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Harmonizing Health: Exploring the Innovative Role of Vocal Music and Classical Piano in Treatment Modalities

Yilin Wan[1,*], Xinbei Shi[2]
[12]Dongguan City University, Dongguan, Guangdong, China, 523000
13305687391@163.com

Abstract

Vocal music and classical piano have proved to be effective in the modern medical practice as a powerful tool of music therapy targeting various health problems of physical, emotional, and cognitive nature. This systematic review looks at historical and cultural factors of these practices, the theories that undergird those practices and their use in the clinical practice. Vocal music which includes singing, chanting, and humming has been demonstrated to have positive impacts on the respiratory system, emotional aspect, and has therapeutic effects to anxiety and depression. Classical piano music due to its structured and rhythmic nature is recommended in motor rehabilitation, increasing cognitive function, and reducing stress levels.

In this article, we explore the synergies between both forms of treatment and present relevant case studies and clinical research supporting their effectiveness. Therefore, the combination of vocal music and classical piano in music therapy is synergistic as it improves the outcomes of the therapy by considering the body, mind, and spirit as a whole. The ways of implementing this and examples of multi-modal therapy programs are considered, with the focus on individual and flexible approaches.

However, there are some constraints that may be associated with the use of music therapy for example; availability of resources, training requirement and interprofessional working. For future research, possibilities are the examination of the long-term consequences of music therapy, the analysis of neurological processes during and after music therapy, use of new technologies, for example, virtual reality and biofeedback.

Thus, vocal music and classical piano therapy are powerful weapons in one's therapeutic armory, since they have an all-embracing positive impact on physical, emotional and psychological well-being. Thus, their inclusion into standard treatment packages may improve patient's condition, which is a strong argument for further development and funding of music therapy in clinical settings.

Introduction

Music therapy is a clinical practice and has empirical foundation with the purpose of achieving the client's predetermined objectives through musical methods within the context of a relationship

(Aydoğan, 2020). It entails the utilization of music to meet physical, emotional, cognitive as well as social requirements of a person (Gardstrom et al., 2022). The American Music Therapy Association describes music therapy as a "clinical and evidence-based process wherein music is used to facilitate the stated goals of the client within the context of a professional relationship by a music therapist who has completed an accredited music therapy training program" (McFerran, 2020, Gattino, 2021).

Music therapy has its roots from early human civilizations that associated music with the ability to heal (Silverman, 2022, Scrine, 2021). Even in the ancient world, such philosophers as Pythagoras and Aristotle considered music to be therapeutic, and Pythagoras even suggested the existence of "musical cure" for physical and mental diseases (Gouk, 2021). The Middle Ages saw music being incorporated in hospitals and monasteries as a way of treating the sick (Ritchey, 2021, Kieckhefer, 2021). The contemporary form of music therapy has been developed in the course of the twentieth century and especially after the Second World War, when musicians were performing for the wounded soldiers with physical and psychological injuries (Meinhart and Rogers, 2023, Seheda et al., 2024). These positive effects witnessed in these veterans paved way for the professionalization of music therapy with the beginning of educational programs and associations (Meinhart, 2021, Rogers, 2021).

Music is one of the most important aspects of human culture and has been employed for many years as a method of conveying feelings, narrating and unifying people (Uduak et al., 2020, Rehfeldt et al., 2021). It is a medium of communication that is not bounded by culture or language and hence is a very effective means of communication (Nixon, 2021, Desai-Stephens et al., 2020). Music has been used to affect mood, relieve stress, and induce relaxation, therefore it forms part of the of the complimentary therapies in health care (Lee et al., 2020).

As far as health is concerned, there are several physiological and psychological effects of music (De Witte et al., 2020b). It can increase the level of brain activity, develop the motor coordination, and even raise the level of intelligence (Terry et al., 2020, De Witte et al., 2022). Music therapy, more specifically, has been applied to treat various health problems of neurological, mental, and developmental nature (Brancatisano et al., 2020, Mayer-Benarous et al., 2021). Music therapy as an intervention assists patients in decreasing pain, lowering anxiety, enhancing their psychological condition, and increasing their quality of life (Tang et al., 2021). The appreciation of these benefits has therefore seen the inclusion of music therapy in different health care facilities ranging from hospitals and rehabilitation centers, schools, and community organizations (Lin et al., 2020, Contreras-Molina et al., 2021).

