



A Review of Sound Therapy with Special Reference to Singing Bowls and Gongs in Clinical and Wellness Settings

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Abstract: Sound therapy is attracting the attention of the medical profession because it provides a simple, non-invasive, and potentially cost-effective intervention to promote relaxation and well-being. Sound healing is a term used to describe the practice of intentionally using sound and listening to it in a concentrated way, and the purpose is to facilitate the body's natural healing process. Sound is a vibroacoustic event, and despite being used for healing for centuries, its medical applications are less well known. This narrative review summarizes the key concepts, clinical evidence, and applications of sound therapy in an accessible way for the general public and patients. It explores the potential use of sound therapy for stress reduction, anxiety, insomnia, pain, emotional distress, and some neurological symptoms. The review also outlines the origins of sound healing, the physics of vibration and resonance, and how different sound therapy techniques, such as singing bowls, gongs, chanting, vocal exercises, tuning forks, and musical interventions, differ from each other. Current evidence indicates that sound therapy might be beneficial as an adjunct therapy, particularly in environments where relaxation and emotional support are required.

Keywords: *Sound Healing, Singing Bowls, Gong Therapy, Mental Health, Neurological Well-Being, Relaxation*

1. Introduction

Sound healing is a passive therapeutic practice that uses sound, vibration, and rhythm to promote relaxation and emotional well-being. It's also known as sound therapy, sound bath, or sound meditation [1-7]. Sounds have been used in religious, meditative, contemplative, and

relaxation-based practice for many centuries and across cultures. In present-day wellness and integrative care settings, sound baths and sound meditation sessions are most commonly encountered with Tibetan or Himalayan singing bowls, crystal bowls, monochords, tuning forks, and gongs being used [8-13]. The practice is commonly referred to as a "sound bath" because the sound gently bathes the body and environment. Participants generally don't need to actively participate. They can lie or sit quietly, breathe, and listen to the sound. The passivity and lack of effort required in this practice are one explanation for its popularity among people who are unable to practice formal meditation or find it mentally exhausting. Sound healing has gained more prominence in health and supportive therapies because people want to find simple, non-invasive, and soothing ways to relax and restore [4]. Meanwhile, stress, anxiety, poor sleep, emotional exhaustion, and burnout are prevalent in today's world [1-3]. In addition, neurological issues, like Parkinson's disease, post-stroke disability, cognitive impairment, and pain, continue to be persistent and require ongoing support. These facts have inspired patients, practitioners, and researchers to consider more closely practices that may bring comfort, mood improvement, and regulation without creating a high treatment burden. Sound therapy is one such practice. It has a long history in ritual and religious, meditative and contemplative practice, relaxation and stress reduction, and it is also being explored in medical and integrative medicine. Music is typically thought of in terms of entertainment, celebration, worship, or artistic creativity [1]. Sound healing takes this concept a step further, using sound as a healing tool. In practice, a sound session might involve the use of live instruments, sound recordings, chanting, humming, vocal exercises using breath, or specific patterns of sound [4-7]. Sound sessions may be led by a practitioner or undertaken independently. A quiet space, low lighting, a non-distracting environment, make participants feel safe and able to relax and enjoy the experience. These small things can have a big impact on the session. Scientifically, sound is a vibration that propagates through air, water, or solids as an acoustic wave. These waves are detected by the ear and are perceived as sound, but the body can also respond to them. Sound has characteristics like frequency, amplitude, speed, wavelength, and direction. These will determine how sound is perceived, how far it will travel, and how it will interact with the medium through which it is traveling. Sound is not a thing that moves through a medium like a solid. Instead, it is a wave that causes the particles of the medium to vibrate, and that energy is transferred. This is important because sound therapies often rely on the idea that the rhythm, vibration, and resonance of sound can have subtle but important effects

on the body. Humans typically hear sound waves from 20 Hz to 20 kHz. Sounds outside this range are called ultrasound (higher than 20 kHz) and infrasound (lower than 20 Hz). Within the range of audible sounds, sounds can be perceived as relaxing, steady, rich, or enveloping. Sounds at lower frequencies may be felt more physically, while higher-frequency sounds may be felt as stings. As sound travels through the body and its environment, it can affect breathing, heart rate, muscle contraction, attention, and the feeling of calmness. This doesn't mean that all sounds have a medical impact. The reaction is based on the nature of the sound, its context, its loudness, and the physical and psychological state of the listener. The body is sometimes referred to as a bioelectrical and vibratory system in sound therapy. This is common to traditional and modern accounts. Traditionally, illness might be seen as a pattern of misalignment. From a scientific point of view, we know that stress and illness impact breathing, heart rate, nervous system activity, and focus. Another key concept of sound healing is that cells, tissues, organs, and systems can respond to vibration. Authors describe this in various ways, as some refer to it as resonance. Some use words like relaxation or sensory modulation, or attention shift. Regardless of the phrasing, we observe similar outcomes as some people feel more relaxed, centered, and refreshed after a carefully crafted sound experience. This is a good thing, particularly in the context of a stress-related disease. Even if sound therapy does not affect the disease, it may affect comfort, emotional well-being, and quality of life. Sound therapy has become popular in some wellness circles, but it is also important to have a medical conversation about it because many people are now using sound therapy for stress, sleep, emotional well-being, and complementary care. The present article draws together concepts from physics, psychology, and practice so that readers can appreciate the benefits and risks of sound therapy. The emphasis on singing bowls and gongs is justified because these are very common instruments in sound baths and meditation sessions. They can generate sustained tones, harmonics, and vibrations that are felt throughout the body, and facilitate passive but engaging listening. Their popularity has sometimes grown faster than the scientific understanding behind them, and public claims about energy balancing, deep healing, or brainwave synchronization are not always carefully distinguished from evidence-based findings. This review draws evidence from clinical experiments, systematic reviews, and other articles on music-based and sound-based interventions while presenting the topic in a fair and user-friendly manner. The key topics discussed in the article are the history of the sound healing practice, session structure, acoustic properties of bowls and gongs, biological and psychological processes, stress and mood,

sleep and pain, neurological importance, and safety aspects. These sections provide an overview of how sound therapy sessions are delivered, why they may be beneficial, and what we still need to learn.

