize Indian classical music internationally, contributing to cultural exchange and global appreciation.

Music therapy is defined by the American Music Therapy Association (2005) as a clinical intervention that uses music to achieve therapeutic goals under the guidance of a trained professional. Music therapy may involve listening, singing, composing, improvising, or playing instruments. Magill-Levreault (1993) demonstrated that music therapy helps reduce emotional suffering and pain in individuals with chronic illness by influencing cognitive, emotional, and sensory processes. Similarly, Croom (2014) found that music participation promotes emotional well-being by enhancing positive affect, strengthening social relationships, and increasing a sense of purpose and personal accomplishment. Research by Talamini et al. (2022) further showed that music influences memory and emotional processing, suggesting that music may facilitate emotional expression and self-awareness.

More recent studies reinforce music therapy's therapeutic benefits. Mao (2022) found that music therapy in workplace wellness programs reduced stress, increased job satisfaction, and improved teamwork and creativity. Arnold et al. (2024) highlighted that music affects pain perception through neurological and psychological pathways, suggesting that music therapy may reduce opioid dependence in pain management. During the COVID-19 pandemic, Cabedo-Mas et al. (2021) observed that many individuals relied on music to cope with emotional distress and maintain social connection, demonstrating music's role as a psychological support mechanism during crises (Deka, Tiwari & Tripathi, 2022).

Carnatic music, a classical music system of South India, plays a significant role in India's cultural and spiritual traditions. Unlike Hindustani music, Carnatic compositions emphasize vocal expression even in instrumental performance. The music is structured around *ragas* (melodic frameworks) and *talas* (rhythmic cycles). Ragas are believed to evoke specific emotional states in listeners. For instance, morning ragas such as Bhoopalam promote calmness, while evening ragas like Hamir Kalyani evoke warmth and introspection. Carnatic music is deeply tied to devotional themes, often performed in temples and during religious rituals. Prominent composers such as Tyagaraja, Muthuswami Dikshitar, and Shyama Shastri shaped the tradition with works expressing spiritual devotion and emotional depth.

Music cannot cure mental illness on its own, but it can serve as a complementary therapy that enhances emotional resilience, reduces stress, and improves overall well-being. Its accessibility, cultural relevance, and emotional impact make it a valuable asset in mental health care. As awareness grows and stigma reduces, integrating traditional musical practices with modern therapeutic approaches offers promising avenues for holistic mental health treatment.

AIM OF THE STUDY

The aim of this study is to explore and synthesize existing evidence on the psychological impact of Carnatic music.

OBJECTIVES

The objectives of the study are:

1. To understand the principles of Carnatic music and their potential therapeutic applications;
2. To review the existing empirical evidence on the effects of Carnatic music on psychological states such as mood, anxiety and focus;
3. To evaluate the effectiveness and limitations of existing interventions using Carnatic music in therapeutic contexts; and
4. To suggest culturally adaptive evidence-based future research in music therapy.

HYPOTHESIS

There will be significant positive impact on psychological well-being, emotional regulation, cognitive and physiological balance while reduction in stress, anxiety and depression, with the use of Carnatic music therapy.

METHODOLOGY

The present study followed a narrative review design to explore how Carnatic music influences psychological well-being. The aim was to bring together and interpret findings from different studies that have examined Carnatic music as a form of therapy. By reviewing existing research, this paper seeks to understand how Carnatic music affects mental health, emotional balance, and overall well-being while identifying key patterns, benefits, and research gaps. A systematic search was conducted across academic databases including Google Scholar, PubMed, ScientificResearchJournal.com, Academia.edu, and ResearchGate using keywords such as “Carnatic music therapy,” “impact of Carnatic music on psychological well-being,” and “psychological effects of Carnatic music.” The search focused on studies published between 2010 and 2025 that involved both clinical and non-clinical populations. In total, 173 research papers were initially identified. After applying specific inclusion and exclusion criteria, 15 studies were selected for the final review based on their quality, relevance, and focus on Carnatic music therapy.

The inclusion criteria consisted of studies that:

1. Specifically explored Carnatic music and its psychological, emotional, or cognitive effects.
2. Involved participants aged 5 to 80 years.
3. Used measurable tools to assess variables such as mood, attention, memory, or emotion regulation.
4. Only empirical, conceptual, or case-based studies published in English were considered.

