
Analysis of the Application Effect of Music Therapy in the Rehabilitation of Elderly Patients with Chronic Diseases

Haochen Shi*

Hainan Vocational University of Science and Technology, Haikou 571126, Hainan, China

**Author to whom correspondence should be addressed.*

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Abstract: The process of social aging is accelerating continuously, and the risk of chronic diseases among the elderly is gradually increasing. During the long-term recovery stage of various diseases, various psychological problems often accompany. The limitations of the conventional rehabilitation model in practical application have become increasingly prominent. Music therapy is a type of non-pharmacological intervention, which is safe and does not require high costs. Combined with current cutting-edge neuroscientific technologies and intelligent means, it can effectively alleviate the symptoms of diseases, improve the psychological state of the elderly, and also enhance the acceptance of rehabilitation intervention by the elderly population to a certain extent. Based on the actual operations in clinical practice and the latest frontier research results in recent years, this paper focuses on discussing its effective application methods, hoping to provide practical references for grassroots medical institutions and elderly care institutions to carry out related rehabilitation services, and helping to improve the quality of chronic disease rehabilitation for the elderly.

Keywords: Music therapy; Elderly; Chronic diseases; Rehabilitation application; Frontier technology

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1. Introduction

Most chronic diseases are characterized by prolonged course and frequent recurrence. These diseases not only affect the physical functions of the elderly but also tend to cause negative emotions such as anxiety, depression, and loneliness, resulting in a significant impact on their overall quality of life. Currently, the rehabilitation of chronic diseases mainly relies on drug regulation and routine physical exercises. However, there is often insufficient attention paid to the psychological needs and physical endurance of the elderly. Some elderly people may reduce their willingness to continue participating in the rehabilitation process due to the monotony of the process and the slow manifestation of effects. Music therapy originated from traditional healing concepts and has continuously integrated modern neuroscience and intelligent technology during its development. The equipment requirements are not high, and the actual operation is relatively simple. By leveraging the regulatory effects of melody and rhythm, it can influence the release of related substances in the human body, thereby alleviating pain and negative emotions. By integrating recent practical experiences and relevant research

conclusions, exploring the specific application of music therapy in the rehabilitation of chronic diseases among the elderly may provide some new thoughts for the development of this field.

2. The significance of music therapy in the rehabilitation of elderly patients with chronic diseases

The core of rehabilitation for elderly patients with chronic diseases is not merely achieving complete disease cure; rather, it is to alleviate the symptoms of the diseases and improve their quality of life. Music therapy precisely meets this core requirement. From a physiological perspective, appropriate music can regulate heart rate and blood pressure, and also alleviate chronic pain. For example, for elderly patients with hypertension, soothing melodies can reduce the excitability of the sympathetic nervous system and help maintain blood pressure within a reasonable range. For elderly patients with diabetes, regular music intervention can assist in regulating blood sugar fluctuations and reduce the risk of complications. Psychologically, due to the long-term impact of chronic diseases on the elderly, their social activities have decreased, and they are prone to negative emotions such as loneliness and depression. Music can evoke people's emotional resonance, thereby alleviating psychological stress. Many elderly people have special emotions towards their classic songs from their youth. Playing such music can awaken their cherished memories, enhance their sense of joy, and reduce the occurrence of negative emotions. At the same time, music therapy can also enhance the elderly's confidence in rehabilitation, making the otherwise dull rehabilitation process more humane and improving their compliance with rehabilitation training. In addition, music therapy has lower costs and operational risks, and does not require large-scale medical equipment. It can be carried out not only in medical institutions but also in communities and in the homes of the elderly. This is in line with the promotion requirements of non-pharmacological intervention methods in the Healthy China 2030 plan and can to some extent make up for the shortage of rehabilitation resources at the grassroots level. The practical promotion value is particularly prominent^[1].