The aim of the current review is to examine the innovative uses of vocal music and classical piano in modern therapeutic approaches. Singing, chanting, and humming are all forms of vocal music while piano music is characterized by its classical and complex structure and has also been used in therapeutic practices for purposes of healing (Ghanai, 2023, La Roche, 2021). This review will

seek to look at how these forms of music are employed in various therapeutic contexts and the various health conditions that are treated.

Besides the discussion of the possible uses of vocal music and classical piano in therapy, this review aims to identify the processes that are responsible for the effects of music on health. Music is known to have various impacts on the brain and body by altering the neurochemicals, the brain activity and the physiological state. This review will therefore explore the psychological and biological processes that translate the therapeutic effects of vocal music and classical piano. Such knowledge helps to explain the approaches, which can be taken for enhancing the possibilities of music therapy and for individualizing the process.

Objectives

1. *Exploring the Role of Vocal Music and Classical Piano in Treatment Modalities*
2. *Understanding the Mechanisms Through Which These Forms of Music Impact Health*

Theoretical Foundations of Music Therapy

A. Psychological Theories

The Role of Music in Cognitive and Emotional Processing

Music is a strong tool in cognition and emotional regulation (Martín et al., 2021, Völker, 2021). It activates different parts of the brain that is related to feelings, memories, and movement. Cognitive processing of music refers to the brain's capacity to receive and analyze musical features including rhythm, melody and harmony (Kaleńska-Rodzaj, 2021, Hennessy et al., 2021). This intricate procedure engages the regions such as the auditory cortex, the prefrontal cortex, and the hippocampus that are involved in the processing of auditory stimuli, the executive control, and the memory storage, respectively (Blasco-Magraner et al., 2021, Peistaraite and Clark, 2020).

Psychologically, music can make people feel happy and excited or sad and nostalgic (Warrenburg and Science, 2020). The limbic system that is amygdala and nucleus accumbens is responsible for emotions and thus has a part to play in the response to music (Vuust et al., 2022, Reybrouck et al., 2021). These parts of the brain are responsible for emotions and rewards; therefore, music is a perfect way to manage emotions (Bonassi et al., 2023). Music may be used in a clinical context to alter mood and affect and assist individuals in acknowledging and working through feelings (Heiderscheit and Murphy, 2021).

Impact of Music on Mental Health Conditions Such as Anxiety, Depression, and PTSD

Music therapy has been found to be quite effective in conditions such as anxiety, depression, and PTSD (Abdulbaki and Berger, 2020). Studies have shown that music has an impact in lowering down the symptoms of anxiety since it leads to relaxation and has a way of lowering stress hormones (Ginsberg et al., 2022, Porshi and Sciences, 2020). Music can be listened to or made and it assists in reducing the flow of thoughts that cause anxiety (Moral-Bofill et al., 2022).

In the case of depression, music therapy helps improve mood and offer encouragement through music (Hartmann et al., 2023). Listening to music can trigger the production of neurotransmitters such as dopamine and serotonin that are related to pleasure and wellbeing respectively (Filimon, 2021). Research has shown that music therapy is as effective as some types of traditional therapy in decreasing the severity of depressive symptoms, thus proving to be a useful addition to conventional treatment (Erkkilä et al., 2021).

PTSD patients can benefit from music therapy because it is a nonverbal way to address traumatic events (Abdulbaki and Berger, 2020). Music can assist in controlling the emotional state and decrease the levels of hyperarousal that are typical for PTSD (Pant et al., 2022). Creative therapies, including singing and drama, enable the traumatized person to share his or her experiences with the trauma in a controlled manner and helps them to recover (Hakvoort et al., 2020).

