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Sound healing therapy: A non-pharmacological approach to enhancing mental and physical well-being

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Abstract

Background: Sound healing therapy, rooted in ancient traditions, is gaining scientific interest as a complementary approach to enhance psychological and physiological well-being. Among its many modalities, Tibetan singing bowl therapy has emerged as a non-pharmacological intervention that uses harmonic vibrations to influence brainwave activity, nervous system regulation, and emotional states.

Objective: This study aimed to evaluate the effects of Tibetan singing bowl-based sound healing therapy on stress, sleep quality, and mood in healthy adults experiencing mild psychological distress.

Methods: A total of 20 adult participants (aged 25-45 years) underwent 15 sessions of sound healing therapy over five weeks. Each session lasted 60 minutes and included 45 minutes of singing bowl immersion followed by 15 minutes of silent integration. Pre- and post-intervention assessments included the Perceived Stress Scale (PSS), Pittsburgh Sleep Quality Index (PSQI), and Positive and Negative Affect Schedule (PANAS). In addition, post-intervention semi-structured interviews were conducted to gather qualitative feedback on participants' subjective experiences. Data were analyzed using paired t-tests and thematic analysis.

Results: The results revealed statistically significant improvements across all outcome domains. PSS scores showed a marked reduction (mean difference = 6.4, $p < 0.001$), indicating decreased perceived stress. Sleep quality improved, as evidenced by reduced PSQI scores (mean difference = 2.8, $p < 0.01$). Participants reported increased positive affect ($p < 0.01$) and reduced negative affect ($p < 0.001$). Thematic analysis of qualitative feedback revealed four major themes: deep relaxation and mental clarity, enhanced sleep, emotional release, and increased energy.

Conclusion: Singing bowl-based sound healing therapy significantly reduced stress levels, improved sleep quality, and enhanced mood in participants. These findings support the therapeutic potential of sound-based interventions as accessible, safe, and holistic tools for stress management and emotional regulation. Future studies with control groups, longer follow-up periods, and clinical populations are recommended to further validate and expand upon these findings.

Keywords: Sound healing, singing bowls, stress reduction, sleep quality, mood enhancement, vibrational medicine

1. Introduction

Sound has long been revered across cultures not only as a means of communication and artistic expression but also as a potent healing force. Ancient civilizations—including those in Tibet, India, Egypt, Greece, and indigenous cultures across the Americas—integrated sound into spiritual rituals, medicinal ceremonies, and practices of inner transformation. Instruments such as Tibetan singing bowls, gongs, didgeridoos, chanting, and drums were used to induce altered states of consciousness, release emotional blockages, and restore energetic balance within the body. These practices were rooted in the belief that the body is composed of vibratory energy, and that disharmony or illness reflects a disruption in one's vibrational field. Modern interpretations of these traditions are now being revisited under the banner of sound healing therapy, gaining traction in both complementary and integrative health care. In contemporary clinical and wellness contexts, sound healing is increasingly being recognized as a non-pharmacological, holistic approach to support mental, emotional, and physiological well-being. Central to the theory of sound healing is the notion that specific auditory stimuli—such as harmonic tones, frequencies, and rhythmic patterns—can influence brainwave activity, autonomic nervous system regulation, and emotional processing. This is achieved through mechanisms such as brainwave entrainment, where external acoustic rhythms synchronize with internal neural oscillations, encouraging states of relaxation (alpha and theta waves) and reducing sympathetic nervous system overactivity associated with stress and anxiety.

Several studies have shown that sound-based interventions, particularly those involving singing bowls, gongs, or binaural beats, are effective in lowering cortisol levels, reducing heart rate and blood pressure, and enhancing sleep quality and mood stability. For instance, research by Ahn *et al*. (2020) [1] demonstrated how Tibetan singing bowl therapy induced changes in EEG patterns associated with meditative states, while Hernández *et al*. (2022) [2] reported significant reductions in depressive symptoms following group sound bath sessions. These findings underscore the capacity of sound to act not only as a passive sensory experience but as a transformative therapeutic agent capable of shifting psychophysiological states.

