Music for Bridging the Gaps in Cancer Care

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Abstract

Cancer is an increasing burden in health care worldwide. With growing knowledge and breakthroughs in oncology, the treatment and care of cancer patients has become more sophisticated, with promising results. However, the gaps in cancer care still exist. This article described the opportunities to use music with cancer patients at the university hospital of Khon Kaen, Thailand, in order to improve their quality of life. Culturally appropriate music was applied and various music activities were conducted to promote integrative care and rehabilitation for cancer patients. Moreover, an unexpected benefit of the music therapy program was also encountered, which can address some weak points in medical education.

Keywords: Music, Music Therapy, Cancer, Thailand

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Introduction

> Sir William Osler (1849 - 1919), the father of modern medicine, quotation *"The good physician treats the disease; the great physician treats the patients who has the disease."* (Osler 2003)

In 2008, an estimated 12.7 million new cancer cases and 7.6 million deaths from cancer were reported worldwide (Ferlay et al. 2010). Moreover, the incidence of cancer has been increasing worldwide due to the growing world population, an increase in the proportion of the elderly in developed countries; and an increase in unfavorable behaviors or life styles toward cancer risks (Jemal et al. 2011). The primary goals in cancer control, therefore, have focused on diminishing the occurrence and mortality rate of cancer, while prolonging the survival of the patients. Growing research and scientific evidence in cancer has brought about sophisticated treatments turning out more favorable results. Unfortunately, no dramatic change in cancer control has been achieved for most cancers in most places around the world (Boyle and Levin 2009). Therefore, besides curative aim, attempts have been made to improve the patients' quality of life. This goal sounds simple and sensible but it is practically challenging to be achieved in current clinical practice, where medicine is a jigsaw of specialties and subspecialties. As a result of this system, gaps in health care leave patients suffering from the disease per se and the side effects of treatment. Unfortunately, in a recent study reviewing the video-records of oncologists speaking with their patients, most emotional expression from the patients was overlooked, with only 22% of empathetic opportunities being grasped by the oncologists (Pollak et al. 2007).

Music is an influential media affecting human psychological and physiological response. Therefore, it has been widely used in health care as either music therapy (by trained music therapists) or music medicine (mainly by medical personnel). Growing scientific evidence has supported the favorable effects of using music in cancer care. A systematic review in 2011(Bradt et al. 2011) found benefits from music on anxiety, pain, mood, and quality of life in people with cancer, with small reductions in heart rate, respiratory rate, and blood pressure. Therefore this article aims to present a model of music usage with cancer patients at Srinagarind Hospital, Khon Kaen University, Thailand, in order to bridge the gaps in current clinical service.

Cancer Pain and Music Listening

Pain is a symptom most commonly found in cancer patients caused by either cancer or medical intervention. About 56% of cancer patients at our university hospital presented with cancer pain. Unfortunately, around one-third reported that they had never received pain control prior to admission (Vatanasapt et al. 2008). Besides implementing clinical practice guidelines for cancer pain management in the hospital, non pharmacological approaches, including music, were applied.

Conforming to the culture, the music program, was initiated by nurses in the cancer ward, using recorded traditional instrumental music from northeast Thailand (known as Isan), where music is relevant to the social and religious life of the pa-

tients. The songs were selected based on pleasant melody, soothing timbre, regular rhythm, and tempo between 60 - 90 beat/minute (approximate to the heart rate). The randomized controlled trial was conducted in this setting using Isan music for 30 minutes of listening through around-the-ear headphones, twice a day. This showed a significant reduction of pain and anxiety when comparing the music arm to a control arm (Juangpanich et al. 2012). However, as patient preference is a key factor, we have also developed sets of soothing music in different genres as choices for the patients to individually select.

Speech Rehabilitation and Breathing Exercise

Cancer involved speech organs, for instance the larynx(the voice box), and the hypopharynx(the throat behind the voice box), need extensive rehabilitation to regain verbal communication. As over eighty percents of the patients present in advanced stage requiring surgical removal of the entire larynx (laryngectomy), three options are available for postoperative speech rehabilitation including esophageal speech, vocal prosthesis, and electrolarynx. In Srinagarind Hospital, we have mainly used esophageal speech, as it is appropriate in limited resource situations and is more practical to handle in daily life. However, it requires a specialist, i.e. speech pathologists, great patient effort in developing this skill, and a well organized training program to allow sufficient long term cooperation.

The active music session was used in combination with breathing exercises during the monthly speech training program. The musicians improvised on soothing melody relevant to their breathing and movement. It was usually conducted prior to the esophageal speech training session. The music was also used to motivate the patients to deliver the speaking voice from the esophagus. At the end of the training day, we entertained with a music performance allowing the patients to join using their burp sounds and esophageal speech.