B. Biological Mechanisms

Neurobiological Effects of Music on the Brain

Music is not only a source of pleasure but it also interacts with the brain through neurochemical processes (Mastnak, 2020b). A number of functional imaging studies have indicated that listening to music mobilizes almost all the brain's auditory, motor, and limbic regions (Altenmüller and James, 2020). These activations are linked with the processing of musical elements and the felt emotions (TITUS and Arts, 2021).

It has been discovered that music has a positive impact on neuroplasticity, which is the brain's capacity to alter its structure and function due to the creation of new neural connections (Olszewska et al., 2021). This is especially important in the rehabilitation facilities as music therapy assists in the restoration of the motor and cognitive skills that may have been affected due to neurological conditions (Zaatar et al., 2023). For example, rhythmic auditory stimulation has been applied in the rehabilitation of patients with Parkinson's disease and stroke in terms of gait and motor coordination (Wang et al., 2022, Ye et al., 2022).

Influence of Music on the Autonomic Nervous System and Endocrine Responses

Music impacts the ANS that controls the involuntary functions of the body such as the rate of heartbeat, blood pressure and rate of breathing (McCrary and Altenmüller, 2021). It was also found that the ANS activity could be influenced by the type of music being played (Mojtabavi et al., 2020). For example, background music that is slow and relaxing can stimulate the parasympathetic division thereby lowering the rate of heartbeat and blood pressure while fast and stimulating music can stimulate the sympathetic division to make the individual more alert (Mojtabavi et al., 2020, Parizek et al., 2021, Chatterjee and Mukherjee, 2020).

Another body system impacted by music is the endocrine system that is involved in the secretion of hormones in the body (Ramesh et al., 2022). Music has a way of affecting the hormone secretion; cortisol is a stress hormone and oxytocin, which is known as the love hormone because

it is involved in bonding and trust (Bowling et al., 2022). It has been found that cortisol levels are lowered in people who listen to relaxing music implying that it has a stress reducing impact (Saleem and Saleem, 2023, Tervaniemi et al., 2021). Higher levels of oxytocin, in contrast, can improve mood as well as facilitate therapeutic benefits such as social bonding (Itskovich et al., 2022). Figure 1 represents the overview of music therapy.