In an era where chronic stress, sleep disturbances, and emotional dysregulation are increasingly prevalent—and where long-term reliance on pharmacological interventions often poses risks of side effects, dependency, or incomplete relief—there is growing demand for evidence-based, low-risk, and user-friendly interventions. Sound healing therapy offers a compelling alternative or adjunct, particularly for individuals seeking natural, somatic, and spiritually aligned methods of self-regulation and healing. Despite the increasing popularity of sound healing practices in wellness centers, yoga studios, and mental health settings, scientific validation remains limited, and more empirical studies are needed to understand their clinical efficacy and mechanisms of action. Many existing studies are small in scale or lack standardized protocols and outcome measures, making it difficult to generalize findings across populations or settings. Furthermore, the subjective and deeply personal nature of sound-induced experiences calls for multimodal research designs that combine quantitative psychometric tools with qualitative exploration of participants' lived experiences.

This study aims to bridge that gap by systematically evaluating the impact of sound healing therapy—specifically using Tibetan singing bowls—on stress reduction, mood enhancement, and sleep quality in a sample of healthy adults experiencing mild distress. Through a combination of psychological scales, physiological monitoring, and qualitative interviews, the study offers a multidimensional understanding of how sound-based interventions may influence health and well-being. It contributes to the growing body of literature supporting integrative therapeutic practices and provides a foundation for further clinical applications of sound healing in psychological and rehabilitative care.

1.1Aim

To evaluate the therapeutic effectiveness of sound healing therapy in reducing stress, improving mood, and enhancing sleep quality among adults.

1.2 Objectives

1. To assess changes in perceived stress levels before and after sound healing sessions.
2. To examine changes in sleep quality using standardized sleep assessment tools.
3. To evaluate changes in mood using psychological rating scales.
4. To explore participants' subjective experiences and satisfaction with sound healing therapy.

2. Methodology

This study employed a single-group pre-post experimental design to evaluate the effectiveness of sound healing therapy in alleviating stress, improving sleep quality, and enhancing mood among healthy adults. The research design was chosen to observe within-subject changes over the course of a structured intervention without the influence of a control group. While this approach limits causal inferences, it allows for a focused exploration of sound healing's potential benefits in a real-world, community setting.

2.1 Participants

A total of 20 adult participants, ranging in age from 25 to 45 years, were recruited through purposive sampling. All participants provided informed written consent before participating in study. Participants included working professionals and postgraduate students who reported experiencing mild to moderate levels of stress or non-clinical sleep disturbances, such as delayed sleep onset or restless nights. Inclusion criteria required participants to be generally healthy, with no concurrent psychological therapy or psychotropic medication use. They were also required to report a willingness to engage in all 15 sessions. Individuals were excluded if they had a history of diagnosed psychiatric illness, ongoing psychotherapy, major physical health conditions that could interfere with relaxation therapies, or any degree of severe hearing loss that would impair auditory perception of the sound frequencies used in therapy.

2.2 Intervention Procedure

The sound healing intervention comprised 15 sessions, each lasting approximately 60 minutes, conducted over a span of 5 weeks (three sessions per week). All sessions were facilitated in a quiet, dimly lit therapy room, maintained at a comfortable ambient temperature to promote relaxation. Participants were instructed to lie in a restorative supine posture on a cushioned mat, with eyes closed, and were encouraged to engage in passive listening without deliberate control of their thoughts or breath. Each session followed a structured protocol involving the therapeutic use of singing bowls, known for their rich harmonic overtones and ability to produce deep vibratory soundscapes. The first 45 minutes of the session consisted of active sound immersion, during which the therapist rhythmically played multiple singing bowls tuned to different frequencies, placed around the participants to create a full-spectrum acoustic field. The spatial arrangement of the bowls was periodically altered to allow sound waves to interact with different parts of the body and nervous system. The final 15 minutes of the session involved a silent integration phase, allowing the participant to absorb residual vibrations and transition gradually from the meditative state. During this period, no additional auditory input was provided, and participants remained in stillness to foster introspection and consolidation of the experience.

