

Evaluation on the Necessity and Educational Countermeasures of Music Intervention Therapy in Public Health Emergencies

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Abstract: As people's living standard continues to improve and medical and health care develops rapidly, various public health emergencies come one after another, and music serves as an essential means of communication and performs an influential function in the treatment of diseases. Music intervention refers to the purposeful and conscious organization and management of individuals in social life by using various art forms. Through the use of targeted methods and technical means in the education process, people can achieve the goal of promoting their physical and mental health development. There was a discussion of the role of music intervention treatments in public health emergencies, an analysis of the implications of Music Therapy (MT) applications, and a discussion of the use of MT education. It also found out problems, and designed music intervention education countermeasures. Through the patient's negative emotion test, patient's positive emotion test, patient's pain sense test and patient satisfaction test for patients in public health emergencies, it was found that music intervention therapy can effectively eliminate patients' negative emotions and improve patients' positive emotions. Music intervention therapy can effectively relieve the pain of patients. On the basis of traditional therapy, music intervention therapy can improve the satisfaction of patients, with the satisfaction score increased by 7.1%. It is very necessary to carry out music intervention therapy under public health emergencies.

1. Introduction

Public health events would not only bring huge losses to people's life safety, property and personal rights, but also have a great negative impact on public psychology. Therefore, it is very important to effectively prevent and intervene public health emergencies. MT is an effective means of disease prevention and health education. It can not only make people relax after work, but also have good effects on people's body language expression ability, reaction ability and interpersonal coordination. It is necessary to study the necessity of music intervention therapy and educational

countermeasures.

Many scholars have studied music intervention therapy. Pohl Petra found that music-based group exercises by training patients with Parkinson's disease had a significant improvement in mood, alertness and quality of life in Parkinson's disease patients [1]. De Witte, Martina conducted a multi-level meta-analysis and tested the potential regulators of intervention effects, and achieved good results [2]. Soufineyestani Mahsa remarked that music can be one of the safe and economical non-pharmacological therapies for the treatment of dementia in most cases and commented that musical interventions can be one of the safe and economical non-pharmacological therapies for the treatment of dementia in most cases [3]. Li Jinyi conducted a methodological overview and macro-analysis of burn patients in a randomized controlled trial to identify the impact of music in treatment and found that musical interventions had a unique effect on pain relief in burn patients [4]. Lee Chiu-Hsiang studied the effect of music in the cesarean process on mothers' anxiety and stress and found that music in the cesarean process is an accessible and efficient way to decrease maternal pressure and anxiety [5]. All the above studies have achieved good results, but there are still some problems.

The role of music intervention therapy in public health emergencies is explored. As many hospitals reduced comprehensive therapy during the COVID-19 pandemic, Reidy Jennifer moved towards the versatility of music to close the gap between the body and society [6]. Goicoechea Tom presented three cases during COVID-19 to show the way to achieve the aims and goals of telemusic therapy, focusing on the adjustment of the virtual MT offer in the period of the COVID-19 pandemic [7]. Gaddy Sarah explored the COVID-19 pandemic, which has been declared to impact music therapists in the areas of jobs, service offerings, and psychological health. Research showed that despite many difficulties during the pandemic, music therapists adapt to changes in service provision and continue to provide services to customers [8]. During the Covid-19 pandemic, Grady M improved the emotional and mental health of people with different health conditions through music and songs, and found that effective intervention in the late stage of dementia through MT can promote health and improve the quality of life [9]. During the public health emergency Covid-19 pandemic, Soon Shu Min Camellia showed that tele health MT can be effectively carried out in hospice care. How the various interventions were carried out online was also highlighted, as well as the considerations involved in addressing challenges such as audio latency and lack of physical presence [10]. The above research shows the role of music intervention therapy, but with the continuous improvement of technology, new problems have emerged.

Public health emergencies would have a serious impact on people's daily life, and then cause psychological pressure on people. This paper analyzes the impact of public health emergencies, studies the necessity of music intervention therapy and educational countermeasures under public health emergencies, and alleviates people's psychological pressure to ensure people's health.