Multidisciplinary Team and Arts 4 'Mee Camp

In addition to speech problems, the patients with laryngeal cancer confront several obstacles. Incapability of saying words complicates their simple daily life, and can turn family leader into dependent child. As a result, it is not uncommon for them to develop major depression, anger, or even aggressive behavior, which also brings about relationship difficulties in their family life. We, therefore, set up a multidisciplinary team for integrative care and rehabilitation, including head and neck surgeons, speech pathologists, physical therapists, nurses, and social workers. Alongside regular health check up, speech training, physical rehabilitation, and social security; psychological assistance is delivered through peer support (laryngectomee society) and religious activities. However, as verbal communication is infeasible in most cases, it was certainly too challenging for them to express their hardship in words. As a result we have sought to apply other routes as a pipeline for psychological ventilation, and have developed the "Art 4 'Mee camp"- an integrative art and music therapy program designed especially for laryngectomee. It is an outreach activity that gathers together laryngectomized

patients, their care givers, and a multidisciplinary team of medical personnel. All participants engage in all activities without being labeled as patient, nurse, or physician, and unnecessary speaking is eliminated.

The music program is mainly free improvisation through musical instruments and movement. The creative music making was also applied for participants to create and perform music together (using mainly percussion instruments) (Cahn 2005). This is not only for the purpose of entertainment, but is also a safe zone allowing them to physically, mentally, and emotionally express through musical instruments, while maintaining connection to others within the group. They develop a sense of being part of the group and a sense of achievement as the music is created.

Besides music, we conducted an art therapy program where participants were given a blank sheet of paper, and various materials used for drawing, painting, printing, cutting, tearing, or gluing. As it was uncomfortable for some patients to freely do their art works, the facilitators introduced art technique and allowed them to explore each one before producing their own works. At the end of the day, we set up an art exhibition, and allowed the participants to share their feelings. On the center of the exhibition room, the empty "tree of hope" was placed to welcome the "leaf of sharing" written and posted by the participants. The tree reflected not only the feelings and thoughts of people, but we also learned that this camp eased their psychological pain. One respondent admitted his prior intention to commit suicide during his most depressive period, but now he was not feeling alone and felt encouraged to continue living his life.

In the camp, we also provided modified yoga class, Buddhist sermons, and shared experiences on laryngectomee care. Moreover, the otolaryngology residents (specialist trainees), who volunteered to participate in the camp, stated that the lessons learned from the camp were beyond what they had learnt in medical school. Although they knew how to treat the cancer patients surgically, and had even been involved in the treatment for some of the participants, this camp allowed them to feel and understand the experiences of the patients they usually overlooked. Empathy is a skill physicians need but it is often absent in medical curricula and it is unlikely to be taught through lectures. A previous study showed that empathy not only made a doctor likable but improved the quality of care they provided (Buckman, Tulsky, and Rodin 2011). A positive neural substrate was also found in the brains of physicians who empathize. There is, however, still a major lacunus in medical education on how to teach empathy for the medical students. It has been established that music making with others engages the brain regions largely overlapping the "Mirror Neuron System", the key area responsible for imitation(Wan et al. 2010). As empathy is generated by inner imitation (Carr et al. 2003), it is a challenging question to research how music can enhance empathy in human beings.

Figure 1. Music & movement activity and the tree of hope at the Art 4 'Mee Camp

Music Medicine and Collaboration

Currently, there are two disciplines using music for medical purposes: music therapy and music medicine. The prior is defined as implementation of music intervention by a trained music therapist, through therapeutic process with the use of personalized music experiences, while the latter is mainly passive listening of recorded music offered by the medical personnel (Dileo 1999). However, in practice, regardless of the therapists, there are no clear boundaries of using music in medicine between the two entities.

In Thailand, where music therapy has been newly developed with limited resources and personnel, , the use of music in medicine is growing dramatically, in parallel with the training of more music therapists. To effectively implement this fascinating tool, it is recommended that the users

1. collaborate between the medical personnel and music specialists, e.g. music educators, musicians, or ideally music therapists.
2. review current available scientific evidence in music and medicine to broaden the perspective in using this intervention appropriately.
3. if feasible, research on using various kinds of music in different health situations or populations. Plentiful questions in this field are waiting to be answered for the future growth of a high potential tool called "music."

Conclusion

Cancer is a major health problem worldwide. Beyond its curative treatment in order to gain survival of the patients, attempts have been made to elevate their quality of life. Music is potentially an effective tool to achieve this goal in cancer care. The model in Khon Kaen demonstrated how music can be deployed to serve various goals in health care and rehabilitation of the cancer survivors. Moreover, music provided a safety zone for the participants to freely express their non-verbal messages while maintaining bonds to the peers. Finally, we discovered an

unexpected outcome for the medical students to experience empathy through music and art activities. This will raise a question for further research to enhance the utilization of music in medicine.