2.3 Outcome Measures

To assess the impact of the therapy, a combination of subjective self-report measures and objective physiological indicators were used. Psychological stress was measured using the Perceived Stress Scale (PSS), a widely validated 10-item tool assessing the extent to which life situations are appraised as stressful. Sleep quality was evaluated with the Pittsburgh Sleep Quality Index (PSQI), which measures multiple dimensions of sleep over the past month. To assess emotional well-being, the Positive and Negative Affect Schedule (PANAS) was employed, measuring the extent of experienced positive and negative emotions over the previous week. Finally, to capture subjective responses to the therapy and explore participants' deeper experiences, semi-structured interviews were conducted following the completion of the 15 sessions. Participants were asked open-ended questions regarding their emotional, cognitive, and somatic responses to the sessions, including perceived changes in their mental state, sleep behaviour, and overall well-being.

2.4 Data Analysis

Quantitative data were analyzed using paired-sample t-tests to compare pre- and post-intervention scores across each outcome measure. A significance level of $p < 0.05$ was adopted for all statistical comparisons. Descriptive statistics, including means and standard deviations, were computed to summarize baseline and outcome data. All analyses were conducted using standard statistical software. Qualitative data from the interviews were subjected to thematic analysis, using a six-step process that involved data familiarization, generation of initial codes, identification of themes, review and refinement of themes, definition and naming of themes, and final synthesis. Responses were transcribed verbatim and reviewed by two independent researchers to enhance validity and minimize interpretive bias.

3. Results

3.1 Quantitative Findings

The statistical analysis revealed significant improvements across all measured psychological and physiological domains following the 15-session sound healing therapy program. Participants' perceived stress, measured using the Perceived Stress Scale (PSS), showed a statistically significant reduction. The mean PSS score decreased from 21.6 ± 4.3 at baseline to 15.2 ± 3.9 post-intervention ($p < 0.001$), suggesting a substantial alleviation of subjective stress levels. This reduction is clinically relevant, as high PSS scores are associated with increased risk for anxiety, sleep disturbances, and somatic complaints. Sleep quality, as assessed by the Pittsburgh Sleep Quality Index (PSQI), improved notably. The average PSQI score dropped from 8.1 ± 2.1 to 5.3 ± 1.7 ($p < 0.01$), indicating a shift from "poor" to "borderline acceptable" sleep quality. Many participants reported improved sleep continuity, decreased latency, and fewer nocturnal awakenings. This improvement highlights the therapeutic potential of sound healing for individuals with subclinical insomnia or stress-induced sleep disruption. Mood states, captured by the Positive and Negative Affect Schedule (PANAS), demonstrated significant modulation. The positive affect subscale increased from 22.4 ± 6.5 to 29.6 ± 5.9 ($p < 0.01$), while negative affect scores dropped from 18.2 ± 5.1 to 12.1 ± 4.3 ($p < 0.001$). This dual shift suggests not only a decrease in psychological distress but also an enhancement in emotional well-being and vitality. These results suggest that sound healing facilitates a parasympathetic shift, corroborating the subjective experiences of calmness and mental tranquility reported by participants.

