

Analysis of the Effect of Music Therapy Experiments on Depression

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ABSTRACT

As music therapy becomes more and more widely used in the clinical application of various psychiatric disorders, people also pay attention to the efficacy of music therapy in the treatment of patients with depression. In order to verify the influence of music therapy on depression, experts from various countries have conducted various experiments on music therapy. By comparing several domestic and foreign experiments, this paper summarizes the main steps of this type of experiment, analyzes the advantages and disadvantages of each step in the experiment, and summarizes the experience to provide reference for future development. Through the analysis of the selected five experiments, it can be seen that the basic method commonly used in such experiments is to randomly select some patients with depression and divide them into two groups. The method of treatment, after a period of time, the curative effect of the two groups was compared. After analysis, it can be concluded that for experiments to test the efficacy of music therapy on depression, we can optimize the experiment as much as possible from the aspects of sample objects, music therapy methods and frequency, and sample grouping to obtain more accurate experiments result.

Keywords: Music therapy, Depression, Experimental analysis, Randomized controlled trail

1. INTRODUCTION

Depression is a common mental illness, which is caused by a variety of reasons with depression as the main symptom. It is manifested by loss of interest, self-guilt, attention difficulties, decreased appetite, and suicidal ideation, as well as other cognitive, behavioral, and social dysfunction [1]. Depression is the leading cause of disability worldwide and a major contributor to the overall global burden of disease [2]. So far, the traditional treatment of depression is mainly based on drugs, although there is a certain curative effect, the disease is prone to recurrence [3]. The currently commonly used drugs for the treatment of depression also have side effects on the human body that affect people's health [4]. Common adverse reactions include gastrointestinal adverse reactions and cardiovascular side effects. In recent years, many experts are also looking for more healthy or less harmful treatments for the clinical treatment of depression. Music therapy, also known as music therapy, refers to a psychotherapy technique that uses the non-verbal aesthetic experience of music and the activities of playing music to achieve the purpose of psychological adjustment. It is an emerging borderline interdisciplinary subject integrating

music, medicine, psychology and education [5]. Music is closely related to people's daily life, especially for some patients who cannot receive speech psychotherapy, the non-verbal form of music therapy has advantages that cannot be ignored. Therefore, many scholars have designed experiments to verify the influence of music therapy in the treatment of patients with depression [6-10]. However, due to the large limitations and many variables of such experiments. This article aims to compare several of these experiments to summarize their The advantages and disadvantages provide a reference for subsequent experiments.

2. AN OVERVIEW OF THE EXPERIMENTAL PAPER

This paper selects 5 experimental papers related to music therapy for depression. The process of the experiment is unified to randomly select some depressed patients and divide them into two groups. One group was treated with conventional drug therapy or psychological counseling; the other group was treated with music therapy on the basis of conventional therapy. After a certain treatment time and frequency, the treatment effects of the two groups of patients were

detected and compared, so as to verify the effect of music therapy on depression. In addition to the basic experimental steps described above, different authors have many differences in the details of the experimental

process. Therefore, this paper will use a chart to display 5 different experimental contents (Table 1). In order to express more intuitively, the five experiments are respectively referred to as experiments 1-5.

