

Integrative Role of Ayurveda, Yoga, Meditation, Sound and Mantra Therapy in Sickle Cell Disease (SCD) Management: Details and References

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Abstract

Sickle cell disease (SCD) remains a major global health burden characterized by chronic pain, inflammation, and psychosocial stress. While pharmacological approaches like hydroxyurea offer partial relief, integrative therapies including Ayurveda based sound and mantra therapy provide supportive, culturally appropriate options. This paper reviews the evidence and principles behind the use of sound healing, mantra chanting, and music-based interventions in SCD management, highlighting their roles in pain relief, stress reduction, emotional stability, and quality of life improvement.

Keywords: Sickle Cell Disease, Ayurveda, Yoga, Meditation, Mantra Therapy, Sound Healing, Music Therapy, Quality of Life, Pain Management.

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INTRODUCTION

Indian traditional medicine, including Ayurveda, Yoga, and Meditation, Sound and mantra therapies offers integrative approaches to managing chronic and rare diseases such as sickle cell anemia. Sound and mantra therapies are valued for promoting mind-body balance, stress reduction, and emotional well-being. They can complement conventional SCD care, especially for patients facing chronic pain, psychological distress, and social isolation. Sick cell disease (SCD) is a genetic hemoglobinopathy marked by vaso-occlusive crises, chronic anemia, and systemic complications. Beyond physical symptoms, SCD often imposes significant emotional and social burdens. Ayurveda, Yoga, and mantra therapy traditional Indian health sciences offer holistic approaches to disease management. Among these, sound and mantra therapy are gaining recognition for their integrative potential.

Ayurveda Yoga, Meditation, Sound and Mantra Therapy: Concepts and Practice

1. Sound Healing in Ayurveda

- **Doshic Balance:** Ayurveda recognizes that each individual has a unique constitution (“dosha”—Vata, Pitta, Kapha). Specific sound frequencies and musical instruments (e.g., Tibetan bowls, flutes, drums, bells) are chosen to balance these doshas. For example:
 - **Vata:** Deep, grounding sounds (slow drums, bowls) calm anxiety and restlessness.
 - **Pitta:** Cooling, gentle sounds (flutes, ocean drums, soft chanting) reduce anger and intensity.
 - **Kapha:** Uplifting tones (bells, tuning forks) counter depression and lethargy.[1]
- **Marma Point Activation:** Tuning forks and bells, used near marma (energy) points, can stimulate energy flow and improve circulation and relaxation, which is believed to reduce pain and promote healing.[2,1]
- **Chakra Realignment:** Bija (seed) mantras and tones resonate with chakras, supporting emotional and energetic balance. Chanting restores flow through the energy centers (chakras and nadis), aiding emotional purification.[1]

2. Mantra Therapy in Ayurveda

- **Mantra Chanting:** Reciting Sanskrit mantras is likened to vibrational medicine. These mantras are traditional sound “codes” believed to heal at the mental, physical, and subtle energy levels (karmic/healing levels).[3][4]
 - Examples: “Om,” “So Ham,” “Ram,” each associated with specific energies or chakras.
- **Therapeutic Benefits:** Mantras promote:
 - Reduced stress and anxiety by calming the nervous system.[5,4,1]
 - Enhanced emotional stability and better sleep.
 - Improved focus and mental clarity (by shifting brainwave states).
 - Deepened spiritual connection and a sense of support—critical for patients who may feel isolated or hopeless.[4]
- **Integration with Therapy:** Reciting mantras during or after Ayurveda treatments (massage, Panchakarma) is a common practice to amplify effects and support emotional equilibrium.[4,1]

3. Yoga, Meditation, and Sound in SCD Care

- **Validated Yoga Modules:** Indian studies show that yoga practices, including breathing techniques (pranayama) and sound-based relaxation (MSRT, Yoga Nidra), are feasible and beneficial for SCD patients. Techniques like Nadi Shuddhi, Bhramari (humming bee breath), deep relaxation, and guided meditation, all of which can include sound or mantra, are especially accepted for SCD.[6]
- **Outcomes in Research:** These interventions have shown:
 - Reduction in pain, fatigue, and opioid use.
 - Better emotional regulation, stress management, and sleep quality.
 - Positive impact on quality of life and social participation by reducing stigma and promoting a sense of inner well-being.[6]
- **Emotional and Social Improvements with Music Therapy**
 - Reduction in Isolation: Music therapy creates opportunities for SCD patients to connect with peers, therapists, and family through group music-making, active listening, and expressive activities. This engagement helps combat the loneliness and seclusion often reported by patients, especially during frequent hospital stays.[9][10]
 - Enhanced Emotional Expression and Coping: Music therapy provides a safe medium for expressing complex emotions such as anger, sadness, and anxiety. Patients acquire effective self-management and relaxation techniques, which lead to improvements in confidence and the ability to cope with the unpredictable stress of SCD.[10]
 - Better Social Functioning: Participating in collaborative activities such as drumming,

songwriting, or music composition boosts social interaction, encourages teamwork, and helps patients re-engage with their communities and families, improving their broader social roles.[10]

- Supportive Therapeutic Relationships: The bond developed with music therapists and peers in therapy groups fosters emotional support, advocacy, and a sense of being valued within the healthcare system.[9]

