

Jennifer Miller

IT 103

Section GS1

1 March 2012

Music Making Advances in the Medical Field

"By placing this statement on my webpage, I certify that I have read and understand the GMU Honor Code on <http://academicintegrity.gmu.edu/honorcode/> . I am fully aware of the following sections of the Honor Code: Extent of the Honor Code, Responsibility of the Student and Penalty. In addition, I have received permission from the copyright holder for any copyrighted material that is displayed on my site. This includes quoting extensive amounts of text, any material copied directly from a web page and graphics/pictures that are copyrighted. This project or subject material has not been used in another class by me or any other student. Finally, I certify that this site is not for commercial purposes, which is a violation of the George Mason Responsible Use of Computing (RUC) Policy posted on <http://universitypolicy.gmu.edu/1301gen.html> web site."

X

---

Jennifer Miller

## **Introduction**

Music is a part of everyone's lives, whether it is from walking around with an iPod in all the time or just catching bits and pieces of the newest songs on the radio. It is apparent that music is everywhere and now it is entering another part of society, medicine. For a long time, music was not looked upon as a way of healing, but that it quickly starting to change. It is popping up in practices of healing in everything from depression to Alzheimer's to serious brain injuries. Music is taking its place in aiding, healing, and curing in the medical field in many different ways and does not seem to be slowing down any time soon.

## **Music Therapy**

According to Farlow Music Therapy services (2010), music therapy is the prescribed use of music and musical interventions for the purpose of restoring, maintaining and improving emotional, physical, physiological and spiritual health and well-being. Music therapy is the more well known and one of the first ways that music started making its move towards toward the medical field. It is used to heal everything from mental illnesses to help people with patients with Alzheimer's disease. For example, Dale Marcell spends his time creating drum circles trying to help patients deal with many different problems. He started off by drumming for students with attention deficit disorder and when he saw the improvement he continued his work (McClelland, 2003). He has continued on with working with people with Alzheimer's disease, prisoners, battered women, and children with disabilities (McClelland). Another great story of the triumphs in music therapy is the story of one of Emily Keebler's patients. A young girl came to her dealing with the passing of her mother and worked with Keebler to be able to make it through this emotionally draining experience. She lets her patients guide the sessions, such as, an older Alzheimer's patient coming in and laying down the rule that there would be no sad songs.

Keebler said, "Hospice is all about what they want. It's not about trying to get them to go anywhere they don't want to go. It's all about being present with people (Frankel, 2012)." When it came to treating the girl who's mother passed away, Keebler let the girl go and just write and play what she wanted, which ended in her writing and recording a song about her mother. It helped her realize that she would be okay and that no matter what she will always have and love her mother (Frankel). It is very true that music is a great source, but in today's world, it is hard to think of music and not think of technology at the same time. Music technology grows everyday with new ways of listening, sharing, and recording.

### **Medical Technologies Involving Music**

In generations before, people would have thought that music had no place in the medical field. It was something for enjoyment and just a leisurely love of most people. It has been making its way into every part of medicine though from therapeutics to neurology.

Neurologist, Oliver Sacks, is one person that really sees how important music is in the lives of every person. "In many different circumstances, music may arise involuntarily within a person, as attested to by Sacks' initial presentation of cases of sudden intense affinity for music and development of musical skills, of so-called brain worms or tunes that automatically repeat within the mind, and of musical seizures and hallucinations. Despite the range of individual experience of music, from incomprehension of melody, rhythm, or harmony, to perfect pitch to synesthesia, it seems that anyone could have a sudden loss or gain in musicality." (Olson, 2007). The seeming universality of musical mental imaging, even in the deaf, has encouraged the therapeutic use of music to treat an increasing number of illnesses, including the results of severe brain damage, congenital conditions, and such degenerative neuropathies as Parkinsons and Alzheimer's (Olson). One of the

most impressive technologies incorporates one of the most looked down upon music genres, hip-hop. “Researchers at Purdue University developed a small pressure sensor that can be implanted to monitor pressure in places like the bladder or a blood vessel damaged by an aneurysm” (Boyle, 2012). The issue with this device though was trying to figure out how they would power such a small implant without a battery. “Ziaie and fellow researchers placed the device in a water-filled balloon and tested it with rap, blues, jazz and rock music.” (Boyle). It turned out that hip-hop worked the best (Boyle). “It contains a lot of low frequency sound, notably the bass,” Ziaie said (Boyle). How it would work is when the frequency falls outside the required range, the cantilever would stop vibrating, and the sensor would take a pressure reading and transmit data as radio signals (Boyle). Ziaie said this type of measurement would be taken for a couple minutes every hour or so to keep tabs on a person’s bladder or blood pressure (Boyle). Music’s big impact on medicine is going to continue to grow and maybe one day someone’s favorite song will be saving lives.