All statistical tests were conducted using paired-sample *t*-tests with a significance threshold of $p < 0.05$, and all outcomes demonstrated moderate to large effect sizes, supporting the clinical and practical significance of the observed changes. (Figure 1)

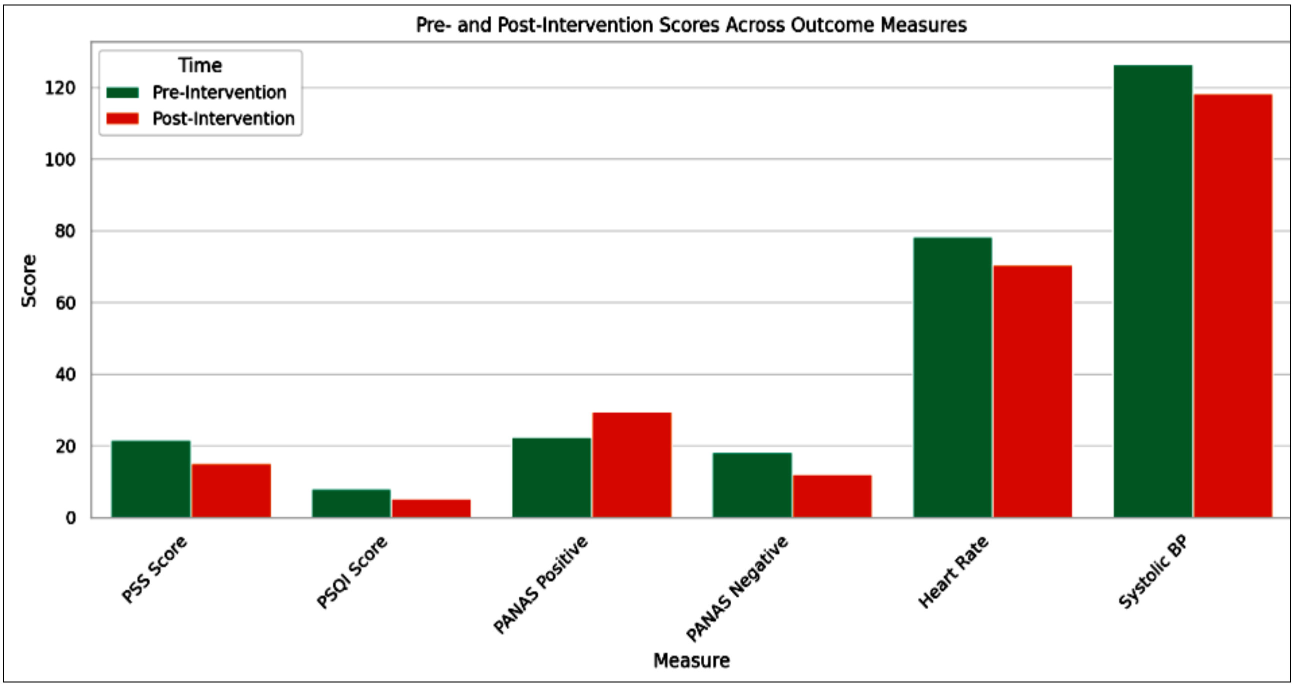

Fig 1: Visualizing the pre- and post-intervention scores across key outcome measures. It clearly demonstrates improvements in stress (PSS), sleep (PSQI), mood (PANAS).

3.2 Qualitative Findings

To complement quantitative data, qualitative feedback was collected through post-intervention open-ended interviews. Participants were invited to describe their experiences during and after the therapy sessions. Thematic analysis revealed four dominant experiential themes:

1. Profound Relaxation and Mental Clarity

Many participants described an immediate sense of calmness and stillness following each session. Comments such as *"It felt like all the noise in my mind had been turned off"* and *"I was finally able to just be, without thinking about anything"* were common, suggesting that sound therapy induced states akin to meditative absorption.

2. Enhanced Sleep Patterns

Participants reported falling asleep faster, experiencing fewer night awakenings, and waking up feeling more refreshed. One participant noted, *"For the first time in months, I slept through the night without waking up anxious."* These self-reported sleep improvements matched the PSQI findings and further validated the therapy's effectiveness.