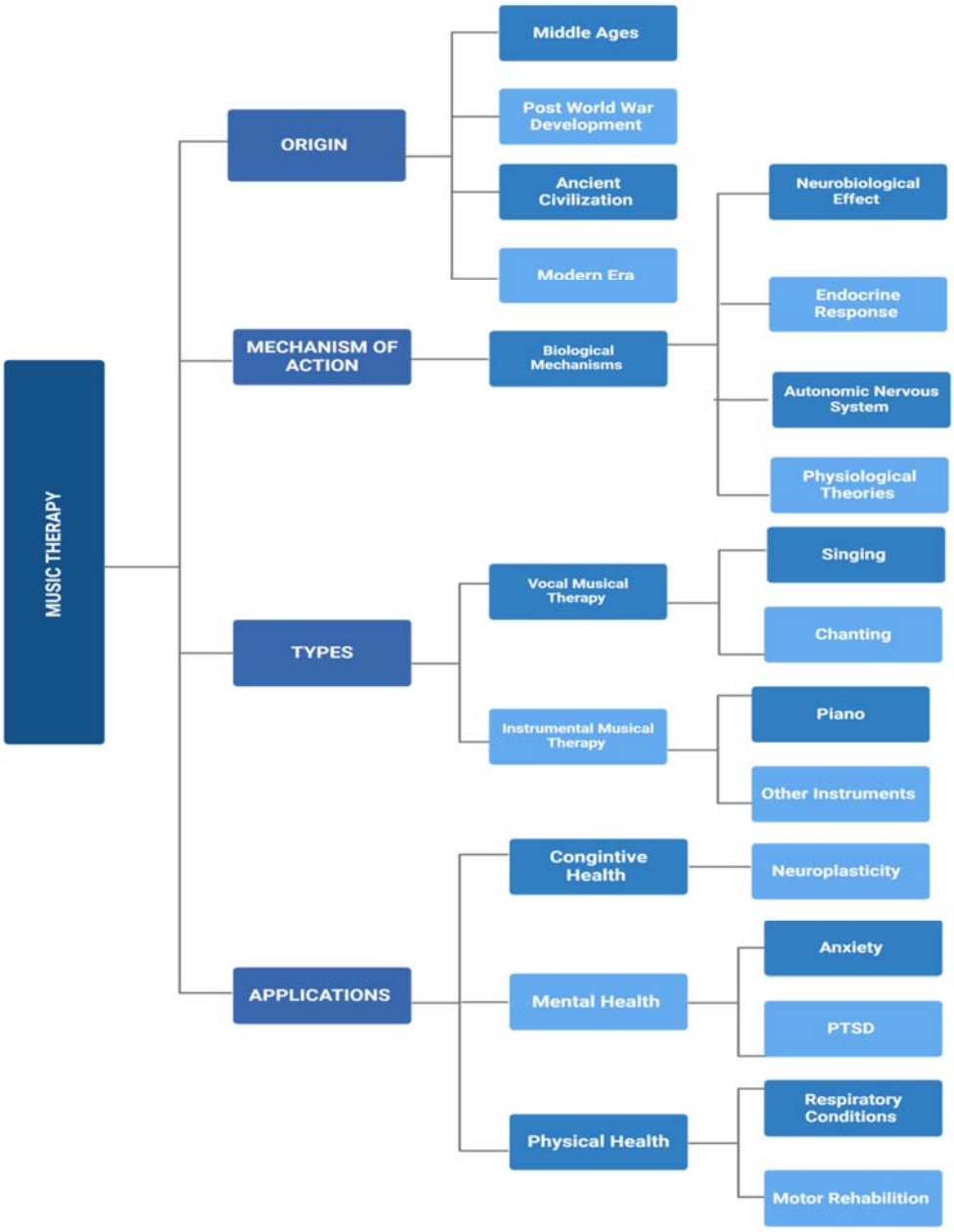

Figure 1 The Therapeutic Impact of Vocal Music and Classical Piano in Music Therapy

This figure illustrates the multifaceted benefits of incorporating vocal music and classical piano into music therapy practices. The diagram highlights key areas of impact, including emotional regulation, cognitive enhancement, social connection, and physical rehabilitation. Each section represents evidence-based outcomes derived from various studies, showcasing how these musical modalities contribute to holistic health improvements in diverse patient populations. The interconnectedness of these benefits emphasizes the importance of a comprehensive approach to music therapy, integrating both vocal and instrumental elements for optimal therapeutic results

Vocal Music in Treatment Modalities

A. Historical and Cultural Context

Traditional Uses of Vocal Music in Healing Practices Across Cultures

In so many cultures singing has been an essential part of invoking healing (Kohrt et al., 2020). For many indigenous people, vocal music is inseparable from the rites and ceremonies that are intended to restore people's health and well-being (Camlin et al., 2020). For instance, African tribes incorporate chanting and singing in their healing rituals in order to call upon the spirits and improve the healing of sick persons (Asare, Bojuwoye, 2020). Likewise, Native American tribes have incorporated vocal music in their therapeutic activities for generations, with the view that songs can open a door between the physical and spiritual realms, thus enable healing (Von Fritschen, 2021, Capello et al., 2022). Mantras are chanted in India for thousands of years to improve the mental health and physical conditions of a person (Pundir and Chauhan, 2023, Rastogi et al., 2020). These mantras which are chanted from scriptures are believed to contain spiritual energy that helps to cure and ward off diseases ailing the body and the mind (Rastogi et al., 2021) (Table 1).