2. Role of Music Intervention Therapy in Public Health Emergencies

2.1. Public Health Emergencies at the forefront of Public Health

Public health emergencies are serious outbreaks of communicable diseases, mass epidemics of unexplained diseases, serious food poisoning and professional poisoning, and emergency events that create or may create serious hazards to other communities' public health [11]. Emergency is a general term for unforeseeable events. Public health emergencies have five characteristics, as shown in Figure 1.

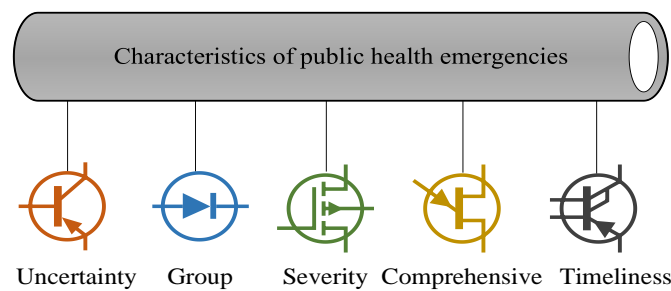


Figure 1: Characteristics of public health emergencies

(1) Uncertainty

Public health emergencies are sudden, unpredictable and, in some cases, unpredictable.

(2) Group

Public health emergencies often affect many people at the same time, even the entire group in the workplace or residence. Especially in today's highly globalized economy, more and more international interactions would lead to cross regional and cross-border communication.

(3) Severity

The sudden nature of the event, the number of people affected, the great loss, the public danger and the serious impact on the socio-economic order have caused very serious social damage.

(4) Comprehensive

Rescue intervention, root cause investigation and aftermath treatment often require close collaboration between different systems and services, and comprehensive coordination and management under the unified leadership of the government.

(5) Timeliness

The suddenness and unpredictability of public health emergencies, as well as the possibility of transient treatment, require the responders to make decisive decisions and rapid intervention.

2.2. Music Intervention Therapy

Taking its place as a new discipline at the intersection of music, medicine and psychology, MT integrates the usage and growth of music beyond the conventional fields of art appreciation and aesthetics [12]. The therapist utilizes all forms of musical experiences and the therapeutic relations formed during therapy to serve as a facilitating factor for the therapist's recovery [13]. For the therapist, there are three levels of MT intervention, as shown in Figure 2.

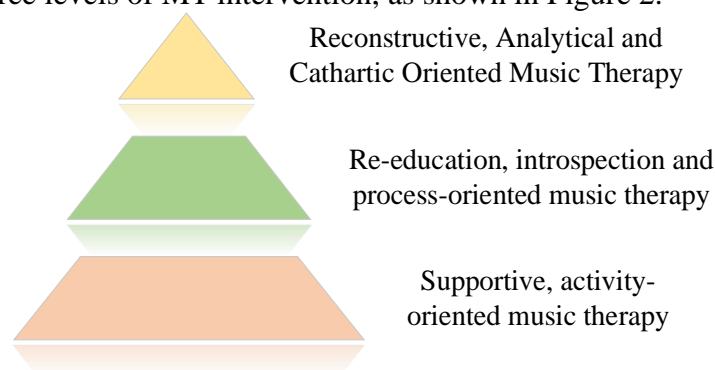


Figure 2: Three levels of MT intervention

(1) Supportive and activity oriented MT

The objectives of therapy are usually accomplished through a variety of MT activities, rather than through introspection or psychoanalysis. The focus is on experiencing "here and now" and

observing behavior. The purpose of these activities is to strengthen normal psychological defense mechanisms and promote appropriate control of behavior. Many group music therapies operate at this level.

(2) Re-education, introspection and process oriented MT

It may also be referred to as a cognitive intervention. In therapy, the structure of music activities focuses on emotion and ideology, emphasizing the exploration of personal thoughts, emotions and interpersonal reactions.

(3) Reconstruction, analysis and catharsis oriented MT

It might be described as a subconscious discovery. One thing that music and subliminal activity have in common is their non-verbal nature. At this level, the subconscious content of the therapist is utilized to build novel mental defense mechanisms, intensify self-awareness, and lead to personality reconstruction.