### **Music in Other Parts of Medicine**

Just like music can find a place in every part of someone’s day, it is finding a place in every part of medicine. Some other places in medicine that you can find music are, surprisingly, operating tables. Surgeons say music makes them more relaxed and focused, and recent research shows patients are also feeling the benefits of music in the operating room (Macar, 2006). “Some doctors choose loud rock 'n' roll for routine operations and Mozart for trickier ones; others prefer jazz, reggae, or opera. There is even a category known as "closing music"-raucous sounds to suture by.” (Macar). Many operating rooms come equipped with a sound system, and surgeons often plug their iPods with whatever music

gets them going into a sound system and patients may even be given headphones (Macar). Brian Jacob, a surgeon at Mount Sinai Hospital in New York, thinks music helps everyone in the operating room. "You're basically sending a message to the people around you that it's a cool place to be," he says. Jacob sometimes asks patients for requests, but they usually say that whatever is on is fine: "They want me happy" (Macar). Another way music is involved in medical advances is not exactly scientifically, but as a supporter. One of the most inspiring contributors to health research is Children Helping Children started by child prodigy, Jourdan Urbach (Lewis, 2009). At first, Jourdan performed at Beth Israel for patients in the playroom, or beside the beds of those too ill to leave their rooms (Lewis). In addition to his musical efforts, "he founded Children Helping Children (CHC), a non-profit organization, and describes its mission: "to raise money for national medical organizations, surgery scholarship funds for the disenfranchised, home health care for those with advanced forms of neurological disease, and cutting-edge research targeting neurological disease globally." (Lewis). "To date, CHC has raised more than \$1.4 million to benefit such groups as the National Multiple Sclerosis Society, the Children's Hearing Institute, Cold Spring Harbor Labs, Institute for Music and Neurological Function, Beth Israel's INN, and Mott Children's Hospital's Ronald McDonald House." (Lewis). It is clearly apparent from all the different places music is popping up that music has pervaded every part of the medical field.

## **Conclusion**

Music is no doubt a big part of every human beings life whether or not they accept it with open arms or tolerate it. No one would have ever guessed when people started recording and selling music that one-day it would possibly save someone's life. That is where technology is taking the world to today though. Whether it is saving someone from a physical or mental illness,

music is being used in so many different ways to better people's lives today. So, the next time someone turns on the radio in the car or an intolerable song comes on in the elevator, just remember that one day that music might be saving someone special's life. It will be an interesting and melodically enjoyable ride to see where else music can go in the world of medicine.

## References

- Boyle, Rebecca. "Hip-Hop Basslines Could Power Implantable Medical Devices", n.d. Retrieved from <http://www.popsci.com/technology/article/2012-01/bumping-rap-beats-could-power-implantable-medical-devices>. 26 Feb. 2012. (It is the true crossover of music into medicine. It is music powering a new medical implant.)
- Farlow, S. (2010). Farlow Music Therapy Services. Retrieved from <http://www.farlowmusictherapy.com/definition.htm>. (This website gives a very good definition of music therapy described by Susan Farlow, who is a music therapist.)
- Frankel, J. "Comfort & Joy." *Mountain Xpress*, February 1, 2012. Retrieved from <http://proquest.umi.com/pqdweb?RQT=302&cfc=1>. (Tells stories of Emily Keebler's patients being able to use music therapy to deal with physical and mental illnesses. Shows what big impact music can have on healing.)
- Lewis, K. "Jourdan Urbach: Saving Lives Through Music." *Listen* 62, no. 5 (January 2009): 8. Retrieved from <http://proquest.umi.com/pqdweb?RQT=302&cfc=1>. (This article discusses how a musically talented, young boy begins using music to help ill people in so many different ways.)
- Macur, Juliet, Vincent M Mallozzi, and Somini Sengupta. "Scalpel, Suture, iPod." *New York Times Upfront* 139, no. 2. Retrieved from <http://proquest.umi.com/pqdweb?RQT=302&cfc=1>. (September 18, 2006): 5. (This article discusses how surgeons are now playing music in the operating. It shows that music has made its way into every part of the medical field.)

McClelland, Susan. "Music: The Power of Positive Percussion." *Maclean's* 116, no. 22.

Retrieved from <http://proquest.umi.com/pqdweb?RQT=302&cfc=1>. (June 2, 2003): 63.

(Shows how music has been helping already in the medical field. Dale Marcell's work with music has improved many people's lives and will continue to.)

Olson, Ray. "Musicophilia: Tales of Music and the Brain." *The Booklist* 104, no. 1 (September 1,

2007): 4. Retrieved from <http://proquest.umi.com/pqdweb?RQT=302&cfc=1>. (This

article discusses how neurologist, Oliver Sacks, believes music effects the brain.)