2. Historical and Cultural Background

Since centuries ago, the concept of sound healing has been utilized by various cultures all over the world. Sound healing has a rich history in many cultures around the world, such as Egypt, Babylonia, India, China, Africa, the Americas, and Persia. In these societies, chanting, drums, bells, bowls, and other repetitive sounds were used in healing, prayer, and meditation practices [4], [6], [14], [15], [16]. Sound was considered more than just a form of entertainment. It was seen as something that could join the body, mind, spirit, and the universe, and was connected to creation in many cultures. Sound plays a unique role in mantra, meditation, and spiritual practice in South Asian cultures. The term tantra comes from the word to weave or join together, which is about inner harmony and integration. Sound is not only heard, but it is also practiced to increase attentiveness, discipline, and transformation. Humming, chanting, and vocal repetition are common ways of establishing a stable state of mind.

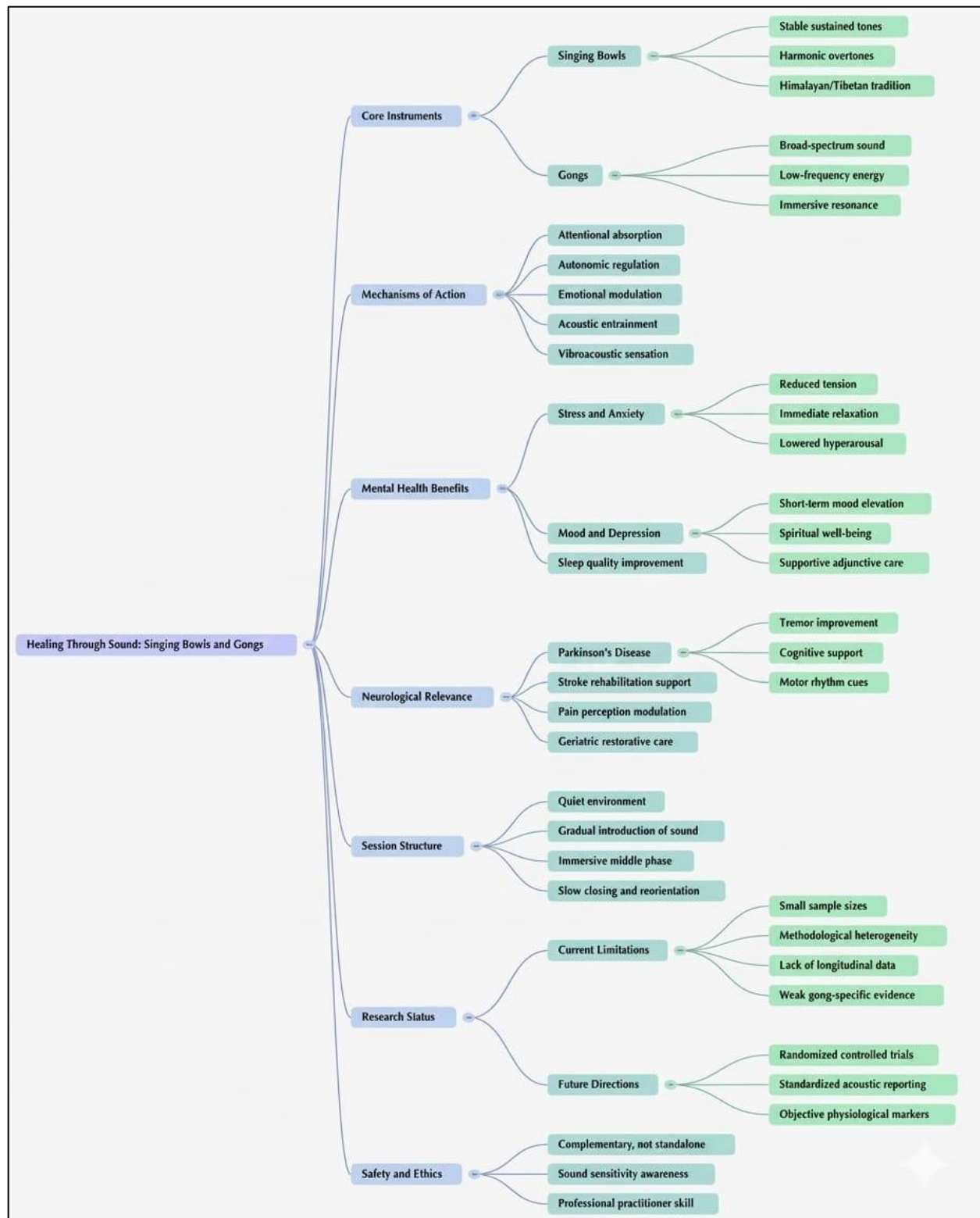


Fig1: Singing bowls research overview

Similar practices are also found in Tibetan and other Buddhist teachings, where bowls, bells, and other musical instruments are used to support meditation. Sound healing has become more formal in contemporary wellness practice. Sound baths, singing bowls, crystal bowls, gongs, and guided sessions are all used in studios, retreats, therapy, and community spaces [17], [18]. Sound sessions are typically straightforward: a person lies or sits while the practitioner slowly and gradually introduces sound. Over the years, not only the bowls, but also the explanations of the practice, have shifted. Older explanations might have included terms like energy, spirit, and harmony, while the newer ones are more likely to include relaxation, balance of the nervous system, and emotional support. Both approaches are still evident in their current practice. Sound healing has become a focus of the Western medical world in recent years. This is partly because it lies somewhere between music, meditation, psychology, and complementary medicine, and doesn't have a place in the conventional medical hierarchy. But this also makes it valuable. Much of its attraction for patients is its simplicity and the relief it offers. They may not require technical understanding; they may only need a practice that is safe, accessible, and relaxing. Sound therapy often provides this, which is why it remains a popular practice in both wellness and health care [13], [19].

2.1 Concept of Sound Healing

Sound healing involves the utilization of slowly repeated sounds to help an individual achieve a state of relaxation, focus, and well-being [7], [20]. In the practice of sound healing, an individual sits or lies down in a quiet environment while being exposed to the sounds of singing bowls, gongs, or other sound instruments [6], [21-22]. In doing so, the individual listens to the sounds without having to perform any action. This is one of the main reasons that makes sound baths so appealing among individuals who find silent meditations very challenging. Repetitive sounds of the bowl and complicated sounds of the gong have been shown to lower inner agitation as the attention becomes concentrated on one source of sound. At a physical level, sound constitutes vibrational energy that is transmitted through the air and perceived by the human ear, while low-pitched sounds might be felt at the physical level as well [24]. Psychologically speaking, slow, non-threatening sounds have the ability to relax the body from stress.