Table 1 Five different experimental contents

	Sample Selection	Form of Grouping		Methods of Music Therapy	Frequency and Duration of Music Therapy	Efficacy Assessment Tools and Methods		Result
		treatment group	contrast group			Tool	Method	
Experiments 1 ^[6]	57 volunteer (in line with CCMD-III criteria)	treatment group ;	contrast group	passive participatory music therapy (music listening, song discussion)	40 minutes per treatment; twice a week; 8 weeks	Tools: Hamilton Depression Scale, Hamilton Anxiety Scale;	Methods: Test in first week, the second week, the fourth week, and the eighth weekend; and compare the reduction rate of the scale	Compared with the reduction rate, the treatment group was higher than the control group; 26 cases in the treatment group were relieved, and 18 cases in the control group were relieved.
Experiments 2 ^[7]	82 volunteer (in line with the CCMDR-2 criteria) 3 cases did not complete the treatment for some reason	41 samples	41 samples	Listen to classical music repertoire for psychological counseling and communication	90 minutes per treatment; Once a day; 2 months	Tools: Hamilton Depression Scale	Methods: Comparing the therapeutic effects of before the experiment, and after the experiment	The curative effect rate: 68.2% in the music therapy group and 26.3% in the control group.
Experiments 3 ^[8]	113 volunteer (all meet the diagnostic criteria for depression)	58 samples	55 samples	Combination of receptive and participatory therapy (1. Appreciate, sing, play, learn a certain musical instrument in a targeted manner; 2. communicate with the therapist)	60 minutes per treatment; Once a day; 8 weeks	Tools: Hamilton Depression Scale, The Personal and Social Performance scale	Methods: Comparison of the scores of HAMA and PSP before and after the experiment between the two groups	The total HAMA scores of both groups were significantly lower than those before treatment, and the music group was even lower than the control group; The total score of PSP in both groups was significantly higher than that before treatment, and the music group was higher than the control group.
Experiments 4 ^[9]	79 volunteer (18 of them gave up)	41 samples	38 samples	Select baroque and classical music for musical exposure	50-minute personal contact at home once a day; one group contact at the hospital once a week; 8 weeks	Tools: Beck depression rating scale; Hamilton Depression Scale	Methods: The Beck Depression Scale was used to assess once a week, and the Hamilton Depression Scale was used before and after the experiment.	The music therapy group: 29 improved, 4 did not improve; The psychotherapy group: 12 improved and 16 did not improve.
Experiments 5 ^[10]	85 volunteer (9 of them gave up) (Psychotic patients with repeated suicidal behavior, acute and severe drug abusers, severe depression that prevents participation in the measurement, and patients who are unable to communicate verbally were excluded)	music therapy in addition to standard treatment	with standard treatment	Psychodynamic-based improvised music therapy that encourages patients to engage in musically expressive interactions	60 minutes per treatment; twice a week; 3 months	Tools: Montgomery and Åsberg Depression Rating Scale (MADRS), Hospital Anxiety and Depression Scale (HADS), GAF (Global assessment of functioning), RAND-36, TAS-20	Methods: Music analysis, Video analysis, EEG measurement, Behavioural test (emotional qualities of music), Statistical analyses	Music therapy is effective for people with depression.

3. DISCUSSION

The table shows intuitively see that although the general structure of each experiment is similar, there are many differences in the details of the treatment process.

3.1. For the sample object

In Experiments 1 and 3, no patients dropped out of the experiment, and in the other three experiments, there were patients who did not complete the experiment.

Based on this situation, the sample selection should consider whether the expected sample size is sufficient for exploratory experiments. At the same time, it is necessary to ensure that a sufficient sample size should be selected in the early stage, so as to avoid the loss of samples during the experiment, resulting in no reference for the experimental results.

In addition, the experiment should select willing patient samples. If patients can actively participate in the experiment, the rate of sample loss can be reduced. Experiments 1 and 4 have few restrictions on the selection of sample subjects, and people only need to meet the diagnostic criteria for depression can attend the experiment. In the fifth experiment, the sample objects were screened in many aspects. Experiment 5 excluded the depressed patients, as they did not have the ability to communicate or participate in the test, which would affect the smooth running of the experiment. Drug users or addicts were also excluded. Therefore, multiple factors should be considered when selecting samples for experiments. Try to control the variables to a minimum so as not to affect the experimental results.

3.2. For the perspective of music therapy

3.2.1. Group music therapy or one-on-one music therapy

Group music therapy was used in most of the five experiments. Its benefits are time-saving and labor-saving. In the case of an excessively large sample size, it is difficult to maintain a high frequency of treatment with one-to-one music therapy.

But if there are enough music therapists, one-on-one music therapy is more appropriate. Because everyone's ability to accept and how to accept it is different, the advantage of one-on-one therapy is that it can understand the patient's music preferences and develop specific treatment plans for different patients.

So when conditions permit, one-on-one therapy will be better than group therapy.

3.2.2. Form of treatment

In five experiments, different treatment modalities were used, such as ranging from receptive music therapy (listening to music provided by a therapist), participatory music therapy (singing songs or playing an instrument), and improvisational music therapy (percussion through MIDI to improvise). For the form of treatment, different treatment plans should be developed according to the specific conditions of different patients. There is no good or bad treatment method, only whether it is suitable or not.

3.2.3. Involvement of the patient's family

In addition to the above points, the patient's family members should be encouraged to participate in and cooperate with the treatment during the treatment process, so that the patient can also have some musical contact at home accompanied by the family members. For example, a therapist could build a playlist based on a patient's music preferences, and family members could play the same music at home. Just listening quietly can be helpful to the patient.

3.3. For the frequency of music therapy

Some of the five trials had treatment frequency twice a week, while others had treatment frequency once a day. The total duration of the experiment was 8 weeks or 3 months.

Meeting with a therapist more frequently not only results in better treatment outcomes, but also allows for better control for variables caused by other events in the patient's life and for better coping with emergencies. The experimental results are more convincing. In addition, the time line of the experiment should be well controlled. The longer the time line of the experiment is, the greater the sample loss rate will be.

