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Music's Therapy: Alternative Medication for the Mind and Soul

Music is in an experimental investigation for medication alternatives; formally known as, Music Therapy. While music has been famously enjoyed by billions of people for centuries, it is no secret that certain songs make many hard situations easier to deal with; however, music has more power than that; as an example, from the emotional level of a break up to the symptoms of dementia and PTSD, music literally heals sorrows, more specifically, it heals the mind. Listening to a song produces chemicals in the brain that allows real medical treatment, like restoring memory or offering pain relief. Music Therapy carries unknown weight of importance in the world of medication, but there is a common observation, music also has the abilities to change the way we think, whether we are mentally healthy or not. Through my conducted research of credible studies and successful treatment stories, Music Therapy is an underrated treatment for illnesses and conditions and possible alternative for some prescriptions.

Music therapy began in the 18th and 19th centuries, with much of the practice focused on relieving mental distress. By the mid-nineteenth century, interest in music therapy grew majorly everywhere around the world. By the twentieth century, large-scale music therapy programs were officially offered to people with mental illnesses (Gooding, 2018). Music Therapy was used quite commonly during the World Wars because of its gentle treatment to PTSD, it was relaxing, not painful.

Music therapy is a therapy type that uses music to stimulate the brain and reactivate different parts of the brain that may have been obstructed because of diseases or distress. In our

brain, we process many responses, pain, memory, emotions, actions, thoughts, and so on; flip the coin, our brain can also easily experience loss of memory, dysfunctions in emotions or actions, missing in neuron firings that make solid thoughts and ideas. Many different possible problems can arise based on age, heritage and genes, or tragedy. Music and its repetitive, constant factor, like a steady tempo sometimes much like a heartbeat, has the stimulation ability that can rewire neurons and ignite memory, coping skills, motor skills, pain response skills, relieve heart rate, and much more. From the findings, tests and lifelong studies from formal professionals and academic approved teachers of the field, music therapy may be a revolutionary form of medication that literally shows real brain igniting results (Yinger, 2017).

Thanks to modern technology, there have been studies conducted on the brain, allowing us to look internally at the brain waves that create our thoughts and pain responses. Through these studies we can see how the brain lights up when we use different parts of it for our everyday tasks, we can also get a better idea of where to treat a damaged part of the brain that no longer lights up on the tests. For example, if a Hip-Hop loving teen, suffering from a brain tumor lodged in the memory section of the brain, listened to Tchaikovsky, the difference in music genres and enjoyability from recognition, or your favorite song, would be the treatment for the memory loss created by the tumor, and on the internal studies, the damaged part of the brain would start lighting up again.

Upon my research, I came across a question of my own, "Shouldn't our minds heal themselves, when we listen to any random song, like our favorite song for example; if it works with a heart break, what about for instant medical purposes too?" Further investigation results indicate that certain emotional responses to music can indeed be measured; for example, highly

trained musicians and those having little formal training, have similar responses to a variety of modern music selections. The brain determines this response by the level of pleasure felt listening to the song, this is formally known as an aesthetic response to music. What represents the “it” in aesthetic music? The “it” is the part of music that holds a specific special listening response because of its emotional connection to a person's' situation in the present moment. Non-musicians and formally trained musicians could agree that the modern, Western-art music had a similar level of aesthetic pleasure, no matter their experience or education. Although, when both parties were investigated about their aesthetic interest about jazz, the parties agreed to different levels of aesthetic pleasure based on experience. To understand what elements in music contribute to listeners' aesthetic response, a study was conducted, concerning what musicians mostly focus on while listening to various musical excerpts, performed live. Following melody, dynamics, timbre, rhythm and then all the elements at once, two groups were divided into ‘aesthetic response’ and the ‘felt emotional response,’ teams. After the study showed tension, a feeling relating closest to an aesthetic response, it represented a unique dimension, making what’s called a free response condition, similar to aesthetic and felt emotional response. Therefore, there are really only two dimensions to music while listening, which are emotional responses and aesthetic responses, like showing tension (Madsen, 1997).

"One song can be heard by 10 different people who will have 10 different responses to the same music sample. This variability makes it impossible to use music prescriptively in a medical setting as a medical researcher or staff member might be inclined to do." Well-known songs are too predictable and not very enjoyable, on the other hand, a song that is too simple or too complex will also kill the enjoyment; however, an unfamiliar song may be enjoyable because

it's not predictable at all. The assumption of music is that it is both predictable and unpredictable, enjoyable and unenjoyable, it depends how much an individual enjoys a particular song.