2.1.1 Physics of Sound in Healing

Sound healing is also based on the physics of sound waves, which are characterized by frequency, amplitude, wavelength, and the way they travel through air and through the body [25-

26]. The frequency (in Hertz) of a sound tells us how high or low it is, and the amplitude tells us how loud it is. Wavelength helps us understand how sound moves and how it interacts with body tissues [27-30] In health care, low-frequency vibrations are often significant because they are both heard and felt. Vibrations can affect the body through the skin, muscles and deeper tissues where they can interact with receptors and responses. The concepts of resonance and entrainment can be used to describe this. Resonance is when an object vibrates more when it is subjected to a sound that matches its resonant frequency. An example is a tuning fork. If you set one tuning fork vibrating and hold another tuning fork that resonates with the same pitch close by, the other fork will vibrate. Entrainment is a little different. It means that a rhythm may gradually affect another rhythm until both rhythms move together. In sound healing, this might make breathing, focus and body rhythm slower and more steady.

Another common factor in sound healing is intention. In many methods, the sound practice is thought to create an effect not only through the frequency of the sound, but also through its intention. The state of mind, the environment and the attention are also said to be significant. In clinical terms, this can be understood in a practical sense. A practitioner who is relaxed, respectful and attentive is more likely to facilitate a calm and trusting environment. We can, therefore, think of intention as something that is spiritual, but also as something that is therapeutic in nature. Another important consideration is the role of the voice. Singing, chanting, humming and toning vibrates the body. These techniques are easy, require no equipment, and can be done anywhere. They are usually calming, as they are recognizable sounds of nature. Sounds may affect our body through our ears but also vibration passing through bones and tissue. There are also certain studies pointing out to the fact that our cells have the ability to react to certain frequencies; hence the possible physiological effect resulting from sound therapy.

2.1.2 Chanting, "Om" and Breath-Based Exercises

In sound healing, chanting and breath-based exercises hold a prominent place. First of all, repetition itself has a relaxing effect. One might say that repeating a particular phrase or sound will help to regulate breathing, calm the mind, and reduce the inner dialogue. If performed in a religious environment, chanting might also help in establishing a connection. In the context of sound healing for patients, one only needs to hum or create sound vibrations to achieve a calming effect. "Om" is another sound that has a particularly special meaning in many Indian religious practices. They believe that it is the sound of creation and use it in meditation. From a psychological perspective

as well, its repetitive usage might contribute to concentration. Such interventions are inexpensive, simple, and accessible and thus applicable for use both in individual therapy sessions and in a group. They attract numerous individuals due to lack of additional expensive equipment. One's body becomes the instrument of such practices. Thus, sound therapy does not rely on technological aspects but rather on conscious practice.

2.1.3 Guided Imagery and Music

Guided Imagery and Music (GIM) developed by Helen L. Bonny is an integral component of the field of sound therapy under analysis. This intervention involves specially selected classical music combined with a particular therapeutic relationship in order to assist the listener in exploring his or her own inner experience. GIM is not passive listening. It implies that the listener lies down with eyes closed in a comfortable position and is assisted by the therapist. In some cases, the listeners may reflect on their experiences. GIM is particularly relevant when it comes to the treatment of such conditions as anxiety, depression, posttraumatic disorders, cancer, stress-related issues and others. What makes GIM unique is its application within the context of psychotherapy. Guided imagery and music may not be the same as bowl- or gong-based sound baths, but it belongs in the same broader conversation because it shows how deeply sound can be linked to healing practice. It also demonstrates that not all sound therapy is passive. Some forms are active, reflective, and relational

3. Acoustic Properties of Singing Bowls and Gongs

The sound made by singing bowls is usually a sustained tone with harmonic overtones. The sounds can be created either through striking the bowl with the help of the mallet or singing the bowl using rubbing. The tones are often relaxing, sustained, and rotating, which makes them suitable for meditation and breathing exercises. Gongs are different from bowls in the following aspects. Gongs make sounds that cover a wider spectrum with dynamics changes of sound intensity and overtone groups that feature stronger low-frequency content [31], [32]. Where bowls can instill stability and focus, gongs can have the opposite effect and cause a powerful and immersive auditory experience. In most cases, both gongs and bowls are used together where the bowls ensure consistency and feelings of stability whereas the gongs introduce depth and variation to the session. However, no systematic investigation has been conducted to establish the importance of the acoustic differences between the sounds created by gongs and bowls. The description of

intervention lacks acoustic detail and does not facilitate the comparison of various frequencies, amplitudes, bowl sizes, arrangements, etc. Table 1 outlines major studies examining the psychological, physiological and neurobiological effects of singing bowl and gong sound interventions to provide an overview of the development of research from acoustic measurement through to clinical trials and systematic reviews. Research shows reliable effects for stress reduction, anxiety alleviation and autonomic regulation across a wide range of participants, with variability in methodology.

3.1 Handmade Singing Bowls

Handmade singing bowls are one of the most well-known sound therapy instruments. They have been traditionally used in Tibetan and Nepalese culture for healing and meditation practice. They are now widely used for meditation, relaxation and wellness. Singing bowls are typically metal bowls and can be played by striking or rubbing with a mallet. The tone is typically complex, with many overtones and sustained notes, making it a great listening experience. Singing bowls are so popular because they are easy to play but complex in sound. Even with only one bowl, there are multiple layers of sound. Sound is affected by the bowls' size, material, thickness, and playing style. Some tones sound ethereal and gentle; others are more reverberant. This offers flexibility to practitioners, but it presents challenges for research as each time it is practiced, it is slightly different. Singing bowls have been used to promote mood, reduce stress, promote relaxation, and enhance well-being. Generally, people feel relaxed and centered. Some participants report that the sound helps them pay less attention to outside distractions and focus more on breathing, body, and stillness within. Others just say it's relaxing. This is significant because many complementary therapies are appreciated for both the objective results and the subjective experience.

Table 1: *Literature survey of singing bowls and gongs for stress reduction, anxiety relief, mood improvement, and physiological relaxation*

Year	Study type	Focus area	Key findings	Reference
2013	Acoustic/technical study	Acoustic properties of Tibetan bowls	Helped characterize Tibetan bowl acoustics and supported future standardized sound delivery systems for research and therapy	[33] .

