

The implications of vibration and sound therapy in modern medicine: A literary review

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Author Biography

Sapna Annambhotla is a Suwanee, Georgia resident and a student at North Gwinnett High School. Although this is her first published paper, she has written a multitude of papers and done research on a variety of topics for both debate and AP Seminar/AP Research. As a student she is heavily involved in the musical theater department, the STEM program, student government/leadership, volunteer work at hospitals, debate on the international circuit, and even is involved with her city's council in public policy. Her background and interest in researching as well as public health led her to this culmination of writing this piece. When the opportunity to write and publish this paper was given to her, she took it immediately not only because of her interest but because of this topic's importance to her and in general. When she is not researching/writing she enjoys cooking, singing, helping others, and spending time with family and friends.

Abstract

The following literary review studies the overall science behind vibration-based medicine and healing techniques. Specifically, the effects that 432 hertz has on the body as well as the implications of such healing techniques in western medicine and hospitals. Through studies and literature on the use of sound/music in ancient healing techniques, it is found that sound frequencies (different hertz. levels) can be a healing technique in modern medicine as well. This literary review was found using a multitude of articles and novels on the background of sound therapy, various mediums of implementation, as well as studies on the specific effects on the human body - neurologically and physically. There were 19 articles found through research and 14 were used. The major key words used were frequency healing, modern medicine, sound therapy, 432 hertz neurological impacts, and healing medicine. After reading abstracts of various articles and gathering background information, a culmination of authors' analysis and studies were used to make a nuanced argument on the implementation of sound therapy in the modern medical industry. After analyzing the data gathered, it was found that there is a direct correlation between frequencies and their ability to help treat diseases throughout the body. Moreover, there were clear links between specific frequencies and how they can be applied to different areas to even diagnose diseases years before current technology can. Building upon that, this healing technique is very versatile in that it can be used for a multitude of problems ranging from physical pain to sleep insomnia to cardiovascular diseases. Furthermore, the research found can be integrated into the western healthcare sector to provide easier, low-cost, and low resource treatment that is effective for all.

Keywords: sound therapy, vibration therapy, 432 hertz, modern medicine healing, frequency healing, frequency neurological impacts, vibration - use in medicine, healing medicine

Introduction

Sound is made up of three components: pitch, wavelength, and quality. To define it, pitch is the amplified quantity of sound. Wavelength is the measure of volume and vibration of sound using the frequency - which is how many waves pass through a single spot in a certain time. Quality, the last component of sound, is the purity of the sound itself. Because frequency is repetitive in a certain amount of time, it is measured in a unit called hertz. This measure of frequency can be associated with different notes on a standard chromatic scale. For example, the note commonly known as middle c is around 261.6 hertz as a frequency measurement. Vibration based therapy, also referred to as sound therapy, is one of the oldest forms of healing still practiced today. When listening to music - and even singing, the cells in our body resonate or vibrate at the same frequency. This can offer an alternative, drug-free, treatment for pain and other medical conditions (Heather, 2007, p. 7).

Although it is an ancient healing technique, scientists have developed ways to manipulate frequencies and utilize this low - cost and low - resource healing approach in modern times. The question of the effects that frequencies and sound in general can have on humans neurologically and physically has been widely studied, however, sound therapy is still not widely used and practiced in modern medicine. This is a vital subject of study because of the benefits it can have on low - income hospitals and people - who may have trouble getting necessary healthcare. Nina Avramova (2019) illustrated the importance of music in that it affects an individual in many facets - illness, depression, and much more. Not only that, but some research has even suggested that it can “increase aggressive thoughts or encourage crime” (p. 4).