LeBlanc, an assumed musicologist and music therapist, created a musical model that highlights the emotional, environmental, and exposure factors that determine whether a person accepts or rejects a song. Berlin, another assumed musicologist and music therapist, also made a useful music model, between both models, we can imagine what goes on in a musical therapist's mind when they're figuring out how to use music as a tool, to meet specific therapeutic functions based on the patient's specific needs (DeLoach, 2017).

Taking into consideration when we listen to music for fun, we can understand how music helps us without a music therapist. Music is the only thing that can process things from both sides of the brain; engaging logic and emotions at the same time. Molly Warren shares in her article, "The Impact of Music Therapy on Mental Health" from The National Alliance on Mental Illness, "Music has rhythmic and repetitive aspects, which engages the neocortex of our brain, which calms us and reduces impulsivity." In simpler words, this is why you are more likely to listen to a hundred sad songs than repeatedly call your ex after a breakup (Warren, 2019).

Music carries the power to effect the completely healthy brain as well in more ways than redeveloping or tricking it. Popular New York Times columnist, Frank Bruni, shares from his recent restaurant review, that a restaurant he once enjoyed as a young adult, is now a, "merciless ricocheting of sound", now that he is 50 years old. Looking at music and its effects on the brain from a business standpoint, a restaurant will play loud, rock or pop music, indicating to the brain upon hearing, that the restaurant will be more readily enjoyed by a younger crowd, and the older crowd should carry on to another restaurant. Places of business that want to attract an older

crowd, will likely play classical music or play a very high pitched sound that a young, sensitive ear will hear and likely run away from (Bruni, 2019).

Looking at music and how it affects the brain from an alternative perspective, music can also fail when emotional life flips into medical turmoil. This happened to a professor of music who suffered a massive right brain stroke. He retained his intellectual abilities and soon returned to teaching, conducting, writing books and studying new languages, as the left side of the brain hemisphere was still intact. However musically, he shares that he felt broken. The right hemisphere is particularly important in emotional life, with such extensive damage on that side of the brain, the professor lost pleasure in music and complained that his conducting lacked his usual spunk. To make matters worse the damage done to the right side of the brain also affected the periteneal lobe which is essential for spatial reasoning. This means the professor could no longer use perspective when drawing and he was constantly lost in his hometown (Jourdian, 2002).

The mind on Music Therapy, is a beautiful practice for the brain, whether a patient is terminally ill, autistic, disabled or just stressed. Music Therapy, unfortunately won't cure cancer, however music helps people take their mind off physical pain, which can help them cope with many different ailments. No matter the health quality of an individual's brain, it has been medically researched and proven, that music is healthy for the mind, simply because it stimulates our brain waves, which are the firings in our brain that create thoughts, actions or pain. The brain is no different than an organ or muscle, when a person listens to music the brain becomes sharper, stronger, and more useful all around. Which is a prime example of why some students listen to music while completing assignments. Music has a direct impact on our brain waves and

we can see examples of this when listening to faster rhythms, we become more alert and when listening to slower rhythms, we meditate or start to relax. The benefits we gain by calming down and focusing can help people regain a positive mental state, reduce stress, and lowers blood pressure (Williams, 2019).

When researching the effects Music Therapy has on the brain regarding redevelopment in mental conditions and disorders, the published tests, studies, findings and success stories, were endless. My favorite came from a brilliant speaker at a Ted Talk seminar. Music Therapist, Erin Seibert says in her “Educate” speech, “People listening to particular emotional response inducing songs, meet them where they are mentally, using it as a coping mechanism, and in turn using the coping mechanism as an alternative to medications, like anti-depressants. Music stimulates many parts of your brain, specifically your memory; patients with Alzheimer's disease for example, have a difficulty speaking their needs because the memory part of the brain doesn't work. By singing a memory recollecting song, the brain was able to ignite a different part of the brain to recall on the memory and find the thought of what they had wanted and eventually turn the song into singing their needs.”