3. Application strategies of music therapy in the rehabilitation of elderly patients with chronic diseases

3.1. Improve the training and support mechanism to solve the problem of talent shortage

The lack of talent is a relatively prominent obstacle encountered in the promotion of music therapy in the rehabilitation of elderly patients with chronic diseases at the grassroots level. The actual conditions of grassroots medical institutions and elderly care facilities are limited, and it is not feasible to cultivate professional music therapists on a large scale. A more practical approach is to adopt a combination of specialized training, on-the-job training, and online support, gradually alleviating the shortage of talent supply, and ensuring that relevant grassroots institutions have a sufficient number of qualified staff to carry out basic music intervention work^[2]. It is possible to collaborate with local medical colleges and vocational schools to appropriately add basic courses related to music therapy in nursing, elderly service and management and other related majors closely related to elderly health. The course content should be as comprehensive as possible, covering basic knowledge of chronic diseases in the elderly, basic theoretical knowledge of music therapy, methods for designing simple intervention plans, and various techniques in practical operations. The aim is to cultivate a group of professionals with basic application capabilities in music therapy. After graduation, these talents can be directed to grassroots medical institutions and elderly care facilities. On-site medical staff and caregivers in the grassroots can also participate in short-term concentrated training. Clinical experienced music therapists and experts in geriatric diagnosis and treatment can give lectures. Practical operation contents such as selecting musical pieces, observing the condition, and adjusting the plan are explained based on real rehabilitation scenarios. After the training, a simple ability test is conducted to ensure that the trainees can independently complete basic music intervention work. Establishing a remote support mechanism is also crucial. Experienced professional music therapists from first- and second-tier cities can provide real-

time guidance to the staff of grassroots institutions through online video and voice communication. For example, when a certain elderly patient has a particularly special condition and grassroots staff find it difficult to design an appropriate plan, they can remotely assist in designing a personalized intervention plan and answer various questions encountered in practical operations. Of course, it is also encouraged that professional talents in cities conduct regular free medical consultations and on-site guidance activities in the grassroots, guiding grassroots personnel to improve their abilities hand in hand, gradually alleviating the problem of uneven talent distribution. In addition, appropriate salary increases for personnel engaged in music therapy-related work at the grassroots level should be increased to attract more talents to stay in the grassroots and serve them.

3.2. Focus on personalized adaptation to enhance rehabilitation outcomes

For music therapy to truly play a role in the rehabilitation of elderly patients with chronic diseases, personalized adaptation is undoubtedly the key factor - tailoring a music intervention plan that suits each individual's physical condition and personal preferences, while firmly avoiding the "one-size-fits-all" approach^[3]. Before formulating a specific intervention plan, a comprehensive assessment of the elderly should be conducted. The assessment should be as detailed as possible, including the specific type of chronic disease the elderly suffer from, the severity of the condition, the body's tolerance level, their usual music preferences, and their current psychological state. After the assessment, a complete personal file should be established, and all relevant information should be meticulously recorded for convenient adjustment and review of the subsequent plans. For example, for elderly patients with cardiovascular diseases such as hypertension and coronary heart disease, priority should be given to choosing music with a gentle rhythm and beautiful melody, such as classical music or folk music with soothing pieces. Avoid music with fast rhythms and intense melodies to prevent them from stimulating the elderly's cardiovascular system and worsening their condition; for elderly patients with diabetes, music with a stable rhythm and the ability to alleviate anxiety can be selected. By regulating emotions, it can indirectly assist in controlling blood sugar levels. If the elderly have cognitive decline, priority should be given to their favorite classic music from their youth, which may better awaken their memory and slow down the rate of cognitive decline^[4]. After the intervention plan is formulated, it should be dynamically adjusted based on the actual physical reactions of the elderly. During the music playback process, staff should constantly observe the elderly's heart rate, blood pressure changes, and facial expressions. If the elderly show symptoms such as anxiety or restlessness, the current music should be immediately stopped and replaced with more soothing and gentle pieces; if the elderly show a state of joy and relaxation, the playing time can be appropriately extended or fixed on this adapted piece. In addition, full respect should be given to the individual wishes of the elderly, allowing them to choose their favorite music freely. This can increase the elderly's enthusiasm for participating in the intervention. For example, some elderly people do not like classical music but prefer traditional operas. Then, operas can be integrated into the music therapy, which not only meets the elderly's preferences but also achieves the effect of assisting in rehabilitation. This flexible adjustment method can make the intervention effect more ideal^[5].

