Five Phases Music Therapy (FPMT) in Chinese Medicine: Fundamentals and Application

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Abstract

Music therapy has served as complementary and alternative medicine for various neurological disorders. Five Phases Music Therapy (FPMT) employs the theory of five phases and five music scales or tones (宫 Gong (do), 商 Shang (ri), 角 Jue (mi), 徵 Zhi (so) and 羽 Yu (la)) to analyze and treat mind-body illness. In Chinese Medicine (CM), the five music scales are used to connect the human body and the universe, interpret personalities and constitution and analyze the influences of climatic changes on health. FPMT has a self-contained theory and routine of practice application. Large amounts of clinical and fundamental reports have been available and clinical benefits have been obtained. However more systemic clinic research esp. evidence-based and random controlled trials must be performed to validate and optimize its routines and biological and neurological mechanism must be further explored. It's reasonable to believe that the effective music therapy will attract more attention from the world outside China with the introduction of FPMT.

Keywords: emotion and will; music therapy; five phases, five phases music therapy; psychology

1. Background

According to the definition by American Music Therapy Association (AMTA), music therapy employs interventions to accomplish individual goals within a therapeutic relationship by a professional who has completed an approved music therapy program (Kim, 2013). For centuries, music therapy has served as an alternative and complementary approach for various neurological disorders, including stroke, aphasia, visual neglect, Parkinson's disease, dementia, autism, and pain syndrome (Furuya, 2013, Maratos and Gold, 2008). Besides, its effectiveness has been validated by clinic practitioners and researchers worldwide (Xu et al. 2017). Music therapy triggers neuroplasticity, repairs brain damage and regulates the cognitive, emotional and social disorders (Thompson and Schlaug 2015). Music therapy is usually considered as a

subdivision of psychotherapy, esp. art pyschotherapy, which can be solely or jointly applied to intervene mental disorders (Castillo-Pérez et al., 2010). In Chinese Medicine (CM), psychology and physiology are regarded as an inseparable unity, which means in the etiology, pathogenesis and treatment, psychological and physiological changes are mutually affected (Karchmer 2013). Over 2000 years, CM has been employing many non-physiological approaches in its therapeutic spectrum, e.g. music therapy, linguistic therapy, kinesitherapy, etc. (Scheid, 2013; Zhang, 2010). Additionally, music theories have been widely used in CM not only to analyze and explain an illness condition but also to treat mind-body disorders (Liao et al., 2013).

2. Five Phases Music Therapy in Chinese Medicine

Five Phases Music Therapy (FPMT), also called Chinese Medicine Music Therapy (CMMT) employs the theory of five phases and five music scales to analyze and treat mind-body illness. The five music scales i.e. Gong (do), Shang (re), Jue (mi), Zhi (sol), Yu (la) were firstly defined in *Yue Ji (*translated as *Chapter of Music)*, which is the 19th chapter in *Li Ji* or *The Book of Rites* (collected by Dai Sheng from 51 B.C. to 21 B.C.) and the first systemic theoretic records on music (Sung, 2001). In this chapter, the medical effects of music have already been involved.

The model of five phases i.e. metal, wood, water, fire and earth is one of the most basic philosophic foundations in CM (Flower, et al.,2016). In *Yellow Emperor's Inner Classic*, a connection of the five phases, five Zang-organs, and human sound with the five scales has been established (Figure 1). It is also explained that Jue, Zhi, Gong, Shang, and Yu are derived from the very primary sound in the beginning of the universe. As recorded in the classic, each organ has its corresponding sound in nature. This relationship is based on the unique holistic understanding in CM that human being and the nature are unified. Music is the bridge of human body and the universe. There are five scales and six temperaments in nature and there are five Zang-organs and six Fu-organs in the human body correspondingly. Pathologically, harmful sound of Gong, Shang, Jue, Zhi and Yu tends to cause spleen, lung, liver, heart, and kidney disorders respectively.

Figure 1. Classification of the five phases, five organs, human sounds, and five scales.