Since its birth in the 18th century, Music Therapy has successfully boomed in the minds of many and become quite popular in the medical world; however, Music Therapy treatment is neglected for anxiety and depression specifically. Unfortunately, medications are still the first recommendation after general therapy, Music Therapy is rarely offered, especially to adults. When dealing with different levels of anxiety and depression, medication may be the necessary option for safety reasons, but for those who do not require the high level of drugs, forcing medication will create more mental and physical problems. The Anxiety and Depression

Association of America shares, anxiety affects about 18% of the adult population. Although anxiety and depression are among the most common mental conditions, PTSD is also very common among anyone who has suffered severe trauma. Erin continues with another fantastic example, Music therapy has been around for a long time, back to both of the World Wars, when soldiers had to be hospitalized after battle, for PTSD. Experiments were conducted, hospitals hired musicians to play music for the soldiers and after watching their reaction to music and how it affected their PTSD, musicians realized they needed to be equipped with the specific knowledge, how to use music to affect mental change. Change started with making goals and enhancing them with music, for example, taking lyrics of a song to invoke positive coping mechanisms in psychiatric patients (Seibert, 2016).

To continue on the idea of brain redevelopment, Music Therapy also works on animal brains; Music Therapy can also be simplified as sounds, and when sounds are combined with different elements, like repetition for example, any brain can be hypnotized into a mental treatment. “Memories also improved after a daily dose of fast clicking noises.” Reported by researchers on March 14th, 2019, an experiment was conducted on mice with Alzheimer’s plaque found in their brain. They tested the mental effects of clicking noises and flashing lights on the diseased mice brains and the external sounds and visuals during the process. The hippocampus is a very important memory structure in the brain and gets affected by Alzheimer’s; sounds at a humming rate of 40 clicks per second or 40 hertz, cause the same clearing gamma waves and A-beta in the hippocampus. “A daily hour of fast clicks, played by speakers above the mice’s cages for seven days, also improved the memories of mice genetically engineered to have signs of Alzheimer’s. When comparing mice that heard randomly spaced clicks, and mice that listened

to 40-hertz clicks, the 40-hertz mice were faster in finding a hidden platform in a water maze, and better at recognizing an object they had seen before” (Sanders, 2019).

Music has very little limitations, benefiting humans and animals in many different ways, music has medical power, but also power over how the mind thinks and processes information. Looking more into youthful brain development, The National Association for Music Education shares an article covering some important benefits of music in our schools, they also share, “When Children are exposed to learning and performing music, they gain increased coordination, emotional development, imagination, intellectual curiosity, better self-confidence, fine-tuned auditory skills, and much more.” Music Therapist Trish, works in the pediatrics department of hospitals, offering children an opportunity to tell their story through music. When working with babies, she uses developmental stimulation, using music instruments as their motivation to reach, or engage in listening to a noise they created. Sometimes the stimulation helps with regulation of heart rate, using different music tempos to either raise or lower the heart rate. Children in remission for long periods of time can sing or play the guitar to remember happiness for the first time (The National Association for Music Education, 2014) (Trish, 2016).

For children, music can not only be used as a medical treatment or alternative to some medications, it also allows children to still act like children, while being put through scary, painful treatments. The following hospitals in the United States, utilize the benefits Music Therapy has to offer: UCLA, Mayo Clinic, St. Louis Children’s Hospital, Children’s Hospital Colorado, Phoenix Children’s Hospital, and Texas Children’s Hospital. Success stories regarding Music Therapy treatments, are expanding more every year; one YouTube video showing a success story at MacPhail Center for Music, stood out to me. In the three minute video, you

literally watch Kenney, a young boy struggling with autism, direct eye contact, transitioning activities, lack of physical empathy, and a small range of motor skills, accomplish so much after starting Music Therapy treatments. Melissa Wenzell, Kenney's Music Therapist shares, "Passion is music and everything related to it; dancing, singing, drums, violin, rhythm making, etc." After working with Kenney for some time, he was able to perform in a violin concert with his peers. Kenney's mom shares, "He is keeping eye contact and interacting with an ensemble of violin players. Kenney is finally acting like a normal boy" (Wenzell, 2009).

Human beings are born with more neurons than needed, and by eight-years-old, our brain pushes out the extras. This is why with age, it's harder to learn languages. Studies conducted by the University of Central Florida show that if you learn music of any kind as a child, your brain will become designed for music. Researcher, Sugaya, conducted a neurological study of songbirds. His research shows that canaries stop singing each autumn season, when the brain cells responsible for song generation, die. The neurons show to have grown back during the winter season and the birds regain their ability to sing by spring (University of Central Florida, N/A).

