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Music Therapy Session with Various Elements for Clinical Effects and Comfortable Mood

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Abstract

Integrative Medicine (IM) includes usual Western Medicine (WM) and Complementary and Alternative Medicine (CAM), which can cover a broad area of medical practice. Authors have continued the management of Integrative Medicine Japan (IMJ) and music therapy session for long. For its session, we tried dual tasks of singing and exercise, stimulating the function of tongue, lips, pharynx, and larynx, sign language (SL). There are some kinds of timbre in music, such as tuning fork, music instruments, and electric sound. These groups seem to be adequate for elderly relaxation in sessions, performance in art/culture, and alarm clock buzzer/specific purpose, respectively.

Keywords: Music therapy (MT), Integrative Medicine Japan (IMJ), reminiscence therapy, timbre

Introduction

Integrative Medicine (IM) has been recently recognized widely across the world, including developed and developing countries(1). IM includes usual Western Medicine (WM) and Complementary and Alternative Medicine (CAM), which can cover a broad area of medical practice(2). As a main society of IM, there has been Integrative Medicine Japan (IMJ) in our country, and authors have continued various conferences as the director of the Shikoku Island branch of IMJ, including annual Bulletins for 12 years(3).

Among them, we have been engaged in music therapy activities for many years(4). In our music therapy group, various session programs, special concert, and performance have been conducted by some professionals, such as physicians, music therapists, pianists, horn players, and some volunteers(5). Target patients or clients are healthy elderly people, elderly people in nursing homes, children, and adults with intellectual disabilities, handicapped people, patients with depression, malignancy, psychological and psychiatric problems.

The music session has an active and passive performance. In the former aspect, we have included some medically effective performances. One is the practice for speaking and singing of the pronunciation of pa-ta-ka-ra(6). This movement brings the increased function of tongue, lips, pharynx, and larynx, and can prevent dysarthria and aspiration in aged people. Dual tasks of singing and exercise of hands and legs are effective by rhythmic music(7). Verbal communication with old favorite songs can give the elderly with dementia and mild cognitive impairment (MCI) psychological stimulation, which has been known as reminiscence therapy(8). Furthermore, we can apply the gesture of sign language (SL) to each music, according to the poem. It can stimulate the integral function of memory, movement of extremities, and verbal communication.

In the latter aspect, the clients can enjoy well-known and favorite music in the music therapy session. Authors have visited regularly some hospitals for music therapy and Christmas concerts for years. We always include some presentations for medical, cultural, and musical factors(9). They are i) a historical and impressive story about Christmas, ii) listening and singing some Christmas-related music, iii) music and exercise therapy for moving limbs to the music, and iv) listening to various kinds of music with a rapid and slow rhythm. In this article, we discuss the characteristic aspects of music, sound, and session, associated with clinical effect and comfortable mood.

Three elements of music are known to be rhythm, melody, and harmony(10). Similarly, three elements of sound include pitch (high or low), volume (strong or weak), and timbre (tune quality). In other words, from the acoustic point of view, any sound or music can be represented by the waveform, which is analyzed by an oscilloscope.

Regarding the timbre, three examples are described. The first is the tuning fork, which shows the simplest timbre of the sound(11). It has been used not only in the tuning situation for music activity but also in examining peripheral neuropathy for a medical check-up. The waveform of the tuning fork is a very simple and smooth sine wave. The second is the sound of the violin or other musical instruments(12). In addition to the basic pitch waveform, their sounds always include several frequencies of 2, 3, 4, and 5 times overlap. Then, although the basic pitch is the same, the sound wave becomes complicated, which results in the beautiful timbre of the violin. The third is an electric sound(13). There is an experiment for adding 3,5,7,9,11,13,15 times of overtones to the basic sound. The combined wave is shown as special tone color.

In this case, the waveform becomes a rectangular shape. Such an approach will make not the natural sound but the electronic sound as created by a computer.

From a timbre point of view, some discussion would be described in these three groups.

The first group has a simple and smooth tone. Among the musical instruments, the closest timbre is the timpani, which can adjust several pitches in a percussion instrument. However, it is too simple to listen to a single tone with only a rhythmic sound(14). Other samples include harp and piano which have many strings to pick or strike for musical scale. The characteristic of the sound wave shows abrupt attenuation from the beginning. When combined with rhythm, melody, and harmony, it will become music. We may consider the sound quality that many elderly people can relax in music therapy sessions(15). For example, in the case of a tenor saxophone, some people may like it, while others may be restless. On the other hand, the flute and horn sounds will probably make most elderly feel peaceful or healing. The reason would be that the timbre is gentle, soft, and transparent(16).

The second group has complex and characteristic tones. It corresponds to all musical instruments, people's songs, and voices(17). This factor is related to art, and depending on the sensitivity of each person, feelings of comfort and healing, excitement, stimulation, and so on(16). The reason would be that they are not only sounds but also characteristic music with complicated timbre.

The third group is electronic sounds. An example is an alarm clock buzzer. This purpose is by no means as pleasant as a window chime. On the contrary, it strongly stimulates the nerves to make the human sense uncomfortable. Acoustically, the characteristic of the sound wave would be rectangular similar to a computer-generated electronic sound(18). There is certainly music that makes use of this sound, but it is psychedelic music, stimulating people's nerves. Probably, listening to such music for a long time seems to be quite difficult.

Figure 1: Music therapy session with children's choir and soft timbre of the horn.

There are recently reports on effective evidence of music therapy to psychological changes. Clinical efficacy of patient-preferred live music (PPLM) was investigated for patients on a cardiovascular unit(19). Biomarkers include the degrees of comfort, relaxation, anxiety, boredom, loss of control, human connection and emotional support and so on. As a result, subjects showed positive perceptions for PPLM(19). Similarly, patients who had the experience of bone marrow transplantation (BMT) showed anxiety and depression, then clinical trial of music therapy was studied(20). Using each PPLM, positive changes were found in pain, anxious/relaxed, drowsy/awake, depressed/cheerful. Three kinds of MT way were compared, which were receptive MT, guided relaxation and active MT. These techniques revealed slight improved pain and mood from pre- to post study(21).

From the three overviews mentioned above, how can music be applied as an art or as a music therapy session in medical practice? The first would be appropriate for music therapy sessions for the elderly. The second would be best suited for various musical instruments, singer concerts, and jazz spots at night. The third would be accepted by the younger generation who loves pops, rock, and roll, etc(22).

In summary, we have introduced some topics of music, sounds, and timbres. Music therapy is becoming increasingly important for IM, medicine practice, welfare, and happiness(23). We hope this article will become some reference for further research development.

Conflicts of Interest: None.

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