The exclusion criteria were:

1. Studies focusing solely on other forms of Indian classical music, such as Hindustani or Odissi.

2. Papers with unclear research methods or incomplete data.

3. Non-peer-reviewed articles, duplicate publications, and review papers without original findings.

The final set of 15 studies included a variety of designs such as experimental, cross-sectional, and case-based approaches. Interventions ranged from passive listening to ragas like Bilahari and Shankarabharanam to active participation through singing, chanting, or instrumental performances. These studies were conducted in schools, hospitals, rehabilitation centers, and community settings, measuring outcomes such as emotional well-being, anxiety, memory, and physiological responses like heart rate variability. The findings collectively highlight the potential of Carnatic music to enhance mental health and underscore the need for more systematic, large-scale research in this emerging therapeutic field.

KEY FINDINGS

The review highlights that specific Carnatic ragas such as Bilahari, Shankarabharanam, and Kannada positively influence emotional states by inducing calmness, happiness, and reducing anxiety. Cognitive benefits were also evident, particularly among children, with improvements in attention, memory, and academic performance. Physiologically, studies reported enhanced parasympathetic activity through heart rate variability, indicating stress-reducing effects. Carnatic music therapy proved effective across diverse groups, including caregivers, children, elderly individuals, and those with depression or schizophrenia. Long-term training in Carnatic music was associated with better cognitive function and increased brain volume in older adults, suggesting neuroprotective potential. However, research on Carnatic music remains limited, with more academic focus on Hindustani and Odissi traditions.

DISCUSSION

The present review aimed to synthesize existing research on the therapeutic potential of Carnatic music in enhancing psychological well-being. Through an analysis of studies

conducted across different populations and settings, this review sought to understand how Carnatic music—rooted in deep cultural and spiritual traditions—affects mental health, cognition, and emotional regulation. The discussion integrates findings from previous literature, emphasizing both the psychological mechanisms underlying music therapy and the unique features of Carnatic music that contribute to its therapeutic impact. It also examines recurring methodological trends, highlights clinical implications, and identifies directions for future empirical exploration. The convergence of ancient Indian classical traditions with modern psychological research has opened a promising avenue in the field of music therapy. The reviewed literature provides a multidimensional understanding of how Carnatic music—a complex, raga-based South Indian classical system—interacts with human physiology, cognition, affective states, and psychological well-being across various populations. The discussion elaborates on these findings across domains while also highlighting methodological patterns, clinical implications, and gaps for future research:

1. Emotional and Affective Responses

Several studies from the ROL highlight the emotional influence of specific ragas. Ravi and Govindaraj (2021) examined emotional responses to four ragas—Bilahari, Shankarabharanam, Kannada, and Vakulabharanam—and found that participants reported feeling calm with the latter two and happy with the former. However, the reliance on self-reported data and the absence of physiological markers limit the strength of causal inference. Complementing this, Sriram and Kamathenu (2025) used the PANAS scale to explore the effect of an integrated raga blend. Their study found significant increases in positive affect compared to a control group, albeit with baseline selection bias and the limitation of single-session design. Together, these studies suggest that specific raga structures can elicit differential emotional responses, lending credibility to the psychotherapeutic use of Carnatic music.

2. Physiological and Neurobiological Mechanisms

Rao's (2013) study on heart rate variability (HRV) in healthy adults sheds light on the physiological basis of music's impact. The increased parasympathetic activity (evidenced by HRV indices like HF and SDNN) suggests that Carnatic ragas can induce relaxation and autonomic balance. These findings are reinforced by the theoretical work of Varadarajan et al. (2022), which attempts to map biological mechanisms—such as cortisol regulation, autonomic modulation, and brainwave entrainment—to Carnatic music features like rhythm, tala, and pitch. However, while theoretical integration is valuable, more empirical studies are needed to

validate these physiological pathways, particularly using neuroimaging or biochemical markers.

3. Clinical Applications: Depression, Anxiety, and Sleep

A significant portion of the literature explores Carnatic music as a complementary intervention for clinical populations. Priyadarshini (2017) conducted a randomized controlled trial showing that individuals with mild depression experienced a reduction in depressive symptoms and improvement in self-esteem following Carnatic Music Therapy (CMT). Similarly, her collaborative study with Rohini (2015) found enhanced resilience and reduced depression when music therapy was combined with pranayama. These findings align with Krishna et al.'s (2022) study on caregivers of cancer patients, where raga Bilahari–based therapy reduced anxiety, somatic symptoms, and sleep disturbances. The repeated emergence of Bilahari as a raga of choice in therapeutic contexts may suggest its arousing yet stabilizing emotional valence, but this hypothesis remains to be tested across larger, controlled samples. These clinical outcomes are particularly relevant considering the rising burden of mental health conditions in India, where culturally rooted, non-pharmacological interventions could offer cost-effective adjuncts to standard care. However, concerns remain regarding limited sample sizes, lack of blinding, absence of long-term follow-up, and insufficient clarity on the standardization of music interventions.