In CM, the model of five music scales is used to interpret the personality and constitution characteristic of individuals (Wang and Zhu, 2009). There are five main types and each type is further divided into five sub-types. Altogether, the 25 types of personality and constitution are defined. In Yun-Qi theory which includes five Yun (wood, fire, earth, metal, water) and six Qi (wind, cold, summer, damp, dryness, fire) to analyze the climatic changes and their relationship to illness on human body. Briefly, Yun-Qi theory can be used to analyze the etiology and predict the onset of a disease (Ma et al., 2013). The five music scales are applied to interpret a climatic feature. For instance, Gong is the sound of Yang-earth and Yin-earth. The Yang Earth corresponds to Tai Gong (greater Gong) and the Yin Earth to Shao Gong (lesser Gong). Tai Gong generates Yin-metal. Thus, the fives sounds are systemically applied to analyze the temporal and spatial variation of the nature and human illnesses (Gong, 2003).

3. Mechanism of Five Phases Music Therapy

Music is regarded as a universal feature of human societies, owing to its ability to trigger strong emotions and affect moods (Koelsch, 2014). Music therapy has been widely used in coping mental disorders, such as depression, anxiety, insomnia, schizophrenia, phobia, burnout, etc. The mental disorders belong to the emotion and will diseases (Zhang et al., 2015 and Scheid, 2013). Music with the parameters of pitch, frequency, timbre, and volume affects the emotion, regulates the dynamics of Qi

movement including ascending, descending, exiting and entering.

In CM, emotions are closely related to organs. Specifically, thinking corresponds to the spleen (Gong), sorrow/worry to the lungs (Shang), anger to the liver (Jue), joy to the heart (Zhi) and fear/fright to the kidneys (Yu) respectively (Cui et al.,2016). The five scales and human emotions are regarded as manifestations of Qi movements and changes. Emotion-will plays a basic role in the onset, progress and prognosis of almost all diseases, not only the psychological and psychiatric disorders. The emotion-will overcoming therapy (EWOT) derived from the philosophical foundation of Chinese medicine, i.e. Yin and Yang, and Five Elements, is believed to be the most effective modality in dealing with mental illness (Zhang et al., 2014).

Shen (spirit) is the reflection of vitality of the human body (Hsu, 2000). Shen governs all psychological and physiological activities. Therefore, priority must be given to heal Shen in all therapeutic approaches in Chinese Medicine, esp. in acupuncture treatment (Moss, 1999). Music is regarded as the best connection with Shen in all cultures (Gaok 2015 and Miller 2013). In CM, the psychological and physiological processes can be translated into Qi, blood, emotion and cognition. Thus, a model is established, showed in figure 2.
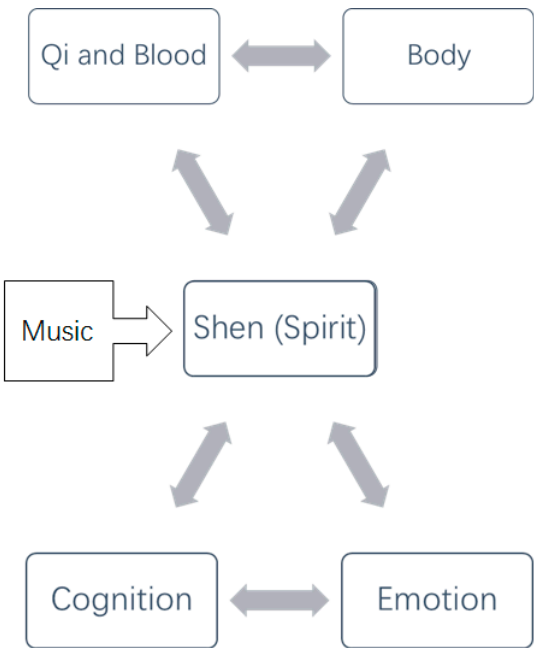
Figure 2. Network model of music therapy in Chinese Medicine.