2014	Clinical study	Singing bowl relaxation and meditation	Reported psychological and physiological relaxation-related effects in healthy participants	[9]
2018	EEG study	Brain response to singing bowl frequencies	Reported EEG changes linked to singing bowl sound frequency bands	[34]
2020	Observational study	Mood and heart rate variability	Reported improved positive affect, reduced tension, anger, and fatigue, and improved parasympathetic tone after a sound bath session	[35]
2020	Randomized crossover study	Sleepiness and relaxation	Found reduced subjective sleepiness after singing bowl exposure, though objective sleepiness measures did not significantly change	[36]
2021	Observational EEG study	Brainwave changes during singing bowl exposure	Showed changes in delta, theta, alpha, beta, and gamma brainwaves during singing bowl playing	[37]
2022	Observational study	Mood, emotional, and spiritual well-being	Reported improvements in tension, depression, and spiritual well-being after a sound healing session.	[20]
2022	Clinical intervention study	Gong meditation for occupational stress	Reported significant reduction in nurse stress and occupational burnout	[38]
2023	Randomized controlled trial	Acute anxiety and relaxation response	Found reduced self-reported anxiety, increased heart rate variability, and reduced alpha EEG activity after Tibetan singing bowl exposure	[39]
2023	Clinical study	Mood and autonomic regulation	Reported improved mood, relaxation, and parasympathetic	[35]

			activity after Himalayan singing bowl meditation	
2023	EEG study	Brainwave synchronization	Found increased delta and theta brainwaves and decreased alpha, beta, and gamma activity, suggesting entrainment-related relaxation effects	[40]
2023	Preclinical/animal study	Vibration and anxiety mechanisms	Showed that vibration exposure reduced anxiety-like behavior and affected brain-related mechanisms in an animal model	[41]
2023	Review article	Therapeutic effects of singing bowls	Summarized evidence for reduced tension, anxiety, and depression with possible physiological benefits	[42]
2024	Physiological monitoring study	Heart rate changes during resonant sound therapy	Reported improved stress resistance and vitality based on heart rate monitoring	[43]
2024	Physiological study	Stress and anxiety reduction	Reported reduced stress and anxiety with improved heart rate complexity and autonomic balance	[44]
2024	Randomized cross-over trial	Sound intervention in cancer patients	Reported improved emotional well-being and beneficial cardiovascular changes in cancer patients	[45]
2024	Clinical study	Procedural anxiety reduction	Investigated singing bowl sound as a method to reduce anxiety and alter physiological variables before angiography	[46]
2024	Randomized controlled trial	Anxiety and quality of life in oncology	Reported reduced anxiety and improved quality of life in ovarian cancer patients receiving sound-based therapy	[47]

2024	Mechanistic review	Biological response to sound vibration	Discussed possible biological mechanisms through which sound vibrations may influence living systems	[48]
2024	Conceptual study	Healing mechanism and yogic perspective	Explored theoretical healing mechanisms and traditional yogic interpretation of singing bowl use	[11]
2025	Systematic review	Overall evidence on singing bowl intervention	Reviewed 19 studies including 9 randomized trials and found evidence for improvement in anxiety, depression, stress, and some quality-of-life outcomes, while also noting strong methodological heterogeneity	[12]
2025	Randomized controlled trial	Stress and physiological markers	Reported reduction in stress, anxiety, tension, cortisol, and blood pressure after structured sound meditation	[49]
2025	Randomized cross-over trial	Frequency-specific sound effects in cancer patients	Reported anxiety and stress reduction with cardiovascular benefits, with 432 Hz showing more pronounced effects in that study	[50]
2025	HRV study	Autonomic nervous system function	Examined how singing bowl meditation may influence autonomic regulation using heart rate variability	[51]
2025	Applied educational study	School psychoeducation	Suggested practical use of singing bowl music therapy in educational mental health support settings	[52]

Singing bowls based sound therapy are easy to use and can be used in groups or individually. It can be used as part of yoga, meditation or counseling settings. It is for this versatility that singing bowls are one of the most recognizable symbols of sound healing today. It

is also important to note that singing bowls do not automatically make a therapeutic session effective. The nature of the session, the training of the practitioner, the comfort of the participant, and the environment are important. Several studies have examined the effects of singing bowls on physiology. Some studies have reported a drop in heart rate, alterations in breathing, and changes in well-being following bowl sessions. This implies that the body might be entering a more relaxed state. Heart rate variability, brain activity (EEG) and subjective mood have been measured by some researchers to gain a greater understanding of the response. Although more research is needed, the overall pattern of findings is promising. The neurophysiology of singing bowl exposure has been of particular interest because it may explain the psychological and physiological relaxation responses. EEG studies have reported changes in brainwave patterns while listening to bowls, including relaxation and meditative states. Other research has examined the correlation between the beat frequency of the bowl and the brain response. These results are not evidence of therapeutic effects in a medical sense, but they do indicate the brain is responding to these acoustic signals. For the patient, it may be less important how it works than how it feels. If the patient feels relaxed, and has a slower breathing rate and reduced muscle tension, then the exercise has done something positive. This is especially important for supportive care interventions, where lowering stress and discomfort can be a very valuable outcome even if there is no cure. So, sound therapy is sometimes referred to as a complementary therapy.

3.2 Gongs and Sound Baths

The experience of gongs is different from singing bowls. Gongs emit a bigger, slower, more immersive sound. The impact of the sound can be intense and powerful during a gong bath because it feels like it's travelling through the space and through us. This can be described as a wave effect. Some experience a feeling of release or relief. The gong's frequency spectrum makes it a powerful part of sound therapy sessions. Gongs are highly regarded for their transitional effect. For instance, the practitioner may start a session with gentler instruments to help people relax into the session and then use the gong to enhance the experience. The gong sound can also be used to end a session slowly. It has strong low frequencies and harmonics, which can give a sense of expansiveness and depth. Like singing bowls, the use of gongs in therapy depends on the circumstances. It can be uncomfortable if played too loudly or too suddenly. So the use of gongs is a process of discernment, pacing, and personal comfort. When administered properly, gong

sessions can aid relaxation, emotional release, and meditation. They may be particularly beneficial for listeners who enjoy a more immersive sound.