2.3. Influence of Music Intervention Therapy

Music may also help people get rid of isolation, strengthen social interaction, and enrich and stimulate imagination and creativity. MT uses the powerful influence of music on emotions to change people's emotions and ultimately their cognition. Music affects people's mind and body in many ways, and improves people's mind and body functions. It affects the hypothalamus and limbic system, which is the center responsible for emotion, and the reticular structure of the brain stem, regulating certain hormones in the body, thereby improving brain function. It can regulate the state of internal organs and body, regulate heart rate and blood pressure, and play a role in calming nerves, relieving pain, and improving gastrointestinal and digestive functions. The therapist conducts real-time intervention according to the situation of the client, such as through language communication and changing music choices, guiding the client to self reflect through music, improving emotion and experience, and even changing ideas to promote treatment and health. As a music therapist, he must receive systematic training and learning to adapt to society, correct abnormal behaviors that inhibit social interaction, and achieve physical and mental health through various MT technologies.

Different concerts have different effects on patients, and wrong choices would have adverse effects. There are various forms of MT, such as passive listening. There are many different MT techniques. In addition to super conscious meditation, listening to conversation and imagination guided by music, and passive listening methods, there are also active methods for patients to participate in music activities, such as musical psychodrama, singing or playing musical instruments, and writing songs.

2.4. The Role of MT in All Aspects

(1) Physiological functions

It reduces blood pressure by reducing blood vessel expansion and tension, improves blood supply to the heart and brain, and promotes gastrointestinal peristalsis. It also increases gastric juice secretion, thereby helping digestion and increasing appetite. Music can relax the smooth muscle of respiratory tract and increase gland secretion. It also benefits the mental nervous system, improves attention and memory, and improves mood and mentality. Music can also relieve mental tension caused by complex social and interpersonal environment, as well as pressure and anxiety caused by difficult life and unfortunate encounter. It also helps to restore a healthy and happy state of mind.

(2) Interpersonal communication and social role

Music is a social and nonverbal communication art form, and music itself is a social interaction activity. The gap between social information and social interaction would have a serious impact on

a person's mental health. Music therapists help clients learn and develop interpersonal skills, ability to cooperate with others, and appropriate social behavior, and increase their confidence and self-esteem.

(3) Psychological and emotional effects

Music can have a profound impact on human psychology. This influence includes arousing emotion, developing will and shaping moral character. This effect is closely related to the rhythm of the cell itself. When the rhythm of music is in harmony with the rhythm of micro vibration of body cells, a sense of calm would be generated.

(4) Aesthetic function

Beautiful music not only helps to release the negative emotions that the visitors have long suppressed, but more importantly, it awakens the visitors' experience of beauty, which in turn awakens the power of positive life.

3. Evaluation on Educational Countermeasures of Music Intervention Therapy

3.1. The Application Significance of MT

The application significance of MT can be seen from two main aspects:

Using MT in mental health education can help people realize the diversification of mental health education methods. MT is an effective psychological counseling method, including receptive MT, recreational MT and improvisational MT [14-15]. Introducing these therapies into the mental health education system can provide people with new experiences of mental health education, which is of great significance for improving the effectiveness of mental health education.

MT can effectively treat people's various psychological problems and cultivate healthy emotions. For example, MT can help people with depression, social anxiety disorder and other problems, and effectively eliminate depression and interpersonal disorders.

3.2. Application of MT in Education

(1) Lack of reasonable knowledge and unbalanced promotion of learning

People lack understanding of MT. Most people do not know much about music education and MT. It is not uncommon that MT is not fully understood globally. To connect MT with people's mental health education, people need to understand and accept it.

(2) Lack of qualification certification and obstacles to the popularization of therapy

There are still very few training companies based on MT, and the lack of legally recognized MT qualification means that most people with MT skills cannot find their place in society, which also hinders the spread of MT. MT teachers in higher education institutions often face some obstacles in the process of MT, because they lack the qualification of MT. Teachers need to promote MT among psychological education administrators, explain the effectiveness of MT, and obtain their recognition and support. Music therapists should establish the theoretical basis of music, strengthen the research and development of clinical application, and show the research results of MT to the society, so as to pave the way for their mental health education in higher education.

