Frequencies of the Buddhist Meditative Chant – Om Mani Padme Hum

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Abstract: Om Mani Padme Hum is a six syllable mantra in Tibetan Buddhism associated with the bodhisattva – Avalokiteshvara (Studholme 2002). Wherever there is a Tibetan Buddhist settlement this mantra is found carved and painted on rocks or on hill sides. It is even found on the Mani walls; it is printed on paper and placed in the prayer wheels which are found in different shapes and sizes that line the outside walls of the Buddhist monasteries and temples. The Tibetan Buddhist people are also seen with hand-held prayer wheels which are accompanied with the prayer beads while reciting this mantra (Rizvi 1998). The whole of the Tibetan Buddhist world is known to vibrate with the vibrations generated while reciting the Avalokitesvara mantra which is an important aspect while understanding resonance (Santina 1997). This mantra is said to have originated from the Karandavyuha Sutra which contains the manifestations and works of Avalokitesvara. Since this sutra has close affinities to non-Buddhist literature, the six syllable mantra is said to have been conceptualized or evolved from „Siva‟s” or „Shiva‟s” five syllable mantra “Om NamahShivaya” (Studholme 2002).

Om Mani Padme Hum is a chant with beautiful expressions for an ultimate experience. The chanting of syllable – Om, makes everything disappears from your being – no thought, no dream, no projections, no perceptions, no expectations; like the calmness of the sea, where not even a single ripple in seen. It is therefore an inner form of music that is heard by none, but is full of harmony, joy and blissfulness. Once you have heard each syllable, you have entered into the very secret of its existence (Rinpoche 2000). The gap within the syllables is where the actual music is present; these are the gaps of silence, where the true inner music is experienced. The alternating gaps and sounds are what make the experiencer experience the inner self. The six syllable mantra generates vibrations that somehow interacts at a cellular level; where every fibre of the body feels connected as they vibrate in synchrony; resonating at the same wavelengths. The syllables when repeatedly chanted can make one hear it more than music, as the mind aligns to its vibrations and frequencies.

The mantra has a whole philosophy within it. If started from the “hum”, the last word and the first world will arise on its own accord and when the inner self is filled with the sound of silence, the experience is beautiful. This experience is said to resemble a lotus with a diamond in the early morning sun, with the diamond radiating in the sunlight and the lotus as a soft and delicate form in its presence. The literal translation of the mantra is “Behold the jewel in the lotus”. This mantra is not just a chant to be chanted without feeling it within, but needs to sink deep in your being, in order to grow higher and beautiful to make it demonstrate blissfulness. The mantra is like an inner pilgrimage, which explains how you need to begin; just like the blooming of a flower and the experience of one’s inner treasures that are expressed through the blossoming of the flower (Lopez 1998).

According to some Tibetan Buddhist scholars like DilgoKhyentse Rinpoche, the syllable OM helps achieve practice of generosity, MArelates to pure ethics; Ni helps achieve perfection in the practice of tolerance and patience; PADis the fourth syllable which helps to achieve perfection of perseverance; ME helps in the practice of concentration; HUMhelps in the practice of wisdom (Rinpoche and Rinpoche 1992). Karma ThubtenTrinleyhas a deeper explanation for these syllables; those which prevent rebirth into the six realms of cyclical existence. The mantra literally translates as „OM the jewel in the lotus HUM‟ wherein OM prevents rebirth in the god realm, MA prevents rebirth in the Aksa (Titan) Realm, NI prevents rebirth in the Human realm, PA prevents rebirth in the Animal realm, ME prevents rebirth in the Hungry ghost realm, and HUM prevents rebirth in the Hell realm (Wikipedia).
His Holiness, the 14th Dalai Lama of Tibet says, the six syllable chant Om Mani Padme Hum is great but you need to think of each syllable when you chant it. The OM is an indivisible union of method and wisdom that can transform your impure body, speech, and mind into the pure exalted body, speech, and mind of a Buddha. MANI, the jewel, symbolizes factors of method, compassion and love, the altruistic intention to become enlightened. PADME means lotus and symbolizes wisdom. Growing out of mud, but not being stained by mud, lotus indicates the quality of wisdom, which keeps you out of contradiction. The last syllable, Hum, means inseparability; symbolizing purity and can be achieved by the unity of method and wisdom (Lopez 1998).