Therefore, music is called remedy by Zhu Danxi (1281-1358 A.D.), the founder of School of Minister Fire. Interestingly, the two Chinese characters of music and herbal medicine in Chinese language looks very similar (Figure 3) (Cui et al.,2016). For

example, music could significantly treat the burnout symptoms (Brandes et al., 2009).
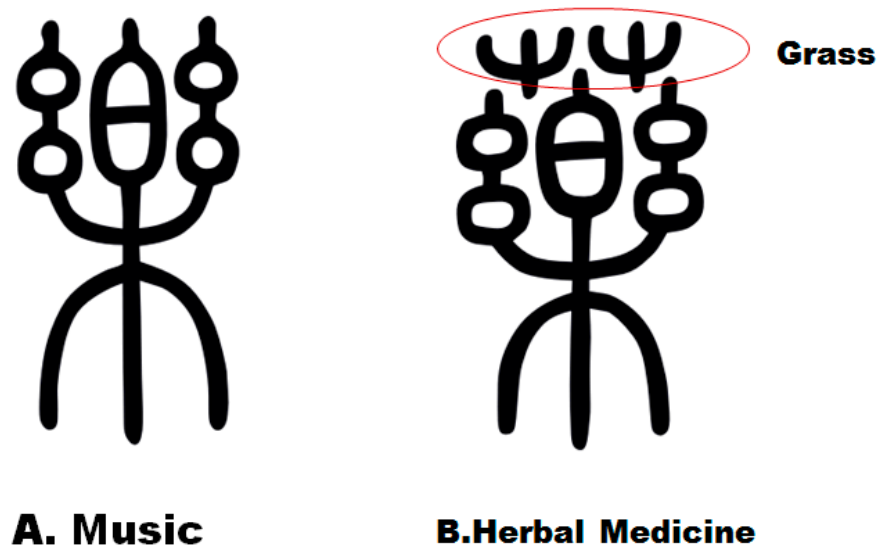
Figure 3. A: music; B. Herbal medicine. The Chinese character of B has an additional part of "grass" above when compared with A.

Jue (mi) and Anger

Anger corresponds to the phase of wood and related to the liver. This category of music /song is characterized by being vigorous, melodious, cheerful, and bright. So it's called the music of the spring. When the reaction is hyperactive, anger drives Qi upwards, leading to rebellions of liver Qi, lung Qi, stomach Qi etc. While the anger within normal range activates the free flow of Qi. A psychological disorder stimulated by anger or manifested as anger normally hurts the liver. Music of Jue scale has the function of lifting Qi and soothing liver Qi. Therefore, Qi blockage can be released.

Zhi (so) and Joy

Joy or happiness corresponds to the phase of fire and related to the heart. This category of music /song is characterized by being warm, cheerful, relaxing, and contagious. So it's called the music of the summer. When the reaction is hyperactive, joy scatters the Shen, leading to distraction, restlessness, palpitation, insomnia, insanity. While joy within normal range facilitates the circulation of blood and inspires spirits. Thus, Music of Zhi invigorates heart Yang, expels cold and regulates Qi and blood.

Gong (do) and Thinking

Thinking corresponds to the phase of fire and related to the heart. This category of music /song is characterized by being calm, solemn, mellow and heavy. So it's called the music of the late summer. When a person thinks too much or suffers entanglement, Qi is bounded and symptoms of digestive system may appear. The music of Gong

strengthens the spleen and stomach and improves the ascending and descending of Qi dynamic of the middle Jiao.

Shang (ri) and Sorrow

Sorrow corresponds to the phase of metal and related to the lungs. This category of music /song is characterized by being resounding, sorrowful, solemn, sonorous and forceful. So, it's called the music of autumn. When the reaction is hyperactive, sorrow consumes Qi. The music of Shang strengthens the astringing and purifying effects of the lungs and regulates water metabolism.

Yu (la) and Fear

Fear corresponds to the phase of water and related to the kidneys. This category of music /song is characterized by being pure, plaintive, desolate, and gentle. So, it's called the music of winter. When the reaction is hyperactive, fear drives Qi downwards. The music of Yu helps the kidneys to consolidate Qi and essence, improve intelligence and memory and prevent aging.

Based on the framework above, CD series composed by Mr. Shi Feng and played by National Central Musical College Orchestra has been published by Chinese Medical Multimedia Press Co.,Ltd. and widely used in clinic practice (Li et al., 2015, Zhang et al., 2014). The CD series is also recommended by Chinese Musical Therapeutic Association. In this set, two different songs (Yin and Yang) are composed, which can be applied based on syndrome differentiation (Table 1).

Table 1. FPMT used for pattern differentiation and music selection.

