Analysis of the application of music therapy to migraine treatment

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Abstract
In recent years, migraine has gradually become a common clinical disease. Migraine usually has intermittent attacks, but the pain is more severe during the attacks, and often develops into a chronic disease, causing greater pain to patients. In the past, doctors usually used medication to treat migraine patients, but many medications not only have more side effects, but also tend to produce drug dependence. Music therapy is a relatively new treatment modality that has developed in recent years, which can produce positive effects on the physical and psychological aspects of patients without using common medication, thus effectively promoting the improvement of patients' symptoms. This paper focuses on analyzing the application of music therapy among migraine headaches.

Keywords
Music therapy; migraine; application.

1. Introduction
Music therapy involves not only music, but also psychology, brain science, intelligent biofeedback and lifestyle, etc. It has been proved by practical research that psychological factors have an important influence on patients' physiological condition, because a happy mood can effectively promote patients' physical situation. Music therapy has a long history and is often referred to as the "medicine of the soul" in the original music therapy records. The definition of music therapy varies from culture to culture, but all of them use music as an important medium to treat patients. Obviously, it has a very important role in the treatment of migraine. Music therapy includes not only the appreciation of music, but also singing, playing, and rhythmic means. In the treatment, the doctor and the patient should cooperate with each other so that a systematic intervention can be performed. This paper will analyze the principles of music therapy in the treatment of migraine application and how to effectively treat migraine patients. Following that, this paper will analyze the advantages of music therapy in the treatment of migraine.

2. Principles of music therapy in the application of migraine

2.1. Physiological mechanism
Music therapy can affect the physiological mechanism of patients. Music usually has specific frequency, sound pressure and regular sound wave vibration, which can cause the physiological response of migraine patients. This specific wave vibration of sound can apply to the patient's collective body systems through the specific frequency band of music therapy, which can cause the harmonious resonance phenomenon of human cells. Thus, it could cause the cranial cavity, thoracic cavity and other tissues to wind up in resonance, indirectly affecting the human brain waves, heart rate, breathing rhythm and so on. Effective music therapy method for a specific migraine patient can produce favorable changes in the patient's physiological state, such as
increasing the excitement of body tissues and producing excitatory factors, thus relieving pain and improving the patient’s physical condition.

2.2. Psychological mechanisms
Music can directly affect mood changes. Music therapy applies music to psychological and emotional systems, and it through musical forms of stimulation to obtain psychological treatment effects. In the process of music therapy, patients are often immersed in the musical atmosphere. Besides, a certain type of music can affect the patient’s mood, thus causing emotional changes such as happiness, sadness, depression and anger. It has been found that music psychological changes have an important correlation to changes in the peripheral nervous system. Through the neuro-endocrine-immune network, music therapy can affect the entire patient’s organism. Through music therapy, the excitability of the patient’s brain nerve cells changes in response to music or dance, releasing neurotransmitters and sending specific signals to the immune system; on the other hand, it via neurotransmission to the endocrine system indirectly, and releasing corresponding hormones to affect the immune system. If a patient’s psychological condition changes, then the patient’s neural network will also change. When some migraine patients have a disorder of the neuroendocrine system, the patient’s physiological health will be dangerous.

3. Application of music therapy for migraine

3.1. Acceptance-based music therapy
The most common application of music therapy is to let patients enjoy music. Also, this kind of application is common in clinical practice in hospital. Many hospitals or specialized music therapy institutions at home and abroad will choose to arrange similar patients to listen to suitable music. For example, migraine patients are allowed to listen to some soft and relaxing music, thus creating a musical atmosphere in which music and the patient’s brain cells or nervous system undergo good changes. By this way, it can improve the patient’s both physical and emotional condition, and influence other psychological mechanisms.

3.2. Performance-based therapy
Performance-based music therapy usually means that the patient not only enjoys to certain music, but can’t help physically dancing or playing simple instruments according to the rhythm of the music. In this way, patients will choose to follow the music that he or she is comfortable with. This improvisational approach to music therapy maximizes the patient’s ability to immerse themselves in the musical area created by the therapist, thus stimulating the patient’s desire to achieve self-worth. Through the multi-sensory influence, it can improve migraine patients’ cognition during attacks and alleviate depression and anxiety caused by migraine attacks.