Science of Chanting a Mantra

Sound is an excellent method for causing a deep stimulation at a cellular level as sound can travel five times faster in water than air. Chanting one’s personal resonant frequency is the perfect way of awakening the consciousness within. Music articulates our life, evoking emotions from joyous to sadness and regulating moods (Pereira 2015c). Experiments have provided a confirmation that resonant based experiences are not illusionary or imaginary, but occur through a form of interconnectedness created by resonating frequencies inside and outside the living system (Cambray 2009). Resonance is a phenomenon that occurs when a given system is driven by another vibrating system or external force to oscillate with greater amplitude at a specific preferential frequency (Wikipedia).

Resonance can occur when an object is vibrated at its natural frequency or naturally occurring frequencies, which is possible by music or chanting. The technique of repeated chanting during healing sessions is a best example of resonance, where the music played creates a resonance interference pattern resulting in a healing effect, attributed to the supernatural. Similarly, when people pray together or recite a prayer or hymn, they initiate a non-local resonance, a process which may result in a positive effect due to focused attention. Brain regions associated with attention and sensory processing were found to be thicker in persons who would meditate and chant daily in comparison to persons who would not, and the thickness of these areas increased with increasing years of meditation practice (Lazar et al 2005). Music can be stimulating but depends on structural features such as tempo, pitch, frequency patterns, etc. which can be broadly categorized as pleasant or unpleasant by the listener (Brandt et al 2012).

Continuous chanting can activate the oscillators and bring about a creation of a standing wave within the body, which apparently enhances the natural vibration frequency of the body due to the presence of a same set of vibrating frequencies of a chant. Yeast cells have demonstrated a 12% increase in growth frequencies inside rate and 14% reduction in biomass production with a significant difference in the metabolite profiles on exposure to different sound frequencies, confirming the enhancing effect of these vibrations at a cellular level (Aggio et al 2012). Cultured human breast cancer cell line MCF7 showed an alteration in cellular morpho-functional parameters such as cell size and cell granularity when exposed to music generated resonant vibrations conforming to the direct interference of these vibrations with hormonal binding processes that could modulate physiological and pathophysiological processes within these cells (Lestardet al 2013).

Music is made up of several frequencies and therefore these frequencies are the key to understanding the effect of a chant on the overall system. When these vibrations resonate at a particular frequency or frequencies it results in an interference pattern which can be constructive or destructive. Several frequencies are known to create constructive patterns within the brain which can enhance brain functioning and neuroplasticity. EEG recordings of skilled Buddhist monks with years of training and chanting have shown a significant rise in gamma wave activity in the 80 – 120 Hz range while this effect was lower in new meditators. For Buddhist monks, the purpose of meditation and chanting is to free oneself from suffering and gain spiritual liberation which is the same reason for meditative practice in other religions (Davidson and Lutz 2008).

Several studies have also been conducted in invertebrate organisms such as snails, which have shown that the Tibetan chant Om Mani Padme Hum has a direct effect on cognition (Pereira 2015a,b). In another study, a significant reduction in recovery time from a hypothermic exposure was also observed in snails which shows a direct effect of this chant at a cellular level since snails are invertebrates with non-auditory features (Pereira 2016a,b). Om Mani Padme Hum is a meditational chant that is known to generate positive energies within the body through mystical vibrations (Misra and Shastri, 2014). Frequencies associated with a chant may have a direct effect on the body at a cellular level leading to biochemical changes within the cells to bring about a positive effect, such as cognition and several others which are yet to be known. In a study conducted in Vedic chanting, the chanting group showed a significant increase in scorings in memory tests and showed a considerable reduction in total error and total time taken for cancellation tests when compared to non-chanting practitioners (Ghaligi et al 2006).

2. Study

Frequencies recorded for the mantra – Om Mani Padme Hum

Materials and Methods

The Tibetan meditational chant “Om Mani Padme Hum” soundtrack by Tibetan Incantations (Nascente) with a bit rate of 128 kbps was used for this study. On a broad scale, the frequency analyses of this soundtrack was done using the WavePad NCH software Version 6.18, which uses a FFT analytical tool to determine the actual frequency recordings of the soundtrack. The highest frequency recorded for the Tibetan meditational hymn was 21371 Hz (21096 Hz + 274.8 Hz) with a range varying from 236 Hz – 21371 Hz and a decibel gain range of – 23 db to -130 db. The soundtrack was further snipped using the Audacity version 2.1.2 software, where the soundtrack was further split into the six syllables – Om, Ma, Ni, Pad, Me, Hum using an online audio splitter software – Song Cutter by Mediafox Marketing and were saved as .mp3 files with a bit rate of 128 kbps.
128 kbps. Each of the .mp3 files were replicated and joined using the Helium Audio Joiner by Imploded Software, to make a lengthier soundtrack, i.e., approximately 5 mins each for every syllable for better analysis of each syllable.