• Clinical Evidence

- **Research Findings:** A multicenter feasibility study demonstrated that adults with SCD who completed a structured music therapy protocol experienced measurable gains in self-efficacy, reduced pain interference, improved sleep, and notably, improved social functioning compared to controls. Qualitative data confirmed that participants felt less isolated and more empowered to manage their symptoms through music-based strategies.[10]
- **Patient Testimonials:** Individuals describe music therapy as foundational in "releasing the everyday pressure and stress," and as providing a concrete method to articulate and manage feelings of isolation, anger, and sadness.[9]

4. Pain Management and Quality of Life

- Patients consistently report that music therapy sessions can reduce pain intensity and duration, with some describing their pain dropping from 10/10 to 4–5/10 after a session. This reduction not only eases physical symptoms but also boosts overall mood, decreases anxiety and depression, and supports healthier engagement in everyday life.[9]

Feasibility and Access

- Music therapy is shown to be both feasible and acceptable, with high rates of participation and completion in both inpatient and outpatient settings. Techniques are personalized, culturally adaptable, and increasingly available via digital platforms for use at home, further supporting long-term integration into care plans [10].

Emotional Improvements

- **Reduced Anxiety and Depression:** Music therapy can help calm anxiety and lift depressive symptoms, which are common among SCD patients dealing with chronic pain and frequent hospitalizations. Patients often report feeling more relaxed and less overwhelmed after participating in music therapy sessions.[11,2,3]
- **Improved Coping Skills:** Through activities such as music-based breathing, guided relaxation, and active music making, patients

develop healthier ways to manage pain and emotional distress. Clinical studies show increases in self-efficacy, meaning patients feel more confident in their ability to manage their symptoms and face challenges.[4,5,6]

- **Enhanced Mood and Emotional Expression:** Music therapy provides a safe, creative outlet for expressing emotions that might otherwise be difficult to verbalize. Patients report greater enjoyment, a sense of hope, and gratitude, as well as improved ability to articulate their feelings, even in the midst of difficult treatment journeys.[3,7,11]

Social Improvements

- **Better Social Functioning:** Music therapy has been shown to improve social interaction and participation. In one study, SCD patients in the music therapy group scored significantly higher on social functioning impact, indicating better engagement in relationships, family roles, and community life.[5,6,7]
- **Decreased Isolation:** Engaging in music therapy—whether in a group setting or through

shared activities—helps reduce feelings of isolation and enables patients to connect with others who share similar experiences. This support can be critical for those struggling with loneliness related to chronic illness.[6,8]

- **Improved Relationships with Healthcare Providers:** Participating in music therapy can foster a more positive and collaborative relationship with clinicians and therapists, as patients become more confident and active in managing their care.[8]

4. Case and Observational Evidence

- **Ayurveda Treatment Modalities:** SCD is sometimes classically classified under “Pandu Roga” (anemia) in Ayurveda. Ayurveda regimens often combine herbal therapies, dietary guidance, lifestyle changes, and supportive therapies like prayer and mantra. These approaches have been associated with improved appetite, less pain, and better overall quality of life in case studies but larger clinical trials are needed.[7,8]

Summary Table: Ayurveda Sound & Mantra Therapy for SCD

| Area | Details & Techniques | Key Benefits |
|-------------------------|---|---|
| Doshic Balance | Instrumental sound, rhythm, chanting personalized for Vata/Pitta/Kapha | Calms anxiety, lifts mood, energizes |
| Mantra Therapy | Repeated chanting of bija (seed) mantras (“Om,” “Ram,” etc.) | Reduces stress, enhances self-regulation |
| Marma/Chakra Activation | Placing sound tools near marma points, chakra-specific tones/mantras | Improves circulation, emotional/energetic balance |
| Yoga & Meditation | Nadi Shuddhi, Bhramari, Yoga Nidra, MSRT, guided imagery with sound/mantra | Pain relief, better sleep, less opioid dependence |
| Ayurveda Regimen | Combines herbal, dietary, lifestyle, and supportive (prayer, sound) interventions | Improved QOL, appetite, pain tolerance |

DISCUSSION

This review underscores the importance of integrating traditional sound and mantra therapies with modern care strategies for SCD. Although large-scale randomized controlled trials are limited, available evidence suggests significant psychological and physiological benefits. Ayurveda’s view of illness as an imbalance in energy offers a unique paradigm where vibrational healing directly impacts subtle energy systems Marma points, Chakras, and Nadis. Meanwhile, Music therapy focuses on emotional expression, coping, and cognitive distraction. Together, they form a powerful integrative approach with high patient acceptability and cultural relevance.

CONCLUSION

Ayurveda’s sound and mantra therapies, often provided alongside yoga and lifestyle modifications, offer safe, low-cost, and culturally appropriate support for SCD patients. They help reduce stress, improve emotional and social functioning, and enhance overall

quality of life. More large-scale research is still needed, but integration with conventional and complementary treatment is already widespread and highly valued in the Indian healthcare context. Music therapy provides a valuable, evidence-based approach to reducing feelings of isolation and enhancing the quality of life for people with sickle cell disease. Through fostering connection, emotional expression, and social engagement, music therapy addresses the unseen psychological burdens of SCD and paves the way for holistic, patient-centered care

Ayurveda not as an alternative but as an integrative complement to conventional SCD management, supporting both physical and psychological facets through a thoughtfully layered intervention plan.

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