3.3. Reasonably introduce cutting-edge technologies to lower the application threshold

In response to the actual problems of insufficient funds and limited equipment in grassroots institutions, it is more practical to prioritize the introduction of those low-cost and easy-to-operate intelligent devices, such as simple AI music recommendation terminals and motion-sensing music players. These devices do not require complex settings, and medical staff or the family members of the elderly can master their use through simple guidance^[6]. Moreover, most of these devices can automatically recommend appropriate music based on the elderly's condition and music preferences, reducing the workload of manual intervention and significantly lowering the operational difficulty. Taking the AI music recommendation terminal as an example, an appropriate music library corresponding to different chronic diseases can be pre-entered. The staff only needs to input the elderly's condition information, and the device can automatically recommend suitable tracks. At the same time, it can continuously optimize the recommendation results based on the elderly's usage records. However, the recommendation accuracy of the device. At the same time, by leveraging remote medical technology, achieving the

linkage between music therapy and the physiological indicators of the elderly is also a good attempt. For example, through simple physiological monitoring devices, real-time monitoring of key physiological indicators such as heart rate and blood pressure of the elderly can be conducted, and these monitoring data can be transmitted to the music playback device. The device can automatically adjust the rhythm and volume of the music based on the changes in the data, ensuring the safety and effectiveness of the music intervention and avoiding physical discomfort caused by music stimulation. Additionally, considering that some elderly people have weak operational abilities, the operation interface of the device needs to be optimized. Using large fonts, simple buttons, and even setting a voice control function can make it convenient for the elderly to use independently. For example, the elderly only needs to say “play soothing music”, and the device can respond automatically. This humanized design can further reduce the operational difficulty for the elderly. In addition, using online platforms to promote family-based music therapy can also expand the coverage of music therapy. For example, developing a simple mobile app, entering a music library suitable for different elderly patients with chronic diseases in the app, family members of the elderly can use this app to select appropriate music based on the elderly’s condition and conduct music intervention at home. At the same time, the physical reactions of the elderly can be promptly fed back to the medical staff, facilitating remote guidance from the medical staff and achieving collaborative rehabilitation between medical institutions and families^[7].

4. Application results and prospects

Based on the practical experiences of various grassroots institutions, when implementing music therapy following the aforementioned approach, the rehabilitation indicators related to chronic diseases among the elderly have indeed shown positive changes. In community elderly care institutions, personalized music interventions for elderly patients with hypertension and diabetes have been carried out for about half a year. During the continuous tracking observation, the blood pressure and blood sugar control of many elderly people have become more stable, negative emotions have decreased, and their willingness to participate in rehabilitation has significantly increased, gradually shifting from passive participation to active involvement^[8]. Daily music and dance activities launched by some elderly care homes have also reduced the risk of falls among the elderly within the same period, and the quality of life-related scores have also improved. These real data can all demonstrate that music therapy has stable practical value. However, there are still differences in responses among elderly people from different regions and with different physical conditions, which also indicates that the plan still has room for further refinement. The current proposed implementation ideas also have limitations. The common problems in grassroots scenarios, such as insufficient funds and limited equipment configuration, make some new technical forms difficult to be fully rolled out. The cultivation of professional talents also requires a long period of time, and it is difficult to completely fill the talent gap within a short period of time. This is a reality that needs to be faced in actual implementation. As the domestic elderly care service system continues to improve, if more resources and technical support can be allocated to grassroots rehabilitation, the implementation path of music therapy will be smoother^[9]. Gradually integrating concepts such as VR immersive experience and neuroimaging-related auxiliary design into the plan can also make it more in line with modern rehabilitation needs and better serve the elderly with chronic diseases, providing support for healthy and quality elderly care. This field also looks forward to more researchers conducting detailed explorations based on the actual situation in grassroots areas, allowing theory and practice to continuously improve and promoting the stable application of music therapy on a larger scale^[10].

5. Summary

Against the backdrop of the continuous deepening of aging, chronic diseases among the elderly have become an indispensable part of primary health services. Music therapy, with its characteristics of manageable costs and high safety,

has shown unique value in the rehabilitation of elderly chronic diseases. It can not only alleviate physical symptoms but also improve emotional states and enhance the elderly's cooperation in rehabilitation. By analyzing the relevant population and chronic disease data by the end of 2025, it can be seen that the promotion of music therapy has practical significance. However, in the practical process, issues such as insufficient human resources, insufficient personalized matching, difficulties in implementing new technologies, and one-sided social cognition also exist in reality. This article focuses on key points such as talent development, personalized plans, and technology integration, and proposes specific measures aimed at adjusting and optimizing, filling in the shortcomings, strengthening integration with new technologies, and further expanding the application scope, in order to truly provide stable support for the rehabilitation of the elderly.

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