Acknowledgements

The author would like to acknowledge Assoc. Prof. Dr. Benjamas Prathanee for her leadership in developing a well established esophageal speech training program; Mrs. Ubon Juangpanich for initiating music listening program in cancer ward at Srinagarind Hospital; Dr. James Mitchell for his English editing of this manuscript; the Faculty of Medicine, Khon Kaen University, for grant support of the Music for Health Research Group; and finally to the International Association for Music and Medicine (IAMM).

References

Boyle, P., and B. Levin. *World Cancer Report 2008*. 1st ed. World Health Organization, 2009.

Bradt, Joke, Cheryl Dileo, Denise Grocke, and Lucanne Magill. "Music Interventions for Improving Psychological and Physical Outcomes in Cancer Patients." *Cochrane Database of Systematic Reviews (Online)* no. 8 (2011): CD006911. doi:10.1002/14651858.CD006911.pub2.

Buckman, Robert, James A. Tulsky, and Gary Rodin. "Empathic Responses in Clinical Practice: Intuition or Tuition?" *CMAJ: Canadian Medical Association Journal* 183 no. 5 (March 22, 2011): 569–571. doi: 10.1503/cmaj.090113.

Cahn, William L. *Creative Music Making*. New York:Routledge, 2005.

Carr, Laurie, Marco Iacoboni, Marie-Charlotte Dubeau, John C Mazziotta, and Gian Luigi Lenzi. "Neural Mechanisms of Empathy in Humans: a Relay from Neural Systems for Imitation to Limbic Areas." *Proceedings of the National Academy of Sciences of the United States of America* 100 no. 9 (April 29, 2003): 5497–5502. doi:10.1073/pnas.0935845100.

Dileo, Cheryl. "A Classification Model for Music and Medicine." In *Applications of Music in Medicine,* 1–6. Silver Spring MD: American Music Therapy Association, 1999.

Ferlay, J., H. R. Shin, F. Bray, C. Mathers, and D. M. Parkin. 2010. "GLOBOCAN 2008 V1.2." GLOBOCAN 2008 V1.2, *Cancer Incidence and Mortality Worldwide: IARC CancerBase No. 10 [Internet]*. 2010. http://globocan.iarc.fr (accessed December 10, 2012).

Jemal, Ahmedin, Freddie Bray, Melissa M. Center, Jacques Ferlay, Elizabeth Ward, and David Forman. "Global Cancer Statistics." *CA: A Cancer Journal for Clinicians* 61 no. 2 (2011): 69–90. doi:10.3322/caac.20107.

Juangpanich, Ubol, Jureeporn Onbunreang, Thippawan Khansorn, Jantaraporn Lunlud, and Patravoot Vatanasapt. "Effect of Music Therapy on Anxiety and Pain in Cancer Patients." *Journal of Nurses Association of Thailand, North-Eastern Division* 30 no. 1 (March 2012): 46–52.

Osler, William. *The Quotable Osler (Medical Humanities)*. Ed. Mark E. Silverman, T. Jock, M. D. Murray, and Charles S. Bryan. American College of Physicians, 2003.

Pollak, Kathryn I., Robert M. Arnold, Amy S. Jeffreys, Stewart C. Alexander, Maren K. Olsen, Amy P. Abernethy, Celette Sugg Skinner, Keri L. Rodriguez, and James A. Tulsky. "Oncologist Communication About Emotion During Visits with Patients with Advanced Cancer." *Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology* 25 no. 36 (December 20, 2007): 5748–5752. doi:10.1200/JCO.2007.12.4180.

Vatanasapt, Patravoot, Sunee Lertsinudom, Aumkhae Sookprasert, Anakapong Phunmanee, Nutjaree Pratheepawanit, Sirintip Wattanaudomrot, Ubol Juangpanich, and Tatiya Treapkhuntong. "Prevalence and Management of Cancer Pain in Srinagarind Hospital, Khon Kaen, Thailand." *Journal of the Medical Association of Thailand = Chotmaihet Thangphaet* 91 no. 12 (December 2008): 1873–1877.

Wan, Catherine Y., Krystal Demaine, Lauryn Zipse, Andrea Norton, and Gottfried Schlaug. "From Music Making to Speaking: Engaging the Mirror Neuron System in Autism." *Brain Research Bulletin* 82 (3-4) (May 31, 2010): 161–168. doi:10.1016/j.brainresbull.2010.04.010.