3.3 Mechanisms of Action

Several mechanisms have been put forward to explain how singing bowls and gongs might affect well-being. Perhaps the simplest is relaxation by absorption. Slowly evolving sound can minimize distraction and shift attention away from worry and emotional distress [53]. This might be helpful for individuals whose distress is perpetuated by cognitive hyperactivity, high vigilance, or inability to disengage from stressful events. Another possible mechanism is autonomic regulation. Auditory patterns associated with slow breathing and low arousal may promote a shift from sympathetic activation to parasympathetic recovery, and so decrease heart rate and respiratory rate, with a subjective feeling of calmness [54], [55]. This explanation is corroborated by other research on music and heart rate regulation, as well as reports of reduced tension and increased relaxation following bowl meditation. A third mechanism is emotional processing. Resonant sound fields can modulate emotional state via their capacity to reduce vigilance, increase feelings of safety and provide a structured but nonverbal emotional experience [56], [57], [58]. Participants report this as "emotional release", while researchers tend to refer it as mood change, tension or self-report of psychological distress. A fourth mechanism, particularly important in neurological applications, is acoustic or rhythmic entrainment. Auditory cues have been shown to affect motor timing, walking and brain processing in some disorders, such as Parkinson's disease. It would be an overstatement to say that singing bowls or gongs work via this mechanism in all contexts, but it is certainly possible that rhythmic sound can influence neurophysiology. Lastly, vibration may play a role in the effect, particularly when instruments are positioned close to the body, or the low-frequency gong sound is so loud that it physically vibrates the body. It is not clear if this is a unique therapeutic action apart from auditory processing, but it should be directly assessed in future studies.

3.4 Music, Rhythm and the Nervous System

Sound therapy is allied with, but not the same as, music therapy. Music therapy is a professional practice with defined training and goals, whereas sound therapy may be more geared towards sensory and relaxation effects. But both acknowledge that rhythm, sound and sound structures can have an impact on emotional state and physiological processes. Slow rhythmical sound can slow down breathing and relax the mind. Sharper sounds tend to stimulate alertness.

We can see this interaction first-hand. Many children are soothed by a lullaby. Chanting can clear the mind. Music can lead to coordinated breathing and movement. And unpleasant or loud sounds can evoke stress. These examples demonstrate the fundamental notion that sound affects human experience. This can be used in a strategic way in therapy. The nervous system seems to be particularly sensitive to rhythmic sounds. Certain sound techniques promote parasympathetic activity, which is linked to the rest and digest response. Activation of the parasympathetic system can lead to slower breathing, reduced anxiety, and reduced muscle tension. This is why people often feel calm and relaxed after a sound session. For those under chronic stress, this can be significant.

3.5 Session Format for Sound Therapy

Typically, a session is conducted in a darkened and quiet room. The client may be lying on the ground or in a supported sitting position while the practitioner introduces the instruments. The beginning of the session will often involve softer sounds and more predictable tones to allow the listener to relax. Later on, more bowls, or multiple tones or gong waves, may be simultaneously introduced. In addition, the practitioner will walk around the space to alter the listener's perception of the sound [7]. In other approaches, bowls may be positioned close to the body or softly played in proximity to different parts of the body.

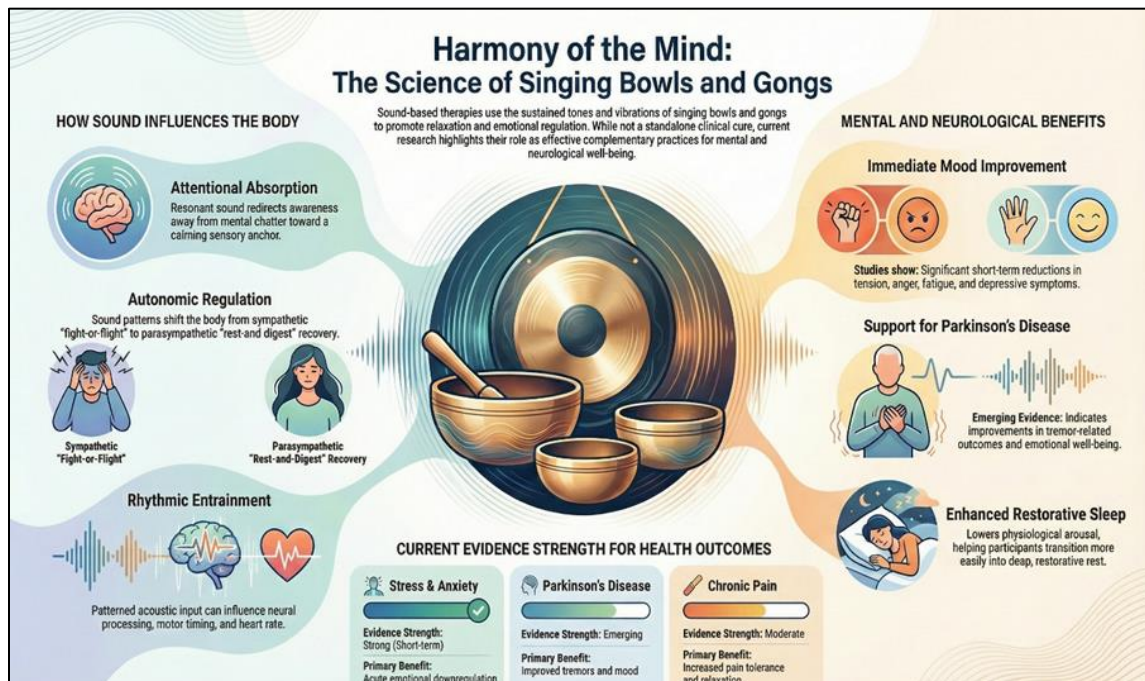


Fig 2: Singing bowls & gongs from ancient vibes to modern neuro benefits

The ending is usually slow. Sound is gradually turned down to facilitate reorientation and to ease the transition from deep relaxation back to normal awareness levels. This is important because therapeutic relaxation exercises are often related to not just the instrument but also to timing, predictability, safety, and skill.

4. Psychological Benefits

Psychological improvements are the most frequently reported benefits of sound therapy. Patients report feeling less stressed, less worried, less full of thoughts, and calmer after listening to sound therapy [20]. Some also report feeling happier, more peaceful, and sleeping better the night following the session [10], [20]. These effects are not insignificant. They represent a shift in the way the person feels in their body and mind. Sound healing is often sought for stress and anxiety. In our busy world, with its noise, distractions, stimulation, and time constraints, the experience of quiet, rhythm, and calm can be refreshing. This is particularly true for those who dislike highly verbal therapy or for whom meditation is hard to practice. Sound therapy offers an easy pathway to relaxation with little effort on the part of the client. Several studies have reported that sound therapy can decrease anxiety ratings and increase relaxation responses [52], [59], [60]. This can happen after just one session, but it is sometimes difficult to see the longer-term effects. The patient may feel more relaxed right after the experience but may still require more comprehensive support for ongoing anxiety or depression. So sound therapy should be seen as an additional aid rather than a complete cure for all mood disorders [61], [62].