One of the first reactions that happen in our brain when we listen to music, is a triggering of pleasure centers, that release dopamine, a chemical reaction in the brain that produces the happy feeling. The brain even anticipates the most pleasurable moments in a song before it happens and primes itself with an early release of dopamine. "According to Ashford University, research shows listening to music is associated with immunity-boosting antibodies and cells that protect against bacteria and other foreign invaders. They also share, that music has been proven

to be an effective treatment for a variety of different conditions, like, premature birth and Parkinson's disease.” (Ashford University, 2017)

Ashford University has also compiled a genre related map, explaining what different genres of music do as a mental reaction when listening. “Classical music enhances dopamine secretion and synaptic function, learning and memory. Rap stimulates emotion, language, motivation, motor function and processing information. Heavy metal elicits a sense of identity and a knack for community development. Pop and Rock improves endurance physical performance, but can also distract from work.” Lastly, Jazz simply soothes the body. Successful Music Therapy is medically identified based on the individual, their needs and their music background, however, based on Ashford's genre map, specific genres affect every brain in different ways, simply because of the chemical reactions in our brain (Ashford University, 2017).

Researchers at Beth Israel Medical Center's, located in Louis Armstrong Center for Music and Medicine, compiled a Music Therapy study, which included 272 premature babies, all 32 weeks of age. They examined the different effects of three types of music; a lullaby selected and sung by the baby's parents; an "ocean disc," which is a rounded instrument, invented by the Remo drum company, the instrument mimics the sounds of the womb; and a gato box, a drum-like instrument created to simulate two-tone heartbeat rhythms. The two instruments were played by the certified music therapists, who matched the instrument playing to the babies' breathing and heart rhythms. The researchers found that the gato box, the Remo ocean disc and singing, all slowed the baby's heart rate, although singing was the most conclusively effective. Singing also increased the amount of time babies stayed quiet but alert, and their suckling behavior showed most improvement with the gato box, while the ocean disc enhanced sleep. “The

music therapy also lowered the parents' stress”, Joanne Loewy, the study's lead author, director of the Armstrong center and co-editor of the journal *Music and Medicine*.

"There's just something about music — particularly live music — that excites and activates the body," says Loewy (Novotney, 2013).

I located a recent study, following the link between music and stress; researchers at the University of Alberta, found that music can also successfully help calm pediatric emergency room patients. The trial studied 42 children, from ages three to eleven, tracking their stress response when listening to music, during the insertion of an IV; the researchers found that patients who listened to relaxing music while getting an IV inserted, reported significantly less pain, and some demonstrated significantly less distress, compared with patients who did not listen to music. To add, more than two-thirds of the volunteer doctors and nurses, reported that the IVs were easier to administer to the group who listened to the music, compared to the 38 percent of providers, treating the group that did not listen to music. "There is growing scientific evidence showing that the brain responds to music in very specific ways," says Lisa Hartling, PhD, professor of pediatrics at the University of Alberta and lead author of the study. "Playing music for kids during painful medical procedures is a simple intervention that can make a big difference" (Novotney, 2013) (Blue Cross Blueshield of Montana, 2019).

Music therapy is also known for its multicultural guidelines. Treatment is dictated by, “age and ability; gender and sexual orientation; religion and spirituality; ethnicity, race, and language; and socioeconomic status. Music therapists will also make a medical decision if live instruments are beneficial or not. After determining music necessary for specific patients, music therapist can begin treatments and follow-up tests (Olsen, 2017).

From the beautiful creative souls who weave the melodies, the emotions and the sounds that we love to blast in our car, scream in the shower, and attempt to mirror the story of our lives, music and its vast expansion of power over our minds, is a never ending exploration for us all. In an over medicated and stressed world, look to the cars to next to you and the drivers singing within, the man dancing to his own tune on the street corner, do they look angry or stressed to you? A few quotes: “Music gives a soul to the universe, wings to the mind, flight to the imagination and life to everything.” Words from Plato, one of the great three Philosophers. “I think music in itself is healing. It’s an explosive expression of humanity. It’s something we are all touched by. No matter what culture we’re from, everyone loves music.” Quoted from Billy Joel. May you leave with one kernel of difference in perspective; music is more than pretty sounds and notes strung together in random patterns. Music is alive, music is what brings color back into our rough day and washes the pain from our temples. Music is natural medication for the way our brains function, and in that saves our mind and personalities from illnesses and mistreatments. For you and yours, take care and look into the amazing benefits music has to offer regarding whatever ails you (CMUSE, 2016).

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