The experiment was carried out in a semi-sound proof environment, where the generated .mp3 file for each syllable was played on an I-ball Tarang 2.1 music system with one sub-woofer (20 watts RMS max) and two satellite speakers (10 watts RMS max each) with a total output of 40 watts RMS max and frequency ranges for – woofer as 20Hz - 200Hz and satellites as 100Hz-20kHz at a decibel output range of 75 – 80 db. The frequencies for each syllable were analysed on three android based applications – Spectrum Analyzer by Raspberrywood Version 5.0.3, Spectrum Analyzer by Keuwlsoft Version 1.3 and Sound Analyzer by Tinia Soft Version 1.02 using a Lenovo Ideatab A1000-G tablet with a 1.2GHz dual-core Cortex A-9 processor (MediaTek 8317), a 4GB RAM with an Android 4.1 Jelly Bean operating software. The frequencies for each syllable were analysed by the android applications that use a FFT analytical tool of Hz against the decibel output value. By comparing the frequencies recorded for each syllable by all three applications, a final set of frequencies for each syllable was confirmed. Besides, the high decibel frequencies considered for the study, there were several other background frequencies which were observed, but since they were at very low decibel range, they were not considered as part of the final set of frequencies. The comparative results for each of the android applications is provided in Figure 1 and the final set of frequencies confirmed for each syllable is provided in Figure 2.

![Figure 1: Comparative results for each of the android applications](image-url)
expansion of consciousness in balanced multi-dimensional fields of awareness. This frequency is known to influence energy fields and therefore leaves the body rejuvenated and energized (Hulse 2009; Paddon 2012). The frequencies associated with the syllable OM for the Om Mani Padme Hum mantra can show a direct effect on the body and therefore is the most important and powerful mantra for Buddhist meditation. Buddhist teachings claim that by chanting the OM syllable, an impure body, speech and mind can be transformed into pure ones of a Buddha, who was once impure and later by removing negative attributes, achieved enlightenment on his path (Lopez 1998). This transformation may have been achieved as a result of the frequencies associated with this syllable which by interact with gamma waves.

The syllable MA is made up of five frequencies, of which two frequencies are unique to this syllable. The frequency 139.86 Hz is part of the gamma wave series which is known to show increased mental activity/cognitive enhancement (Zhuang et al. 2009). 170.66 Hz and 289.13 Hz, where two frequencies are unique to this syllable. The frequency 170.66 Hz is part of the gamma wave series which is known to support the cell to transform itself into a system of radiant light that descends upon the listener filling the personal mind with the influences of balance, health and tranquillity (Linsteadt 2013). 856.1 Hz is close to 852 Hz which is a typical rhythm of the gamma waves recorded in the brain (Linsteadt 2013). 519.7 Hz frequency is close to 528 Hz which is known to bring in a miracle transformation in healing practices (Paddon 2012). Lee Lorenzen discovered that "6 Sided Water Clusters" form due to the vibrations generated at 528 Hz (Lorenzen 1989) may be the reason of the healing effect on the body at a cellular level. 528 Hz is the frequency linked to the environment; life on earth, it is the frequency of love. Ancient Egyptians used Solfeggio scale for healing and altering consciousness in large sound chambers where they would play frequencies at 528 Hz throughout the chambers to generate specific effects on individuals (Hulse 2009). The frequency is also known to increase energy, clarity of mind, awareness, awakened or activated creativity, ecstatic states like deep inner peace, dance and celebration and activate one’s imagination, intention and intuition (Paddon 2012; Linsteadt 2013).