Table 2: *Types of sound-based interventions.*

Type of Sound Intervention	Description	Mechanism / How it Works	Key Outcomes
Binaural Beats	Two slightly different sound frequencies are presented separately to each ear, producing a perceived third beat frequency in the brain.	The neural oscillations are synchronized with the frequency difference between the sounds by brainwave entrainment.	Better concentration, rest, and states of meditation.
Vibroacoustic Therapy	Low sound vibrations are used to treat the body through special beds, chairs, or speakers positioned next to the body.	Mechanoreceptors and neuromuscular pathways are stimulated by vibrations, and it enhances physical relaxation.	Reduction of pain, relaxation of the muscles, enhancement of motor strength.
Sound Healing / Sound Bath	Sound healing involves the use of resonant instruments, like Tibetan singing bowls, gongs, and tuning forks to produce vibrations in harmonic sound.	Sound resonance can act on the brainwave pattern and stimulate the work of the parasympathetic nervous system.	Deep relaxation, reduced stress, and improved emotional stability.
Nature Sound Therapy	Exposure to natural sounds such as rainfall, ocean waves, or birdsong.	Natural sounds stimulate physiological relaxation processes.	Mood-improvement, mental relaxation, and restoration of cognition.

4.1 Anxiety, Stress, and Mood

Stress can be both psychological and physiological. It can influence respiration, muscle tension, pulse, digestion, sleep, and the immune system. Since sound therapy can create a relaxed state, it can temporarily undo some of these effects. This can be important for chronically stressed people. Sound therapy relaxation tends to occur gradually. They come into the therapy, they begin to relax, and they begin to hear more [10]. Breathing may slow down. The jaw may soften. Shoulders may drop. Thoughts may become less imperative. Others may just go into a less active state of mind. The experience is rounded off by a gradual return to normal awareness. This is one of the ways sound therapy is used differently from passive entertainment. The sound is used with intention. It is being used intentionally, with pacing and with therapeutic intent. That difference

matters. A sound environment can be a tool to move people from stress to relaxation. For people with chronic stress, this time off can help them recover and heal.

4.2 Depression and Emotional Well-being

Depression is more than feeling sad; it can involve feelings of low energy, feeling weighed down, changes in sleep, difficulty focusing, and loss of interest in once pleasurable activities. Singing bowl sessions are effortless and can facilitate supportive rest, which may make them a more acceptable alternative than self-regulatory effortful strategies for some people in periods of low motivation, as shown in Fig. 2. This is one of the reasons why many studies have investigated their use with older adults and other vulnerable populations [12], [63], [64]. Some studies report that depressive symptoms decrease in older adults and in participants with Parkinson's disease after singing bowl sessions [65], [66], [67], [68], [69], [70], [71]. These reports do not demonstrate that bowls are an alternative to psychotherapy or medical treatment for depression, but they do suggest that bowls can be used to enhance comfort, relaxation, and mood. Sound healing may enhance emotional well-being without making the stronger claim that it cures depression. Positive emotional states such as inner peace, calmness, and connectedness are also aspects of emotional well-being. Research on bowl meditation reports improved spiritual well-being or subjective peace [10]. Spiritual well-being is evident in sound therapy when chanting the Om, mantra, or working with sound in a community. These traditions often treat sound as a bridge between the ordinary and the transcendent. In the West, the terminology may be less spiritual, but the experience can be felt as such. A participant may simply say that the session gave them a sense of peace or restoration. Not all participants will have a spiritual experience, and sound therapy should never demand a specific belief. The approach should be inclusive and non-judgmental.

4.3 Sleep and Restorative Recovery

Sleep is a common issue where supportive care is sought. Lack of sleep is linked to stress, anxiety, pain, and ill health. Sound therapy may help because it can trigger a relaxation response prior to sleep. It may be easier for someone to relax after a quiet sound session and then drift off to sleep. Research shows that relaxation inductions using sound and music can enhance sleep, particularly if sleep difficulties are related to stress or anxiety [72]. Some interventions are applied just before sleep, while others are part of a relaxation program. Importantly, it's not just the sound, but how it's applied. Consistent, soft, culturally familiar sound is likely to have greater sleep support than loud, unfamiliar, or intense stimulation. If the intervention helps someone sleep a

little better on the same night, this may improve mood, energy, and well-being the following day. Supporting sleep is a very appealing application of sound therapy because the treatment is non-pharmacological, relaxing, and straightforward to implement. But more careful studies should be done to identify who would benefit most and what kind of sound therapy is most effective.

4.4 Pain, Relaxation, and Body Awareness

Sound therapy has also been used for pain. Pain is a sensory, emotional, and attentional event. If a person is relaxed, pain may be less bad. When someone is anxious, pain can be magnified. Sound therapy may benefit by relaxing tension, distracting, and improving a person's physiological comfort [73]. People report sound sessions as relaxing. They can feel warmer, relaxed, less tense, or less stressed. These effects do not eliminate the pain but can change the subjective experience of pain. This is relevant in supportive care. Pain relief is important even if the cause of the pain is still there. There is also some evidence supporting use in rehabilitation, where pain and stress frequently co-exist. A relaxed body may be more willing to engage in recovery. A relaxed person may breathe more easily and sleep more easily. So, sound therapy may promote comfort and healing, but not necessarily pain relief.