4. Cognitive and Developmental Enhancements

Beyond mood-related interventions, the cognitive benefits of Carnatic music were also explored. Raja and Bhalla (2020) reported significant improvements in math performance in children receiving Carnatic music training, implying enhanced working memory or numerical cognition through rhythm and melodic engagement. In parallel, Shravani and Pant's (2023) study involving daily singing sessions found improvements in selective attention, digit span, and mindfulness in school-aged children. These cognitive gains, although promising, are grounded in short-term and small-scale designs. Larger randomized studies with neurocognitive assessments are needed to substantiate these claims. Another notable contribution is Ghosh et al.'s (2024) neuroimaging based study that compared elderly individuals with and without long-term Carnatic music training. They found enhanced cognitive performance and increased gray matter volume among trained musicians, especially in regions related to visuospatial and executive functioning. This points to the potential of

Carnatic music in promoting healthy cognitive aging—an area gaining prominence in geriatric psychology.

5. Geriatric and Institutional Settings

A novel application of Carnatic music therapy is its role in elderly care, particularly among institutionalized populations. Choolayil and Putran's (2020) mixed-method study with elderly residents of an old-age home found reductions in depression and enhanced subjective well-being following six months of daily music sessions. Participants also reported improved social engagement, emotional expression, and spiritual connectedness. The integration of qualitative narratives strengthens the therapeutic relevance of music beyond clinical symptoms, addressing holistic wellness.

6. Unique and Individualized Approaches

The ROL also includes conceptual frameworks advocating for personalization in music therapy. Sridhar et al. (2022) proposed a diagnostic-prescriptive model where specific ragas, talas, and tempos are tailored to individual physiological and emotional needs. While innovative, this remains a theoretical proposition lacking empirical support. Similarly, Janaswamy and Vasudev (2022) discussed the cognitive benefits of "Manodharmam" or improvisation in Carnatic music, linking it to enhanced executive control and memory. These ideas broaden the scope of Carnatic music therapy but require empirical operationalization.

While the existing research on Carnatic Music Therapy is promising, it comes with some clear limitations. Many studies involved small groups of participants, often without control groups, and mostly relied on how people felt rather than using medical or brain-based measures to track real changes. The way music was used also varied a lot—different ragas, session lengths, and formats—which makes it hard to compare results or apply them consistently in real-world settings. Most importantly, there are still very few studies focused solely on Carnatic music, while Hindustani and Odissi music have received much more research attention. Looking ahead, there's a real need for larger, longer-term studies that use both scientific tools and personal feedback to understand how Carnatic music affects us. With the help of technology like mobile apps, AI-based raga matching, and wearable devices to track stress or mood, Carnatic music could become a more accessible and personalized form of therapy for emotional, mental, and even physical well-being.

CONCLUSION

Carnatic music therapy shows great promise in supporting mental health by helping individuals feel calmer, more centered, and emotionally balanced. The review highlights that specific ragas can reduce stress, ease anxiety, and improve memory and mood. Yet, compared to other classical forms like Hindustani or Odissi, Carnatic music has not received equal research attention. Its deeply emotional and structured nature offers a unique opportunity for culturally rooted healing practices. The findings suggest that with more inclusive, large-scale, and experimental research involving diverse groups—such as students, working professionals, and people facing mental health challenges—Carnatic music could be better understood and applied in therapy. Future studies using tools like EEG or heart rate tracking could also help uncover how ragas influence the mind and body. With the right research and collaboration between psychologists and musicians, Carnatic music therapy could evolve into a meaningful, evidence-based approach to emotional and psychological well-being.

There are certain limitations to this study. Firstly, studies of over a 15 years were considered for inclusion, as the use of music as a therapy evolves after every decade. Secondly, a thematic review was conducted due to restriction of the music form as a therapy. Lastly, this study was centered around the use of Carnatic Music on Psychological wellbeing ignoring its effects on other physiological aspects.

Since very few studies were conducted on the use of Carnatic music for Psychological therapeutic approaches, hence studies could be conducted on the use and effect of Carnatic music as active, passive and improvised music therapy on various domains of Psychology using various qualitative approaches in future.

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