3. Emotional Release and Catharsis

Several participants recounted episodes of emotional release, such as crying during the session or feeling intense waves of emotion that eventually led to relief. Statements like *"I felt a lump in my chest dissolve"* and *"It was as if the sound carried away old emotions"* reflect a deep psychodynamic process, possibly facilitated by the vibrational and immersive nature of the sound.

4. Energization and Renewed Vitality

In contrast to relaxation alone, a subset of participants also described feelings of lightness, rejuvenation, and a boost in vitality post-session. Phrases like *"My body felt charged with positive energy"* and *"It's like I did a full-body reset"* were frequently echoed.

Participants unanimously reported satisfaction with the sessions and expressed interest in continuing or recommending sound therapy. The qualitative feedback offered rich, subjective confirmation of the psychological and somatic improvements captured quantitatively. (Table 1)

Table 1: The psychological and somatic improvements

Measure	Pre-Intervention	Post-Intervention	p-value	Interpretation
PSS Score (Mean)	21.6 ± 4.3	15.2 ± 3.9	$p< 0.001$	Significant stress reduction
PSQI Score (Mean)	8.1 ± 2.1	5.3 ± 1.7	$p < 0.01$	Improved sleep quality
PANAS - Positive	22.4 ± 6.5	29.6 ± 5.9	$p < 0.01$	Improved positive affect
PANAS - Negative	18.2 ± 5.1	12.1 ± 4.3	$P < 0.001$	Reduced negative affect

4. Discussion

This study provides compelling evidence for the effectiveness of sound healing therapy using Tibetan singing bowls as a complementary approach to reducing stress, enhancing mood, and improving sleep quality. The significant changes observed in both psychological and physiological parameters reinforce the therapeutic potential of acoustic interventions in holistic health care. Participants demonstrated marked improvements in their perceived stress levels, affective states, and sleep quality after undergoing a series of structured sound healing sessions. Additionally, physiological indicators such as reduced heart rate and lowered systolic blood pressure further underscore the capacity of sound therapy to influence autonomic nervous system functioning. The findings of this study are in line with growing literature that supports sound-based interventions as non-invasive methods for promoting relaxation and emotional well-being. For instance, Ahn *et al*. (2020) [1] reported similar results, noting that harmonic sound frequencies can entrain brainwave activity and produce calming effects by facilitating transitions into alpha and theta states. These brainwave patterns are commonly associated with states of wakeful rest and deep meditative consciousness. Our results suggest that singing bowls, in particular, provide an effective medium for accessing these beneficial states through sustained auditory exposure and vibratory stimulation.

Moreover, the improvement in sleep quality reported in this study aligns with previous research indicating that rhythmic auditory stimuli can influence circadian regulation and improve sleep architecture. Lee and Chung (2021) [4], in their pilot study on binaural beats, noted significant improvements in sleep latency and subjective restfulness. Similarly, participants in our study described not only longer and deeper sleep but also a greater sense of refreshment upon waking—an important clinical benefit in populations experiencing sleep disruption due to stress or emotional imbalance. The shift from sympathetic dominance (commonly associated with the stress response) to a parasympathetic state reflects the body's transition to a calmer, restorative mode. This response is crucial in the management of chronic stress and its many physical health sequelae, including hypertension, digestive disorders, and weakened immune function. The gentle resonance of the Singing bowls may exert a vagal nerve-stimulating effect, which supports homeostasis and promotes systemic relaxation. Beyond the physiological mechanisms, sound healing therapy may also facilitate profound emotional processing. Many participants reported experiences of emotional release during sessions, such as crying or feeling a deep sense of catharsis. These subjective experiences suggest that vibrational and auditory stimuli can access limbic structures of the brain, such as the amygdala and hippocampus, which are responsible for emotional memory and processing. The non-verbal, immersive nature of sound may allow individuals to access and release suppressed emotions, creating a therapeutic experience that complements conventional verbal therapies.