5. Singing Bowls in Older Adults

Elderly individuals are of particular interest as many are lonely, have sleep problems, pain, depression, and are more vulnerable to stress. Singing bowl interventions may be appealing here because they are low-impact and can be performed sitting or lying down [59]. The studies identified clinically relevant reductions in depression and anxiety in hospitalized elderly participants in at least one randomized trial, suggesting that bowl-based sessions may have practical value in restorative care [74], [75], [76]. These findings are especially important because pharmacological approaches in older adults can be limited by polypharmacy, sedation risk, falls, or interaction burden. Thus, sound-based relaxation approaches should be more rigorously tested as an adjunct, non-pharmacological approach in older adults. But research in older adults also needs to consider hearing ability, cognition, and tolerance of the sessions. Loud or noisy sounds might not be tolerable for all, so individualization is required

6. Neurological Relevance of Sound-Based Interventions

The significance of sound therapy in these conditions is critical because the treatment itself

needs to be carefully administered. Those with sound intolerance can be particularly sensitive to loud sounds. The neurologic importance of sound therapy has been a recent topic of interest. These have included potential impacts on brainwaves, relaxation, mood, and stress. Although not all sound therapies are neurologic, they may be capable of affecting brain state. This is particularly important for conditions that involve stress and nervous system arousal. For example, some researchers have investigated sound therapy in terms of meditation-like states, attention control and down-regulation of hyperactive stress responses. Others have examined the use of sound therapy in palliative care for people with neurological disease. Music therapy has demonstrated the benefits of sound interventions for emotional, movement and coping skills in a number of settings. Sound healing builds on some of the same principles but is typically more passive and basic. It is important not to overstate this evidence. Sound therapy is not a cure for neurological disease. But it may offer comfort, relaxation, and a more positive state of mind. In this way, it might assist people to cope with their chronic neurological disease and the psychological distress associated with it.

6.1 Post-Traumatic Stress and Trauma

Post-traumatic stress disorder (PTSD) is a severe mood disorder that impacts sleep, attention, hyperarousal, and well-being. Sound-based interventions have been explored with trauma because trauma can result in a hyper-arousal of the nervous system. Soft sound interventions can help develop a safe internal environment, de-arouse, and regulate emotions. This research includes music therapy, drumming, guided imagery, and other sound interventions. Those interventions might help some people feel more centered, connected, and contained. Containment is important in trauma work. When they feel safer, they may be able to process their trauma and return to a calmer state at the end of the session. Again, caution is essential. Trauma is not straightforward, and sound can be both soothing and distressing. Loud sound isn't suitable for all. It's important to be nuanced, responsive, and kind. Sound therapy should be used with care when working with trauma and never in an unsolicited manner.

6.2 Cardiovascular and Hospital Settings

The use of sound therapy has also been described in cardiovascular care and the hospital setting. Hospitals can be loud, stressful, and traumatic. For surgical patients, those with heart disease, and those recovering from intensive care, the sound environment may help to ease stress and increase feelings of security. This is important as stress can delay recovery. Sound and music

have been studied in cardiac rehabilitation, surgery, and children. In some studies, patients who received calming sounds or music experienced less anxiety, lower cortisol levels, greater relaxation, and greater subjective comfort. For kids, it may reduce the fear of procedures. For adults, it may relieve stress and promote healing. A more "sound-aware" environment in health care is attractive because it considers sound as part of the healing environment, rather than background noise. So sound therapy might be useful not just as a direct intervention, but to influence the healthcare environment as well.

6.3 *Hyperacusis, Tinnitus, and Sound Tolerance*

Sound therapy is also used in some conditions that involve sound tolerance, such as hyperacusis and tinnitus. Hyperacusis is when sounds are perceived to be too loud or painful. Tinnitus is hearing sounds (such as ringing or buzzing) when there is no source. These can be distressing and interfere with sleep, mood, and well-being. Sound therapy for hyperacusis typically proceeds slowly. The aim is not to overwhelm, but to train the auditory system to get used to the sound. In tinnitus, some methods involve self-generated sound, relaxing sounds, or humming to ease distress and enhance coping. These approaches may not necessarily stop the symptom, but can make it less disruptive.

6.4 *Neurological Support and Mental Clarity*

Some people with neurological conditions may benefit from sound therapy, especially if they are also stressed, fatigued, have poor sleep, or mood. For people with Parkinson's disease, sound therapy may help to relax and calm. There's some evidence that singing bowl sessions can improve anxiety and mood in people with Parkinson's disease, and even some evidence for improved thinking and memory skills [77]. This is significant as Parkinson's disease can also impact sleep, energy levels, emotions, and well-being. It may also cause sleep disturbances, fatigue, mood changes, and a reduced quality of life. So sound therapy may be a supportive measure that can be used in conjunction with standard care. A study that used binaural acoustic stimulation also reported a reduction in tremor and mood symptoms, suggesting that sound stimulation may be beneficial here [78-80]. Stroke patients are often weak, have trouble with speech, feel tired, stressed, and have sleep problems. This can be a slow, gradual process, which is influenced by the person's emotional well-being and motivation to engage in therapy. While there is no direct research on singing bowls or gongs in stroke, the broader research on music and other calming sounds suggests these approaches may encourage people to feel calmer and more

able to participate in rehabilitation. So, sound sessions can be regarded as a supportive therapy in recovery, primarily to calm people down and enhance their sleep, but not necessarily as a replacement for rehabilitation [78-81]. Many also report feeling their minds are sharper after sound therapy. To put it simply, this may be because the session allows the mind to relax. This doesn't mean that sound therapy has a big effect on intelligence or memory. However, if a person feels less anxious and stressed, has improved sleep, and feels more relaxed, then their focus may improve. Some studies have shown improvements in short-term memory after bowl therapy practice. But future research needs to use cognitive tests to separate the effects of mental clarity from mood improvement.

7. Gongs: Special Potential and Current Issues

Gongs should be mentioned separately as they are often the most dramatic feature of a sound bath. Their low-frequency content, spectral complexity, and reverberance can create a strong immersive effect and enhance the sense of a profound release or transformation. When used in groups, gongs may also contribute to a collective acoustic environment that affects feelings of collective silence or attentional presence. Unfortunately, the published clinical research on gongs is much smaller than their popularity would indicate. Most of what has been written is descriptive or practitioner-driven, or "wellness journalism" rather than controlled research [5]. It would be fair to say that sound sessions using gongs are popular for relaxation and stress reduction, and their effects are credible based on the evidence about immersive sound, emotion regulation, and autonomic relaxation.

7.1 Comparison with Music Therapy and Vibroacoustic Approaches

The use of singing bowls and gongs parallels music therapy and vibroacoustic therapy, but isn't exactly the same. Music therapy is a professional practice that may involve specified goals, interactive therapy, and protocols tailored for emotional, cognitive, communicative, or motor responses. Most singing bowl and gong sessions are less interactive and more immersive. Vibroacoustic therapy is more specific to the therapeutic use of low-frequency sound vibrations through chairs, mats, or beds, with sometimes controlled frequencies [82]. There are some possible similarities with singing bowls used on or close to the body, but most bowl studies lack the technical control of sound. This is important when considering mechanisms or when designing future therapeutic studies. The fields of neurological music interventions are helpful because they

help frame possible mechanisms of attention, movement, rhythm, and mood. However, when making claims about bowls and gongs, we should always look to studies that have used them, rather than over-interpreting findings from other areas.