3.3. Active treatment
Active therapy usually points to patient-initiated music arrangement, performance, and scoring. Usually, the music therapist will choose suitable songs or scripts for the patient to perform. Patients can perform through singing and other forms, thus regulating the patient’s mood in the performing process. Relaxing music can make the patients more relaxed and also exercise the patient’s cardiorespiratory function, thus soothing the condition in all aspects of the body.

3.4. Music electrotherapy
Generally speaking, music current therapy refers to using continuously changing music currents of specific frequencies into patients’ body. In this way, it can cause more complex physiological function changes in the epidermis, capillaries, lymphatic system and deep
muscles, also, it plays a therapeutic effect, such as pain relief, promote blood flow and lymphatic circulation, improve muscle tightness, etc. On this basis, music electro-acupuncture was developed, combining Chinese traditional acupuncture methods with music electrotherapy technology, which can stimulate the patient’s acupuncture points to promote the normal circulation of blood flow and reduce physical pain.

3.5. Hypnotic treatment

Many migraine patients' whole body is in a very tense state when they are suffering, and the hypnotherapy of music therapy can guide patients to relax their nerves and eliminate their mental distractions. The hypnotherapy of music therapy can guide patients to eliminate mental distractions, relax the brain, muscles and bones, and reduce fatigue and pain. On the other hand, through hypnosis, the therapist can replace the painful messages in the patient’s subconscious mind with positive messages, which in turn, the physical pain can be relieved and a more positive physical state is obtained through psychological mechanisms.

4. Advantages of music therapy applied to migraine

Migraine is not just a localized headache or a unilateral headache, but it is a specific disease with specific symptoms and causes. Localized headache is not the only feature of Migraine. The common symptoms of migraine include nausea, vomiting, photophobia, and fear of noise, and the headache usually occurs unilaterally and can last from 2 to 72 hours. The mechanism of migraine is quite complicated, but most medical communities believe "trigeminal vascular theory", which demonstrate that the headache is initially caused by the inflammation of the blood vessels in the meninges, and then travels from the trigeminal pathway to the brainstem, optic thalamus and cerebral cortex, finally causing a series of headache symptoms. The causes and mechanisms of migraine are complex and involve all aspects of the patient’s body, thus long-term medication is often ineffective in treating only parts of the body.

Currently, scientists are studying how the effects of music on mental states can be applied to the treatment of disease, and have more successful cases when using music therapy to treat morbid children, headaches, hypertension, gastrointestinal disorders, and heart disease. Of course, there are some diseases that will not work if their only depend on music therapy, such as hypertension, stomach ulcers and heart disease. Music therapy can only be used as an adjunct to improve the effectiveness of the medication. However, many experts agree that the main triggers of migraine attacks are emotional instability and tension. According to the psychological survey of headache (mainly migraine) patients at home and abroad, the rate of "psychotic" (stubborn) personality is higher in male patients, and the rate of neurotic (emotional, unstable) personality is prominent in female patients. It is clear that the occurrence of the disease is related to personality. In this analysis, music therapy has incomparable advantages for the treatment of migraine. Music therapy can keep migraine patients away from drug dependence, avoiding to a certain extent the effects of possible side effects, thus reducing the financial burden of patients and avoiding their dependence on migraine drugs. On the other hand, music therapy can stimulate patients’ multiple senses and mobilize their emotional centers by intervening in their psychological and physiological mechanisms. At the same time, certain music frequencies can resonate with the cranial and thoracic cavities and other tissue entanglements, indirectly affecting human brain waves, heart rate, breathing rhythm, etc., Relying on all the aspects have discussed, music therapy lead patients to release negative energy and excite signals in a holistic manner, finally help patients relieve pain.
5. Conclusion

In summary, music is the oldest known method of pain relief, having been used for thousands of years. Research has effectively shown that music can reduce stress, depression, and distress in patients with acute and chronic pain. Music therapy is a very promising treatment modality, not only because studies have found that enjoyable music can relieve pain, but also because some soothing music can reduce anxiety and anger. Besides, music therapy involves enjoying music, dancing, simply playing an instrument, etc. The principles used to treat migraine sufferers include acting on both physiological and psychological mechanisms. Up to today, music therapy has been applied in a variety of ways including receptive music therapy, performance therapy, active therapy, electro-musical therapy and hypnotherapy. Compared with traditional medication, music therapy has incomparable advantages, not only can reduce the traditional medication intervention, dependence of migraine patients on medication and the economic pressure of patients, but also can be carried out a relaxed and pleasant atmosphere to guide patients to release negative emotions, relieve physical pain, and promote the development of physical and mental health of patients.

References