623.3 Hz frequency is close to 639 Hz, which is also part of the sacred Solfeggio scale. It enables in creation of concordant community and builds interpersonal relationships (Hulse 2009). Healers and meditators use this frequency on individuals while dealing with relationships problems – those in family, between partners, friends or social problems. This Solfeggio frequency can enhance communication, understanding, tolerance and love. Healers call this frequency as Relationship Harmonization where they claim that the frequency results in complete healing radiant light that descends upon the listener filling the personal mind with the influences of balance, health and tranquillity (Linsteadt 2013). 856.1 Hz is close to 852 Hz which is a frequency linked to the ability to see through the illusions of one’s life. This frequency has been used to open up a person for communication with the awareness of the spiritual order. For cellular processes, this frequency is known to support the cell to transform itself into a system of higher level (Linsteadt 2013; Bonds-Garrett 2013).

The syllables NI and PAD show similar frequencies, where some of the frequencies also match the syllable MA. The NI

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**3. Results and Discussion**

**Measured frequencies of the chant and its comparison to known therapeutic and healing effects of specific frequencies**

The syllable OM is always considered as a sacred syllable and has been found in many religions. Gurjar and group ratified that chanting the OM mantra results in stabilization of the brain and removal of worldly thoughts with an increase in energy. The group also confirmed this chant as a brain stabilizer and suggested that by practicing it one can enter deeper and deeper into the own natural state (Gurjar et al. 2009). In the mantra, the OM is made up of three frequencies - 110.76 Hz, 170.66 Hz and 289.13 Hz, where the first frequency – 110.76 Hz is part of the frequencies of the gamma waves recorded in the brain and therefore support gamma brainwave entrainment. The gamma brainwaves are the fastest documented brainwave frequency range, which oscillate within the range of about 25 to 100 Hz. Gamma waves have showed increased mental activity/cognitive enhancement, freedom from distractibility, high levels of info-processing, learning and focus, high short-term memory ability and migraine prevention (Zhuang et al. 2009). In another study where monks were told to generate an objective feeling of compassion during meditation, their brain activity began to fire in a rhythmic, coherent manner, suggesting neuronal structures were firing in harmony. This was observed at a frequency of 25–40 Hz, which is a typical rhythm of the gamma waves recorded in the brain (Lutz et al. 2004). Brain wave entrainment, sometimes referred to as binaural beat is becoming a popular way of inducing desired mental states and accessing our untapped potential. Binaural beats are aural tones played at different frequencies in each ear (Puzi et al. 2013).

Frequency 170.66 Hz is very close to 174 Hz which is part of the ancient Solfeggio scale and also claimed to be a natural anesthetic as it tends to reduce pain physically and energetically (Hulse 2009). 174 Hz frequency is known to give organs a sense of security and also creates a foundation for acceleration and evolution of consciousness (Paddon 2012). 289.13 Hz frequency is close to 285 Hz, which is also a part of the ancient Solfeggio scale known to assists in the
syllable possesses the 377.23 Hz frequency which is close to 396 Hz, which is also part of the ancient Solfeggio scale, known to liberate energy and has beneficial effects on feelings of guilt. It cleanses the feeling of guilt, which often represents one of the basic obstacles to realization, enabling achievement of goals in the most direct way (Bonds-Garrett 2013). 396 Hz frequency searches out hidden blockages, subconscious negative beliefs, and ideas that have led to your present situations (Paddon 2012; Hulse 2009). The syllable ME and HUM also show a similar pattern of subconscious negative beliefs, and ideas that have led to progression of quantum generated consciousness within cells of all living beings. A living system may have many resonant frequencies due to their degrees of freedom, where each can vibrate as a harmonic oscillator supporting the progression of vibrations as waves that moves as a ripple within the whole system (Pereira 2015c).

4. Conclusion

Om Mani Padme Hun is an amazing chant and there seems to be magic in each and every syllable which makes it more phenomenal. Chanting this mantra can actuate the frequencies associated with each syllable, to resonate at frequencies known to bring a change at a physical and biological level. These frequencies have been used for several healing practices which have never been understood from a scientific perspective and therefore needs to be studied further to better evaluate the significance of these frequencies in daily life. His Holiness The14th Dalai Lama states that just by chanting the mantra would not help, but chanting each syllable with precision of note and frequency would show a meaningful effect. This mantra is like an inner pilgrimage, which explains how you need to begin; just like the blooming of a flower; the experience of one’s inner treasures that are expressed through the blossoming of the flower which is a result of the specific frequencies associated with each syllable that can make a significant change from within.

References


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