Discussion

Implications of Sound Therapy

Although sound therapy is not widely researched, Johnathon Goldman (n.d.), a pioneer in sound healing research internationally, explains how sound therapy works. He writes that sound therapy is a vibrational based medicine that uses sound to create “balance and alignment in the physical body” (p. 1). This alludes to the fact of how adverse the effects sound therapy can have on the human body. Because this author establishes that the vibrations of the frequencies can balance your body and energy centers, also known as chakras, it can be noted that sound therapy can help heal problem areas in the body. Goldman (n.d.) then further explains how sound therapy can be used through a mechanically produced instrument or even by human voice (p. 1). This is important to establish because there are various techniques - low cost and low resource - that can be used in sound therapy. Chris Boyd- Brewer (2003), an independent researcher from the *Alternative and Complementary Therapies science journal*, defines sound healing using frequencies and vibrations as a “technology that uses sound in the audible range to produce mechanical vibrations that are applied directly to the body” (p. 1). He then goes on to provide examples of problems that the implementation of sound therapy has healed. Such examples outlined are how therapy can help “manage pain; reduced symptoms for patients in chemotherapy; reduce stress; distract patients during biopsies, aspirations, and other procedures; increase range of motion (ROM) and muscle tone and in physical therapy or rehabilitative therapy following knee replacement; help prepare patients for surgery or those who are recovering [...]” (p. 2).

Not only have we established that sound therapy helps heal, but it also can be used as a tool for diagnosis of medical issues as well. The Holistic Research

Institute found that by keeping an eye on the pulse's frequencies and amplitudes, we can diagnose diseases five to seven years before symptoms show. They explain that because organs vibrate - in ultrasound waves - holographic recordings of patients' voices, called the Vocal Profile, can show if there are missing frequencies in their voice. If there are missing frequencies, compared to a healthy human's Vocal Profile, they can analyze the medical state of the individual - as well as the disease/problem area in specific (Kumun, 2023, p. 9).

The last thing to consider when looking at how sound therapy works and how it can be implemented is the neurological implications. Now that it has been established that different frequencies have physical medical effects, it is important to also note that these can also impact the brain and its various conditions as well. Pracana and Wang (2018) cite O'Connor (2012) in explaining how using frequency stimulation and therapy "impacts significantly the neuroplasticity of the brain through activating the middle ear, inner ear, and eighth cranial nerve connections on the brain stem and each neural development, because neural structures of the brain keep changing and growing through sound energy" (p. 392). The neurological impacts are key because of the rising neurological problems in society, including rising suicide rates.

Neurological Impacts of 432 Hertz

Building on the fact that frequencies have neurological implications, we see this demonstrated specifically when analyzing the effects of one specific frequency - 432 hertz. In 1936, at the international conference for the music community held in London, a coalition of countries agreed to standardize all music to 440 hertz. This entails that all instruments, orchestras, and musical compositions would have a base note that is the musical note A above middle C - A4 in musical notation (Tanasic, 2022, p. 4). Though the reason for standardization is unknown and disputed, the effects on

humans are not debated. However, 432 hertz is proven to show better neurological improvements across various fields. This specific frequency, 432 hertz, has a lot of debate regarding the importance of this frequency. Though there are many theories, one being that 432 hertz is the base frequency when the universe was created, it is not disputed that 432 hertz tends to show positive effects on both the brain and the body. Through meditation and sound therapy, 432 hertz can be used to heal the mind and invoke a feeling of peace among patients (Nho, 2016, p. 10).

The frequency, 432 hertz, is another form of A4 - though slightly different in the tonal feel. However, though the audible differences are small, the neurological differences between 432 and 440 hertz are widespread across many different areas of the body. One such implication is improving sleep apnea in patients with spinal cord injuries and surgery recovery. In a double-blind study done by Calammassi (2020) and his team at ACTA Biomedica, a researching firm, they found that there was a significant improvement in the sleep scores after listening to 432 hertz-based music (p. 5). Because of this, the frequency level 432 hertz can be used as an alternative to pain medications - that can sometimes cause addictions - for post-surgery and/or injury for patients.

Another implication is the use of this frequency in cardiovascular parameters in cancer patients. In a random crossover trial performed by Anna Hohnneck (2024) and her team at Heidelberg University, it is found that patients with higher cardiovascular parameters, such as BPM and cholesterol, who listen to music that is turned to 432 hertz show lower problems on those measure which reflects deeper relaxation (p. 7). This illustrates that the use of 432 hertz-based music in cardiovascular patients also can have positive implications for cancer patients undergoing chemotherapy - which often can increase blood pressure

and other cardiovascular parameters. Although 432 hertz has obvious positive physical effects, the neurological effects on stress parameters are vast. An exploratory study done on college students by Ethan Makinster (2024), a professor at Oregon State University, showed that music at 432 hertz and binaural beats can reduce a variety of stress biomarkers in addition to perceived stress (p. 5). The self-proclaimed stress levels of college students were measured before and after listening to music tuned to 432 hertz. The study found that after listening to binaural beats and music based on 432 hertz, the college students showed improvement in their stress levels as well as work output. This shows that this music can be a huge factor in suicide rates, the mental health epidemic, and even dropout rates in college.

Uses in Modern Medicine

After illustrating the various positive impacts of using vibroacoustic therapy, it is important to discuss the limitations and implications of implementing this useful tool in modern medicine and hospitals across the country. Authors from the journal, *Neuroscience & Biobehavioral Reviews*, found that though applications of music therapy haven't been widespread in western medicine practices, it is imperative that it be implemented due to its vast emotional benefits. As discussed above, musical and vibration based medicine has adverse emotional and neurological effects. These impacts can help accelerate the healing process within treatments, clinicals, surgery recovery, as a non-pharmacological treatment for pain, and more (Bernazky et al., 2022, p. 1991).

In the book *Tuning the Human Biofield: Healing with Vibrational Sound Therapy*, the author outlines several ways that music therapy can be used in hospitals, including playing music following surgery, setting up a department of music therapists and scientists, and providing tuning forks and vibration tools for at-home pain relief

and recuperation. These methods are just a few of the ways that hospitals can implement vibration healing techniques into their treatment plans (McKusick, 2021, p. 20).

A principal way that sound therapy and vibrations can be implemented into modern/western medicine practices is through the use of harmonic tuning forks. Building on what McKusick outlined, tuning forks are a foremost way to accomplish sonopuncture. Tuning forks are special pronged devices that produce different vibrations. They can be placed directly on pressure points as well as can be heard audibly. Because they are low cost and low resource, as well as are a vital tool for vibroacoustic therapy, it is unchallenging to implement in hospitals (Thomason, 2010, p. 24).

Lastly, sound therapy can change the face of medicine and help innovate solutions to problems that western medicine has not yet solved. One such example is cancer treatment and prognosis. Authors, Mohsen Jafari and Mohammad Hasanzadeh (2020) found that cell - specific frequencies can be a form of early detection of cancer (p. 5). Because different organs have specific frequencies in their cells, using the Vocal Profile - as discussed above, you can use the missing frequencies to find possible cancerous or problematic cells in the body. This is not only innovative and low-tech, but it can save the thousands of lives stolen by cancer each year.

Conclusion

Sound therapy is an important healing measure because of the vast medical conditions it has been shown to solve. Ranging from neurological problems to physical, cardiovascular, and bone conditions, sound therapy can help alleviate and sometimes even diagnose medical conditions. One specific frequency, 432 hertz., is not only an integral frequency that

has many positive effects on the human body, but it also can be attributed as a base frequency for the body as well as the earth itself. Because frequency and vibration-based therapy can be used both audibly and mechanically, it is a low cost and low resource healing method. The implication of this is that hospitals with less funding and resources can still implement these healing techniques on their patients. This method also can be used as an at-home remedy. Although to a lesser extent, listening to specific frequencies, such as 432 hertz, at home can be a lay method to solve surface level problems such as stress, insomnia, depression, etc. This innovative technology can revolutionize western medicine if put into place.

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