7.2 Safety, Contraindications, and Ethics

Sound healing is generally considered safe when done properly, but it should not be assumed to be appropriate for all people. High intensity or duration may not be tolerable for those with sensitivity to sound, migraine, severe anxiety, tinnitus, post-traumatic stress, vestibular dysfunction, or some neurological disorders. It's therefore essential to use volume control, obtain informed consent, and use a gradual approach. These techniques can be used as adjunctive, supportive, and participant-centered. This is especially critical for vulnerable populations like the elderly, inpatients, and those with neurodegenerative diseases. Health-care environments may also have to take into account hearing aid use, mobility, infection control, body posture, and sensory overload risks.

7.3 Current Research Limitations

While the overall picture is positive, there are limitations to the scientific evidence. Many studies are small. The type of sound, duration of sound, location, and style of practitioner vary considerably. As a result, it is hard to be sure that we are talking about the same outcomes. Another issue is that many outcomes are subjective. It's important to feel relaxed, peaceful, or rejuvenated, but it's not always easy to quantify. Research may depend on questionnaires, which are indeed useful, but they may be biased by expectations and the placebo effect. These results are certainly not worthless but rather must be understood within context. A person may feel better after one session, but the duration of these effects and the frequency of sessions are unknown. It would be good to have more standardized protocols. [83], [84]. These limitations underscore the need for more rigorous, large-scale studies with standardized protocols and long-term follow-up to fully understand the role of sound therapy in treating various medical conditions.

8. Future Research Directions

The next step is to define, measure, and follow patients for longer. Comparisons of various equipment, sound waveforms, and training formats could be very useful. We also need to research what type of patients do best, and what type of settings are best. A few individuals might find their benefits from the bowls, others from the music, yet others from chanting or visualization practices.

We don't know for sure yet. It would also be useful to combine subjective reports of well-being with objective measures of heart rate variability, cortisol, sleep quality, or electroencephalogram (EEG). Such research will help to understand the mechanisms of sound therapy and identify those most likely to respond. More details on instruments used, sound level, and context of treatment would also be beneficial. For use in patients, future research should further improve the communication of sound therapy. It should be straightforward, not overstated. That's particularly important if the intention is to inform patients about the therapy, not dazzle them.

8.1 Clinical and Wellness Applications

Regardless of its limitations, singing bowls and gongs have a place in mild support contexts. They can be used to facilitate a setting conducive to relaxation, emotional regulation, and mindfulness. They may be part of wellness initiatives alongside yoga, meditation, respiration techniques, counseling services, or stress reduction activities. In healthcare or integrative health-care settings, bowl sessions may be best used as complementary interventions to treat symptoms, rather than to replace conventional treatment. This includes facilities aimed at alleviating anxiety, providing comfort, aiding sleep, helping with cancer management, managing chronic pain, or enhancing quality of life in neurodegenerative disorders. Screening and customization remain essential. The key message for researchers and clinicians is that the field is not yet ripe enough to make far-reaching claims, but ripe enough for further research. This strategy maintains scientific integrity and credibility.

Thyroid disorders

Relaxation by sounds could be relevant to thyroid disorders as vibration or music could help to reduce the stress and anxiety level, which is one of the most common problems in these patients. Listening to music during thyroid fine-needle aspiration biopsy was found to reduce pain and anxiety in a randomized clinical trial, which indicates a calming effect in the treatment of thyroid disorders [85]. Furthermore, a laboratory experiment revealed that the function of thyroid epithelial cells was improved with vibratory stimulation, indicating the possibility of a mechanism by which mechanical vibration affects biological activity related to the thyroid. The present

findings validate the application of sound therapy as a calming complementary care for thyroid disease.

Diabetes

Additionally, sound/music-based interventions can be used to help support individuals with diabetes to relax and to enhance their quality of life. The review of controlled studies indicated that Music therapy might have a positive impact on patients with type 2 diabetes, but further research is required. In another study, inaudible high-frequency components of sound were linked to glucose tolerance in a crossover design. Therefore, sound therapy can be considered as a complementary technique that can be used to manage stress-related diabetes management aspects [86].

Blood pressure

Music treatment is clearly included in the treatment of hypertension as a supportive therapy in relaxation. A pilot study showed that an audio relaxation program significantly reduced systolic and diastolic blood pressure in older adults [87]. A meta-analysis further revealed that music therapy decreased blood pressure and heart rate in patients with hypertension. These findings suggest that sound-based interventions can have a beneficial effect on calming the body and maintaining cardiovascular balance.

Cancer

In cancer, sound therapy is helpful to support emotional and physical comfort. A 4-week sound intervention was reported to enhance social functioning, fatigue, and certain patient-reported outcomes in cancer patients, in a prospective randomized trial. In a different study, it was discovered that tuned sound interventions had a positive impact on improving emotional well-being and some cardiovascular parameters in cancer patients. This indicates that sound therapy could potentially assist patients in easing their sense of stress and support during cancer treatment [88].

9. Conclusion

Sound therapy is an emerging, non-invasive, and user-friendly supportive therapy with the potential to alleviate stress, anxiety, emotional distress, sleep disturbance, and certain types of physical pain. It wedges between ancient practices and modern clinical interest and is particularly appealing because it is easy to experience and well-tolerated. The use of singing bowls, gongs, chanting, voice work, and participation in guided music practices all play a part in informing us of

the potential benefits of sound. What is available in the literature suggests that sound therapy is beneficial, especially as an adjunct therapy to broader care. This may help with relaxation, enhance subjective feelings of well-being, and facilitate rest. Better studies are needed to better understand how it works, how it can best be applied, and what long-term effects it has. Sound therapy could make you feel more relaxed, grounded and present in your body and breath. This can be beneficial in recovery, provided it's used judiciously and with appropriate expectations. So, it is likely to play a valuable role in improving patients as the field evolves. The technological innovations, such as music generation algorithms powered by AI solutions and individualized soundscapes, highlight the future potential of auditory interventions for improving psychological health and well-being.

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