(3) Single professional ability, lack of scientific evaluation of diagnosis and treatment quality

MT is divided into three categories: supportive MT, reeducative MT and restorative MT. The majority of MT used in mental health education is supportive MT, which usually lasts for a short time and has a single treatment mode. Therefore, such MT has little effect on the treatment of patients with mental disorders. This shows that therapists who use MT should not only consider the form of expression and ignore the actual quality of treatment, but should learn the basic intervention skills of MT and take the practice of psychological intervention as the starting point of MT

interaction.

3.3. Specific Educational Countermeasures of MT

(1) Improving people's understanding of MT

The use and promotion of MT in people's mental health education is based on a high understanding and appreciation of MT. Therefore, the society must effectively promote MT, and promote the integration of MT and existing educational resources, so as to promote MT. Music therapists and mental health educators need to strengthen communication to improve the understanding of the value of music in the development of mental health, so as to improve people's acceptance of MT. The community should make full use of the resources of the mental health education network to deepen the community's understanding of MT. In order to create a good implementation atmosphere of MT in people's mental health education, communities should create a good music atmosphere, improve people's music appreciation and music perception, and especially guide people to establish music learning and communication organizations, so as to lay a good foundation for the implementation and effect of MT.

(2) Improving MT infrastructure

A sound MT infrastructure is not only essential to ensure that MT is applied to the education of people in the field of mental health, but also to improve the effectiveness of MT. The MT room should be relaxed. Objects and green vegetation can be placed in the MT room to provide more comfortable psychological experience for the group, ensure effective communication between people and mental health trainers, and ensure that MT is fully implemented. When designing the environment of MT room and placing objects, people's psychological experience can be used to humanize the special equipment.

(3) Clarifying the application process of MT

A clear implementation process of MT is a prerequisite for the standardization of MT in mental health education. Although there are differences in the ways of MT, the process can be divided into five stages. Professional music therapists should determine the treatment methods and models suitable for individual mental health problems, and set short-term and long-term goals. At the same time, professional music therapists should modify the MT project to improve the effect of MT. Finally, in the evaluation report stage, professional music therapists should record the process of MT, evaluate the achievement of treatment goals, and prepare a mental health file and MT implementation file on this basis, so as to provide a baseline for future MT work.

(4) Building a talent team of MT

Excellent music therapists are the important guarantee for better integration of MT into people's mental health education, and also the key to improve the practical effect of MT. The society should attach importance to training the management team of MT talents and provide human resources support for the effective implementation of MT. Specifically, it is to infiltrate MT into people's mental health education, implement MT, and realize the professionalization of MT talent management team. It also introduces excellent MT professionals, and promotes the improvement of mental health educators' ability to implement MT by guiding teachers' communication and exchange, exchanging experience in the implementation of MT, etc.

4. Influence of Music Intervention Therapy on Patients

In order to test the impact of music intervention therapy on patients under public health emergencies, 100 patients were randomly selected in a hospital for experimental testing, and were divided into two groups, 50 patients in each group. Among them, patients in Group A were treated with traditional treatment, and patients in Group B were treated with music intervention on the basis

of traditional treatment. In the experimental stage, the patients in the two groups were tested for their negative emotions, positive emotions, pain perception and patient satisfaction. The differences between the test results of patients with different treatment methods were observed, and the experimental results were recorded and analyzed.

4.1. Patient's Negative Emotion Test

The stronger the negative emotion of the patients, the more unfavorable the treatment and recovery of the patients themselves. The patients in the two groups were tested for negative emotion. The negative emotion was divided into four grades: very poor, poor, medium, and good. This paper observed the difference between the negative emotion test results of the two groups of patients, and recorded and analyzed the experimental results, and the specific results are shown in Figure 3.

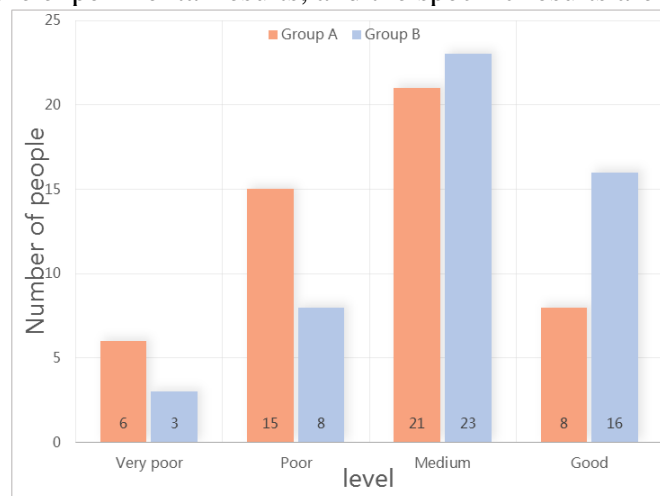


Figure 3: Patient negative emotion test

It can be seen from Figure 3 that the negative emotions of patients in Group B were significantly lower than those of patients in Group A. Among them, there were 6 patients in Group A and 3 patients in Group B. There were 15 patients in Group A and 8 patients in Group B. There were 21 patients in Group A and 23 patients in Group B with moderate emotion. There were 8 patients in Group A and 16 patients in Group B. To sum up, there were more patients with poor negative emotions in Group A than in Group B. Music intervention therapy can effectively eliminate the negative emotions of patients.

4.2. Patient Positive Emotion Test

The higher the positive mood of the patient, the more cooperative the disease treatment is, and the better the final treatment effect would be. It is very important to ensure that the positive mood of the patient is good. The positive emotions of patients in the two groups were also divided into very poor, poor, medium and good. This paper observed the difference of positive emotions between the two groups of patients during treatment, and recorded and analyzed the experimental results, and the specific results are shown in Figure 4.

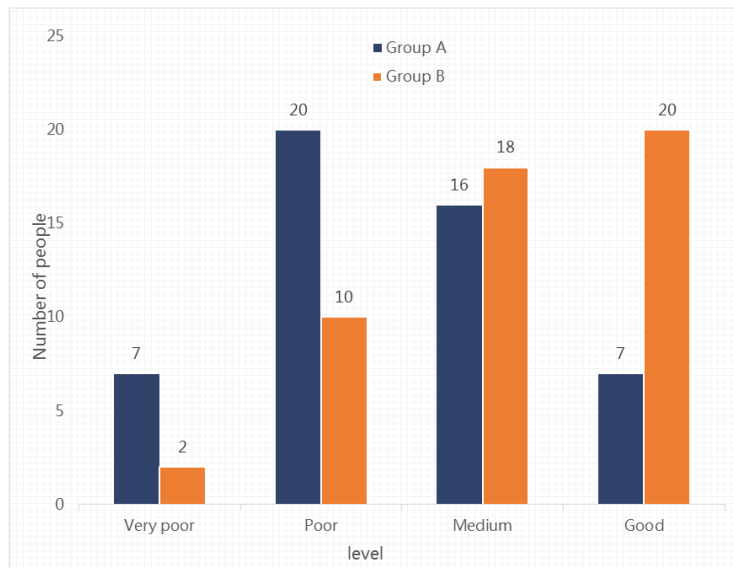


Figure 4: Patient positive emotion test

It can be seen from Figure 4 that the enthusiasm of patients in Group B was significantly higher than that in Group A. Among them, there were 7 patients in Group A and 2 patients in Group B. There were 20 patients in Group A and 10 patients in Group B with poor positive emotions. There were 16 patients in Group A and 18 patients in Group B with moderate positive emotions. There were 7 patients in Group A and 20 patients in Group B. To sum up, music intervention therapy can improve the positive mood of patients under public health emergencies.

4.3. Patient Pain Test

The influence of music intervention therapy on patients is mainly reflected in the psychological and physiological aspects, and the physiological aspect is mainly pain. The patients were tested for pain perception. The pain perception was divided into 1 to 5 grades, of which grade 1 was the lowest and grade 5 was the highest. In this paper, people observed the difference of pain feeling among patients treated with different treatment methods, and recorded and analyzed the experimental results, and the specific results are shown in Figure 5.