Thus, vocal music was believed to have an extraordinary curative function in ancient Greece (Provenza and music, 2020). The ancients such as Pythagoras and Aristotle observed that music possessed curative properties and Pythagoras in particular, suggested the use of music to cure diseases of the body and mind (Ghanai, 2023). People of ancient Greece relied on specific musical scales and modes, Dorian and Phrygian included, to produce certain moods and to heal (Ustinova, 2021). The Gregorian chants, which originated in the Middle Ages, were also used in monasteries to enhance health and healing of the sick person, thus underlining the healing effects of vocal music (Groenewald, 2021).

Table 1: Historical and Cultural Uses of Vocal Music in Healing Practices

Culture/Region	Traditional Use of Vocal Music	Key Characteristics	Notable Practices
Africa	Healing ceremonies and rituals	Use of chanting and rhythmic singing	Shamanic healing chants
Native America	Spiritual and physical healing	Songs connecting physical and spiritual worlds	Vision quests, healing songs
India	Mental clarity and physical health	Chanting of mantras	Vedic mantras, Bhajans
Ancient Greece	Curative powers for physical and mental ailments	Use of specific musical scales and modes	Dorian and Phrygian modes, Pythagorean music therapy
Middle Ages	Spiritual and physical well-being	Gregorian chants	Monastic healing practices

Evolution of Vocal Music Therapy in Modern Medicine

The practice of vocal music therapy as an officially accredited practice of therapy started at the beginning of the twentieth century (Vest, 2020). After and even during the World War I and II, musicians used to go to the hospitals where the injured soldiers were admitted and perform for them (Bouchard, 2020). The changes that were observed in such veterans as reduced anxiety and improved mood contributed to the enhancement of scientific research regarding the use of music in therapy (Vaudreuil et al., 2022). The modern music therapy as a profession was only acknowledged in the 1940s and the first ever music therapy degree programs were developed in United States (Johnson, 2022). NAMT was established in 1950 to advance the cause of the use of music as a healing agent, thus adding more credibility to the field (Lindstrom, 2022, Morgan et al., 2020). Modern vocal music therapy is known and applied all over the world, and the number of articles, proving its effectiveness in medical and psychological practice, increases.

B. Techniques and Methods

Kinds of Vocal Music Employed in Therapy (Singing, Chanting and Humming)

Vocalizing also entails the use of voice to create musical pitches and notes (Bedoya et al., 2021). It is one of the most commonly used instruments in music therapy to address issues related to mood, respiration and emotional communication (Willmann, 2022). Singing can be conventional,

for instance, singing specific songs, or free, which makes it possible to let out specific feelings at will (Tursunbaevna, 2021). Meditation through chanting is common and can be described as the vocalization of sounds, syllables, or words to help focus, relieve stress, and enter a meditative state (Perry et al., 2022). It is used in chanting practices in Buddhism and Hinduism among other religions and cultures (Lee, 2021). Whistling, which is the act of making a continuous sound with the mouth shut, is used to calm the mind, relieve stress, and activate the vagus nerve, which is involved in the parasympathetic system (Baldwin, 2023) (Table 2).

Table 2: Techniques and Methods in Vocal Music Therapy

Technique	Description	Applications	Benefits
Singing	Producing musical tones and melodies using the voice	Emotional expression, mood enhancement	Improved respiratory function, emotional release
Chanting	Repetitive vocalization of sounds, syllables, or words	Inducing meditative states, reducing stress	Enhanced concentration, stress reduction
Humming	Producing continuous resonant sounds with mouth closed	Promoting relaxation, stimulating vagus nerve	Relaxation, reduced anxiety
Interactive Sessions	Engaging clients in call-and-response singing or vocal improvisation	Cognitive and motor skill improvement	Increased engagement, cognitive stimulation
Personalized Playlists	Creating individualized music playlists for therapy	Emotional and cognitive support in daily routines	Tailored emotional support, enhanced therapy adherence