Music Scales	Nature	Name	Meaning	Effect	Indication
Gong Earth Spleen Stomach	Yang	Shining Sun above the Dantian	The shining sun like a ball of fire, warms and eliminates dampness	Warming the spleen and lifting Yang Qi	Poor appetite, fatigue, depression, diarrhea, sunken organs
	Yin	Jade Fluids Returning to Dantian	The jade fluids like a cool and sweet spring water nourish stomach	Clearing fire, harmonizing stomach, and removing food stagnation	Epigastric distention, depressed stomach fire
Shang Metal Lung Large Intestine	Yang	Bell and Drum Music in Evening with Sunset Glow	The bell and drum voices are spreading under the setting sun kindling the sky	Supplementing lung Qi, unblocking chest and consolidating Wei-defensive Qi	Wheezing, too weak to spit phlegm, sweating, aversion to wind
	Yin	Autumn Breeze and Morning Dew	In the midnight of a clear autumn with full moon, it's slightly cold. Dew is produced to moisture the leaves	Generating Yin and clearing heat, nourishing lungs and generating fluids	Dry cough, fever and restlessness

Jue Wood Liver Bladder	Yang	Warm Breeze under Dark Sky	Warm and comfort wind breezes in spring, with bright sunshine and full of vigor	Supplementing liver Qi, expelling cold and alleviating depression	Dizziness, vertigo, dreaminess, and numbness of limbs
	Yin	Green Leaves and Wondering Cloud	Spring wind brings cool and cold, green leaves	Cooling liver fire, calming hyperactive liver Yang	Vertigo, headache, restlessness, red face and eyes, insomnia, and dreaminess
Zhi Fire Heart Small Intestines	Yang	Green and Fragrant Lotus under Summer Sunshine	Heat in Summer, Fragrance of Lotus	Supplementing the heart Yang, nourishing the heart and calming Shen	Palpitation, upset, chest fullness and short of breath, insomnia and dreaminess
	Yin	Rainbow after Raining	Vivid and clear rainbow after rainbow	Clearing heart fire, and calming Shen	Restlessness and fever, red face and thirst
Yu Water Kidney Urinary Bladder	Yang	Sunshine in Winter	Warm sun at noon in winter,	Warming and supplementing kidney Yang, consolidating essence and strengthening Qi	Lower back pain and weakness of knees, afraid of cold, cold extremities, spermatorrhea, impotence, cold in uterus, morbid leukorrhea

Yin	Snowing and Frozen Winter	Cold and clean ice, pure earth	Clear heart fire, nourishing the kidneys and consolidating will	Restlessness, vertigo, tinnitus, spermatorrhea, amenorrhea.

4. Application of FPMT

Composing of Selecting Music Based on the Pattern (Zheng)

Pattern is the diagnostic result from clinical data assessed by looking, smelling and listening, asking, and palpation. After the pattern of an illness is determined, treatment principle and specific modalities e.g. herbal remedy, acupuncture, diet, Qigong, music can be applied (Fang et al., 2013). Among the methods of analyzing pattern, Zang-fu Bian Zhen or Pattern Differentiation plays the most important role in clinical practice. Based on the relationship of the five scales and five Zang-organs, music is composed or selected according to its nature. For example, when the liver Qi is injured by an excessive anger and the symptoms, such as bitter taste in mouth, red eyes, rib-side pain, irritability, insomnia, irregular menstruation etc. are present, Jue Music should be used. The relationship of the music scales and organs was showed in figure 1. Besides, if the patient shows the same symptoms and patterns but not resulting from the emotional disorder, music therapy is also effective.