3.4. For the assessment tools

Most experiments used only the Hamilton Depression Scale for assessment, and some added the Beck Depression Scale or the Personal and Social Functioning Scale. The symptoms of depression patients are manifested in various aspects, not only in terms of depressive symptoms, but also in various general symptoms and functional manifestations. While the Depression Scale is only a diagnostic tool, its results can be one-sided, and it is difficult to derive significant changes from it. If the patient's insomnia was improved through treatment, this is also one of the manifestations of the treatment effect, but this situation cannot be fully reflected in the depression scale. In response to this problem, Experiment 5 has obvious advantages, because its evaluation tools are more diverse and comprehensive, and it can better evaluate the changes of patients from various angles. In addition, interviews can be included in the assessment. Through the interviews, in-depth interviews can be conducted with the patients themselves and their family members to collect the patient's situation and to have a more comprehensive understanding of the changes in all aspects of the patient's life.

3.5. For the sample grouping

The samples in the five experiments were divided into two groups, one group received conventional treatment and the other group added music therapy on

top of it. Because patients who accept regular treatment therapy are also in a therapeutic setting, the results may not be too dramatic when compared with patients receiving music therapy. But if compared with patients who did not receive any treatment, a more significant effect may be obtained. So if conditions permit, the author suggests that patients can be divided into three groups, not receive any treatment, conventional treatment therapy, and music therapy on the basis of conventional treatment therapy. These will make the results obtained from the experimental results more informative.

4. CONCLUSION

From the experimental results of the five experiments, it can be seen that music therapy does have a certain effect on the treatment of depression. However, there are too many uncertain factors in the experiment, such as different efficacy evaluation tools and evaluation methods, different experimental samples, different treatment process, and the experimental results are not comparable. Therefore, this paper did not compare the results of the five experiments.

To sum up, through the comparison and analysis of the five experiments, an ideal experiment can be imagined. Firstly, it is necessary to select a sufficient sample size, and contain the willingness of participate. It also needs to control the variables that affect the experimental results to a minimum. Secondly, the samples need to be divided into three groups, no treatment group, conventional treatment group and music therapy group. Moreover, the treatment process should be flexible, that is different music treatment plans need to be formulated according to the conditions of different patients. Family members can be encouraged to participate in the treatment process. Finally, the experiment needs to increase the frequency of treatment and evaluate the effect of treatment from multiple aspects.

This article also has many shortcomings. Due to the limitations of the conditions, the author cannot finish the experiment and analyze a conclusion, so the above ideas only follow the theoretical knowledge. In the future, if conditions permit, the author will personally verify his ideas and continue to follow up related research.

REFERENCES

- [1] YAO, S, Yang, Y, 2013, *Medical Psychology*, 6th edition, People's Medical Publishing House Co.,LTD, Beijing, China.
- [2] World Health Organization (WHO), *Depression*, 2021.
<http://www.who.int/mediacentre/factsheets/fs369/en/>.
- [3] Manalai, G., Manalai, P., Dutta, R., Fegan, G., & Scrofani, P. (2012). Rapid improvement of depressive symptoms and cognition in an elderly patient with a single session of piano playing: a clinical treatment report. *Aging clinical and experimental research*, 24 (3), 278-280.
- [4] Hetzen, P. G., Carney, J. F., Walker, A. E., & Stewart, J. J. (1983). Depression—a side effect of 13-cis-retinoic acid therapy. *Journal of the American Academy of Dermatology*, 9 (2), 278-279.
- [5] Zhang D. The development of music therapy [J], *Legal System and Society*, 2008, (2).
- [6] YU J, 2012, The role of music therapy in patients with depression. *Chinese Community Doctors*, 14(27), 144-145.
- [7] Wen H, 2013, Clinical observation of music therapy in 82 cases of depression, *Chinese and Foreign Medical Research*, 11(29), 130-131.
- [8] Wang S, Gong C, Zhu J, Cheng G, Zhou M, & Zhou L, 2013, The rehabilitation effect of music therapy on patients with depression, *Zhong Guo Kang Fu*, 27(6), 459-460.
- [9] Castillo-Pérez, S., Gómez-Pérez, V., Velasco, M. C., Pérez-Campos, E., & Mayoral, M. A. (2010). Effects of music therapy on depression compared with psychotherapy. *The Arts in psychotherapy*, 37 (5), 387-390.
- [10] Erkkilä, J., Gold, C., Fachner, J., Ala-Ruona, E., Punkanen, M., & Vanhala, M. (2008). The effect of improvisational music therapy on the treatment of depression: protocol for a randomised controlled trial. *BMC psychiatry*, 8 (1), 1-9.