Methods of Integrating Vocal Music into Therapeutic Settings

Vocal music can be introduced into therapeutic processes by using individual and group therapy (Low et al., 2020). Vocal music in individual therapy involves singing and is done in a way that is unique to the client, with the interventions being developed to address the client's therapeutic plan (Bingham et al., 2022). For example, singing as a form of interpersonal communication can be employed in therapy to enable clients to vocalize feelings, regain articulation or decrease stress (Durham, 2023). Singing or chanting is also another way of making the group therapy session to be more effective in that it helps people in a group to have a feeling of togetherness and support from one another (Simpson et al., 2021). These sessions are usually exercised in mental health

facilities, schools, and community centers to promote socialization and people's mutual well-being (Cefai et al., 2021). Call-and-response singing, vocal improvisation, and songwriting are the best examples of an interactive approach to music therapy since it requires the listener's response in the form of singing, creating, and emotional expression (Mondanaro and Nicholas-Curnutte, 2023, Martin, 2020).

C. Clinical Applications

Case Studies and Clinical Trials on the Effectiveness of Vocal Music Therapy

Many examples and clinical evidences prove the applicability of vocal music therapy in different therapeutic settings. For instance, Lewis et al., (2021) (Lewis et al., 2021) revealed that singing interventions enhanced lung capacity and life of COPD patients. The activities included singing sessions, and the results were positive, seen in better lung capacity and general health. Wulff et al., (2021) (Wulff et al., 2021) also showed that group singing decreased postnatal depression in new mothers as a result of the intervention. The study also revealed that vocal music therapy could be of great importance in giving mothers with depressive symptoms emotional support as well as facilitating social relatedness.

Another case of a patient who suffered from a stroke also proved beneficial when the singing therapy was applied in the improvement of the speech and language functions (Xu et al., 2022). The patient who had become an aphasic was encouraged to sing songs and since songs are usually sung with words, familiar songs were used to stimulate the language areas of the brain (Sihvonen et al., 2021). In the course of the therapy, the patient was noted to have made significant progress in terms of verbal communication thus supporting the use of vocal music therapy in neurorehabilitation (Sihvonen et al., 2020).

Special Conditions Treated by Vocal Music

Vocal music therapy has been applied to treat several diseases such as speech disorders, respiratory diseases, and mental and emotional problems (Chai and Medicine, 2023). For people with speech and language impairments for example stuttering and aphasia singing and rhythmic vocal practice is effective in enhancing the fluency of speech and the manner of articulation (Behaghel and Zumbansen, 2022). Singing and humming exercises can also be very effective in patients with respiratory diseases such as asthma and chronic obstructive pulmonary disease because they help to build up the strength of the muscles used in breathing and help to control the breath (Lewis et al., 2021, Kim et al., 2023). Vocal music therapy can also help in handling of other psychological disorders such as anxiety, depression, and PTSD (Abdulbaki and Berger, 2020). Singing and chanting help in the relaxation of the mind, expression of feelings and foster social interaction and hence are beneficial to mental health (Malviya et al., 2022).

Classical Piano in Treatment Modalities

A. Historical and Cultural Context

The Significance of Classical Piano in Music Therapy History

The classical piano has been widely appreciated for it's powerful, emotive timbre and the influence it has on the performer and the audience (Li, 2020). Its relevance to music therapy can be attributed to the early twentieth century when the possibilities of using music for the purpose of treatment began to receive scientific attention (Leech-Wilkinson, 2020). Thus, the concept of music therapy was mostly associated with the performance of the composition on a classical piano, having a clear structure and successfully conveying the emotions of the performer (Skoogh, 2021). The compositions of the such musicians as Johann Sebastian Bach, Ludwig van Beethoven and Frédéric Chopin are often employed in therapeutic practices because of the positive impact on mood and cognition (Halliday, 2022, MAHIR'S and GURCAN, 2023).

It is also worth mentioning that during and after World War II, people listened to classical piano music for the purpose of the treatment of physical and psychological wounds (Baumgartner and Boczkowska, 2020). The practicality of the structure of the classical music was helpful to those who were going through turmoil of war as it gave some sort of order in the world (Leech-Wilkinson, 2020). Throughout the decades, the application of piano music in therapeutic processes increased, and music therapy became an official branch of study (Kim, 2021). Today, such type of music as classical piano remains the foundation of music therapy, which helps to solve various problems associated with physical, emotional, and cognitive spheres (Sydykova et al., 2020).