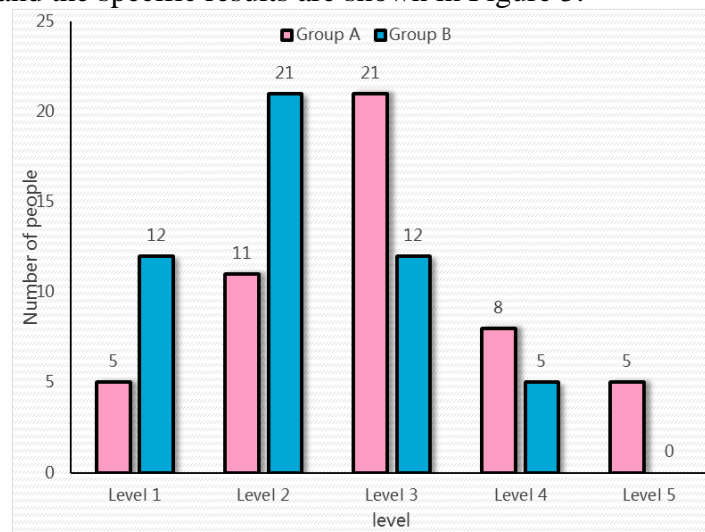


Figure 5: Patient pain perception test

It can be seen from Figure 5 that the pain feeling of patients in Group B was lower than that of patients in Group A. In the course of treatment, there were 5 patients in Group A with pain of Grade 1, 11 patients in Grade 2, 21 patients in Grade 3, 8 patients in Grade 4 and 5 patients in Grade 5. In group B, there were 12 patients with Grade 1 pain, 21 patients with Grade 2 pain, 12 patients with Grade 3 pain, 5 patients with Grade 4 pain, and 0 patients with Grade 5 pain. To sum up, music intervention therapy can effectively relieve the pain of patients.

4.4. Patient Satisfaction Test

Patient satisfaction represents the degree of recognition of the treatment process. Four patients were randomly selected from each of the two groups for satisfaction testing. The highest satisfaction score was 10 points. This paper observed the difference of patient satisfaction test results with different treatment methods under public health emergencies, and recorded and analyzed the experimental results, and the specific results are shown in Figure 6.

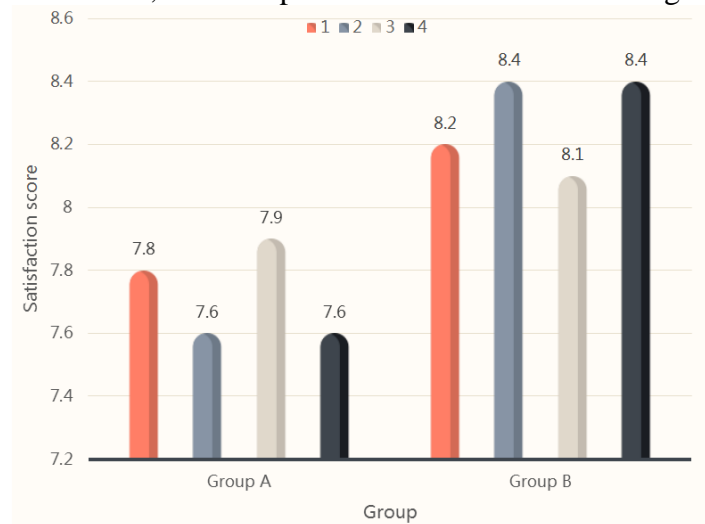


Figure 6: Patient satisfaction test

It can be seen from Figure 6 that the satisfaction score of patients in Group B was significantly higher than that of patients in Group A. Among them, the satisfaction score of patients in Group A was between 7.6 and 8.0, and that of patients in Group B was between 8.1 and 8.5. The average satisfaction score of patients in Group A was 7.725, and that of patients in Group B was 8.275. To sum up, music intervention therapy on the basis of traditional treatment can improve patient satisfaction, and the satisfaction score increased by 7.1%.

5. Conclusions

The occurrence of public health emergencies has a great impact on the social economy, while seriously endangering people's physical and mental health. While people suffer physical trauma, they also have to bear a lot of psychological pressure. This paper proposed that music intervention therapy can be used to treat patients in public health emergencies, relax the mood of patients with music, and reduce the psychological pressure of patients. The application of music intervention therapy can effectively reduce the negative emotion of patients and improve the positive emotion of patients. In the process of treatment, it can reduce the pain of patients. Music intervention therapy can make patients more satisfied.

Acknowledgement

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