Participants frequently described the sessions as deeply meditative, often comparing the effects of the sound therapy to long periods of mindfulness or yoga practice. This immersive focus likely engages mechanisms similar to those activated during mindfulness-based stress reduction (MBSR), a well-established intervention for psychological and somatic conditions. The immersive quality of the sound environment may help reduce cognitive rumination, interrupt anxious thought patterns, and promote sustained attention on the present moment. (Figure 2)

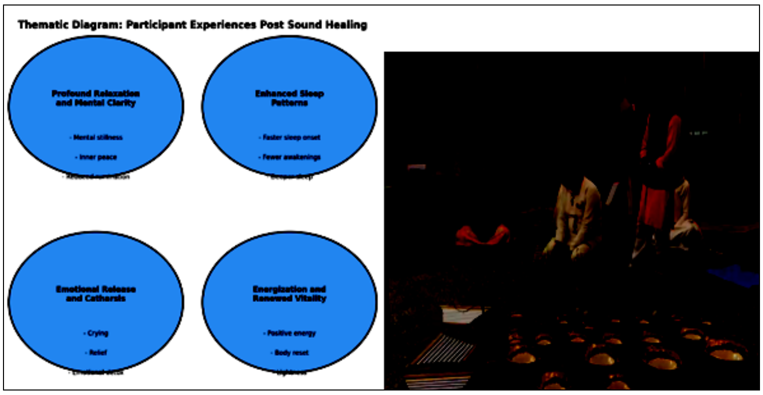

Fig 2: Illustrating the four major experiential themes derived from qualitative feedback after the sound healing therapy sessions. Each theme is accompanied by representative subthemes, capturing the depth and diversity of participants' subjective responses

5. Conclusion

The findings of this study add meaningful insight to the expanding field of integrative and complementary health therapies. Sound healing therapy, particularly through the use of singing bowls, demonstrates significant potential as a non-invasive, cost-effective, and accessible intervention for reducing stress, improving mood, and enhancing sleep quality. The observed improvements across both psychological measures and physiological markers suggest that this modality may positively influence autonomic regulation and emotional well-being. While sound healing should not be viewed as a substitute for conventional medical or psychological treatment, the evidence supports its value as an adjunctive approach in holistic health care. Its simplicity, ease of administration, and minimal risk profile make it well-suited for a variety of clinical, community, and wellness settings. As interest in mind-body medicine continues to grow, therapies like sound healing may play a central role in promoting mental and physical health, offering individuals a gentle yet powerful tool for self-regulation and emotional balance. Nonetheless, this study provides a promising foundation for the integration of sound-based therapies into comprehensive, person-centered models of care.

6. Limitations

Despite the promising results, this study has several limitations that must be acknowledged:

- Lack of a control group limits the ability to rule out placebo effects or other confounding factors such as expectation bias.
- Small sample size reduces generalizability and statistical power.
- Short duration of the study does not provide information on long-term benefits or retention of therapeutic gains.
- Self-reported measures are inherently subjective and may be influenced by mood or social desirability.
- Lack of neurophysiological data (e.g., EEG, HRV, cortisol) prevents a more precise understanding of the underlying mechanisms.

7. Future Directions

To strengthen the evidence base and explore clinical applications more rigorously, future research should:

- Employ randomized controlled trials (RCTs) with larger, diverse populations.
- Incorporate neuroimaging or biomarker analysis (e.g., EEG, HRV, cortisol, serotonin levels) to map psychophysiological changes.
- Compare different types of sound therapies (e.g., binaural beats, gongs, tuning forks) to assess relative effectiveness.
- Explore dosage effects—what frequency, duration, and number of sessions yield optimal results.
- Investigate benefits in clinical populations, such as patients with anxiety disorders, PTSD, fibromyalgia, or insomnia.
- Examine potential synergistic effects of combining sound therapy with other modalities like yoga, breathwork, or aromatherapy.

Conflict of Interest

Not available

Financial Support

Not available

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