The Use of Piano by Noted Pianists in the Delivery of Effective Therapeutic Practices

Some of the well-known pianists have contributed to the formation of music therapy practices (Suzuki, 2020). For instance, the world famous pianist and conductor of the orchestra, Daniel Barenboim has stressed the positive role of the classical music in many of his public speeches and educational programmes (Beckerman and Boghossian, 2021). Through his work, he has focused on the emotional and cognitive aspects of music, and thus his work has helped to change therapeutic practices in many countries (Yang, 2023). Likewise, advancements in the field by pianist and neuroscientist Dr. Gottfried Schlaug have contributed to the understanding of the neurological effects of piano music and its effectiveness in increasing the brain's plasticity and recovery of stroke victims (TITUS and Arts, 2021, NELSON).

B. Techniques and Methods

Specific Classical Pieces Commonly Used in Therapy

Some of the most preferred genres in therapy are classical pieces because they help patients feel more relaxed and inspired (Hu et al., 2020). For example, the "Well-Tempered Clavier" by Johann Sebastian Bach is played for its organization and its calming effect on the mind and reduction of anxiety (Rosen and Temerson, 2020). The next piece is classical music, more specifically Ludwig van Beethoven's "Moonlight Sonata" which is effective in producing strong emotional reactions and helps with emotions regulation (Kukiełczyńska-Krawczyk). Chopin's Nocturnes are employed

to facilitate the patient's verbalization because of its beautiful and even sad melodies (Rothstein, 2020).

Strategies for the Integration of Piano Music to Therapy Plans

Piano music in the classical genre can be used in the following methods in therapeutic practices (Mastnak, 2020a). Music played by a therapist using the piano; or recorded music can be used to create a soothing atmosphere and improve the subject's condition, mood and stress level (De Witte et al., 2020a). When patients are encouraged to play the piano, whether just making up tunes or following the music score, motor, cognitive, and affective benefits may be derived (Grau-Sánchez et al., 2020). Moreover, listening sessions where the patient participates actively in listening to the music, can help in the cognitive and emotional working through of the material, offering the patient an avenue for non-verbally expressing feelings and thoughts (Espinoza, 2020).

C. Clinical Applications

Case Studies and Clinical Trials on the Use of Classical Piano Music

A large amount of case studies and clinical trials proved the efficacy of classical piano music in different therapeutic settings. For instance, Baylan et al., (2020) (Baylan et al., 2020) attempted to determine the effects of listening to music on stroke patients. This study revealed that patients who listened to classical music daily had improvement in their verbal memory and focused attention compared to the other patients. This proves the implication of classical piano music in the rehabilitation process of cognitive injuries resulting from neurological traumas.

A study by Du, (2021) (Du, 2021) examined the effect of the classical piano music on patients with depression. The authors of the study also noted that the participants who listened to the classical piano music had lower levels of depression along with enhanced mood and general emotional state. This implies that, classical piano music can complement the conventional depression treatments.

A clinical case of patient with Alzheimer's disease proved the effectiveness of classical piano music in cognitive impairment. The patient had memory loss and confusion; however, he engaged in piano music therapy on a daily basis. After sometime the patients' cognitive abilities improved, moods became more stable, and the patients' level of activity was also boosted. This paper describes the importance of performing classical piano music for the improvement of cognitive and emotional well-being of patients with neurodegenerative disorders (Eftychios et al., 2021).

Conditions Positively Impacted by Classical Piano Music

Research has indicated that classical piano music has benefits on different health issues such as; Alzheimer's disease, stress, and motor disability (Nikkhah Bahrami et al., 2024, James et al., 2020). During piano music therapy, it is possible to improve memory and mood, as well as increase cognitive abilities in patients with Alzheimer's disease and other forms of dementia (James et al., 2023). In cases of stress, listening to or even playing classical piano will cause the stress hormone

cortisol to decrease and the body will relax (Wong et al., 2021, