Sound Healing

Background/Definition

Since its development as a therapy in Australia over 40,000 years ago, sound healing has been used in nearly every culture to aid in the treatment of both mental and physical illnesses and injuries, as well as to assist individuals in the dying process (Gaynor, 1999; Halstead & Roscoe, 2002). Though originally performed using only the yidaki, or didgeridoo, sound healing now involves a wide array of instruments (e.g., tuning forks, crystal bowls, drums, ultrasonic devices) as well as human and animal vocalizations.

A cranial nerve connects the eardrum to every organ in the human body, minus the spleen, so externally generated sounds can have profound and direct effects on internal systems (Gerber, 1998). By subjecting patients to various frequencies, healers harmonize cells, organs, and biological systems which may have been disrupted, blocked, or out of sync with the remainder of the body and its environment.

In the contemporary medical field, technologies have been developed for using sound outside the range of normal human hearing. Ultrasound is a popular tool for the imaging, diagnosing, and treatment of many conditions (Encyclopaedia Britannica). First developed in the 1930s and 40s, ultrasound devices offer both diagnostic and therapeutic properties by emitting an oscillating sound pressure wave at frequencies above the hearing range of humans. While their most popular use is as a non-radiation imaging device, ultrasound machines are also effective in the management of pain associated with scar tissue, arthritis, and many other conditions. Medical devices based on infrasound, sound below the hearing range of humans, have started being developed more recently.

Theory

The fundamental principle underlying the theory of sound healing is that all matter vibrates at a specific frequency through which it can both influence and be influenced by all other matter (Gaynor, 1999; Roosth, 2009). Thus, everything on the planet and beyond can be considered interconnected through resonance.

Under this principle, there are two main theories detailing how sound can facilitate healing. The first posits that when a structure—such as a human organ—vibrates at a frequency disharmonious with its surrounding environment, it cannot absorb energy as efficiently and becomes vulnerable to disease. Vibrational energy practitioners can then target specific areas of the body to restore them to their natural states, in harmony with other biological systems (Crowe & Scovel, 1996).

Alternately, some think sound vibrations act to clear channels of transport within the cell, facilitating the movement of energy across the cell membrane and making it easier for cells to receive nourishment (Keyhani et al., 2001; Yount et al., 2004).

Procedure

In a typical one-on-one sound healing procedure, practitioners select several instruments and/or devices to use in a 30- or 60-minute therapy session. The patient is often asked to lie on a table during the procedure in order to achieve a greater state of relaxation. Healers then apply sound over the chakras and other trigger points on the body (Crowe & Scovel, 1996; Gerber, 1998).

In some practices, the table itself contains strings to generate sound, the vibrations of which can be felt throughout the body. This structure, called a monochord bed, consists of a wooden frame with upwards of 50 strings below it (Crowe & Scovel, 1996). Patients lie on top of the frame while a sound healing practitioner plays the strings on the bed's underside, allowing the individual to experience both the sound and its resonance.

Sound healing can also be performed in group settings, or individually as a self-therapy practice. Some individuals choose to practice tai chi or yoga during the session (Condon, 2004).

In conventional medical settings, ultra and infrasound are commonly used to diagnose and treat various ailments. The procedure varies depending on the nature and location of the condition.

Review

Sound has been used all over the world as a powerful healing therapy, but only in recent years have the effects of traditional instruments, such as the didgeridoo and crystal bowls, been studied scientifically.

A 2010 study investigated the benefits of didgeridoo playing and singing in aboriginal Australians with asthma (Eley & Gorman). Participants (N = 25) reported that the six-month intervention, which consisted of weekly didgeridoo lessons for males and singing lessons for females, improved their quality of life and helped them manage their asthma. However, the small number of participants in this study indicates a need for further research.

Allen & Shealy (2005) measured the body's electric responses to toning and playing of quartz crystal bowls by recording electrodermal readings of 40 acupuncture meridians on the hands and feet. The participants' (N = 40) left hands and right feet showed increases and decreases, respectively, in energetic readings during the playing of the bowls.

Many choose to listen to music for relaxation. Indeed, music can decrease heart rate, blood pressure, and anxiety—even in high stress situations. Chiasson et al. (2013) examined the effect of live, spontaneous harp music on pre- and post-operative patients in an academic hospital's intensive care unit (ICU). After indicating consent, each of the 100 participants was randomly assigned to either the control group or the music intervention group. Participants in the intervention group received a private 10-minute harp concert in their hospital rooms, while patients in the control group were instructed to simply lie quietly and relax during the 10-minute period. Patients who experienced the music intervention reported a 27% average decrease in pain, while patients in the control group did not report a difference in level of pain. The music did not, however, affect respiration rate, oxygen saturation, blood pressure, or heart rate. While the significant decrease in pain is encouraging, the study is flawed in that the harpist did not play

the same music for each of the 50 patients in the intervention group. Instead, she intuitively selected the style and tempo of music she thought would be appropriate for each patient. Future research should control for this potential confounding variable.

A 2006 study found that sound resonance therapy (SRT) is a highly effective treatment for fibromyalgia, a condition which is generally very difficult to manage (Cogan et al., 2006). SRT is administered using a vibro-acoustic apparatus which "stimulates the auditory and the somatosensory system of an individual, triggering long-term memory" (Cogan et al., 2006)—the therapy reportedly allows emotions to surface so they may be processed cognitively (Rogers et al., 2007). This has encouraging implications for a vast number of medical conditions which may have underlying emotional or psychological causes.

Research shows that creating music also has many therapeutic benefits. In a 2003 prospective study, Bittman et al. examined the effects of recreational music-making on burnout (i.e., emotional exhaustion and reduced personal accomplishment) in 112 men and women employed at a continuing care retirement community. Half of the participants were randomly assigned to the music intervention, for which they met in groups with a trained facilitator weekly for six weeks. Each one-hour session involved various social activities and mindfulness practices structured around music-making using hand drums, bells, maracas, keyboards, and other instruments. Compared to participants who did not experience the music intervention, the employees exhibited decreased burnout and greater productivity levels.

Many biologists and other natural scientists have studied the potential applications of sound in clinical settings, with compelling results. Several studies have found infrasound to be an effective rehabilitative therapy. Through the controlled application of high intensity, low frequency sound, postoperative adhesion formation can be minimized—at least in rodents (Colasante et al., 1981). More recently, a study conducted by Long et al. (2013) showed that fracture healing can be accelerated and supported through use of sound therapy (Long et al., 2013). The researchers created fractures in the femoral bones of 46 rats before dividing them randomly into control and experimental groups. The subjects in the experimental group were subjected to local infrasound for an hour a day for 42 days. Compared to the rats in the control group, who were not exposed to infrasound, the experimental group "showed a more consecutive and smoother process of fracture healing" and had "significantly higher average bone mineral content and bone mineral density."

Some research on sound healing aims to apply traditional methods to the conventional medical field. In the literature, one group of studies focused on the effect of infrasound in sensitizing cells to medication, allowing them to overcome drug resistance and better absorb chemicals (Keyhani et al., 2001; Sundaram et al., 2003; Yu et al., 2006; Rachlin et al., 2012). Rachlin et al. used an infrasound generator "designed to replicate the infrasonic emissions measured during external Qigong treatments" and exposed cancer cells to this frequency during drug delivery. When used in conjunction with chemotherapy, infrasound was found to be an effective inhibitor of glioma tumor cell proliferation (Yount et al., 2004). Further research is necessary to examine the effects of an infrasound-chemotherapy treatment on cancer cells in relation to normal tissue. Additionally, it is worth investigating whether certain frequencies could target cancer cells

specifically, while not increasing the permeability of cell membranes in healthy tissue—thus ensuring that normal cells absorb a lower dose of treatment than abnormal cells.

Another thread in the field of sound therapy involves the natural vibrations of cells themselves. Sonocytology, a term coined by physicist and nanotechnologist Jim Gimzewski, refers to the study of the vibrational movements of cell walls, which can be subjected to an amplification process and subsequently heard by the human ear (Roosth, 2009). Gimzewski found that the pitch of the tone produced by a cell changes in response to its environment; introducing sodium or alcohol, for example, causes the pitch of a cell's vibrations to decrease and increase, respectively (Pelling, et al., 2004). Because compromised cells produce a different sound than healthy ones, sonocytology has exciting implications for the early detection of diseases such as cancer and malaria.

The aforementioned studies show that cells not only emit sounds of their own, but react to external sounds as well, making it capable for externally produced sounds to impact internal biological systems. Further research is necessary in both traditional and conventional avenues of sound healing to continue exploring its applications and underlying mechanisms.

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