Combination/Sheng and Ke

As the music therapy and pattern differentiation of patients' symptoms are based on the theory of five phases. The condition of the pattern must be determined first (Wu et al., 2012). In the diagnostics of CM, all conditions can be classified into Xu (deficiency) and Shi (excess) patterns (Grognet, 2007). According to the clinical therapeutic principle, the mother phase must be supplemented for Xu pattern while the child phase must be reduced for Shi pattern (Figure 4).
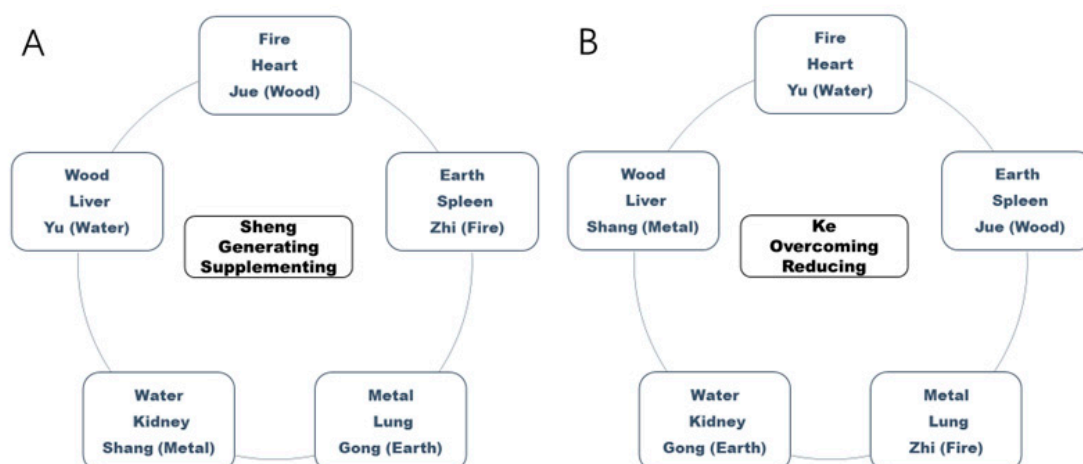
Figure 4. Music composing and selecting model based on the Sheng and Ke principle in the theory of the five phases in Chinese Medicine.

5. Researches

Music therapy has been reported as an effective modality in the treatment of neurological, psychological and psychiatric disorders, which are regarded as Shen disorders in CM. Music therapy is found to have positive effects on decreasing national anxiety score (Dai, 2016). There is evidence of music-supported therapy's positive effects, supporting its use for the treatment of stroke-induced motor dysfunction (Zhang 2016). (Linnemann et al.,2015), It is recorded that listening to music in daily life improves perceived control over pain in female FMS patients. There are also abundant reports on the clinical application of FPMT. The FPMT has been widely used in the treatment of depression, anxiety, PMS, chronic and pain etc., solely or in combination with other therapies(Zhang et al.,2014). Researchers have pointed out that FPMT could alleviate the anxiety and depression symptoms and improve quality of life in lung cancer patient after chemotherapy (Wang et al., 2011, Liao et al., 2011, Liao et al., 2013, Tao et al., 2016). FPMT could alleviate the symptoms of seasonal affective disorder in the elderly (Liu et al., 2014). It is usually applied in combination with acupuncture. For instance, (Li et al, 2015) holds that the combination of FPMT plus electro-acupuncture could reduce the neonatal acidosis and suffocation during normal childbirth. FPMT together with acupuncture, Tuina, Tai Chi, and Qigong have represented adjunctive benefits for the symptoms of cancer patients from the meta-review of 67 RCTs (Tao et al., 2016). FPMT is also known to improves the condition of chronic fatigue syndrome (CFS). Wu et al found that FPMT could regulate the emotion of CFS patients, relieve depression and anxiety, improve the fatigue symptoms (Wu,et al., 2009). Researchers have tried to explore the neurological mechanism of FEMP on animals. (Li and Qi, 2009) reported FPMT tended to increase the value of OE%, as well as the crossing and rearing movement times on SD rats. (Qi et al., 2008) found that the combination of FEMP or electronic acupuncture could lower the 5-HT level in hypothalamus of anxiety rat.

6. Conclusion

Music therapy has served as complementary and alternative medicine for various psychological and pathological disorders. FEMP is a unique method from the combination of Chinese music and CM. It has a self-contained theory and practice. Abundant clinical trials have showed its benefits as primary or complementary approach. More systemic clinic research must be performed to validate and optimize its routines and biological and neurological mechanism must be further conducted.

Besides, it may be a new therapy in conventional music therapy. As CM is getting more and more popular worldwide, introducing FEMP to the world may attract more attention as an effective music therapy.

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Conflict of Interests

The author declares no conflict of interests.

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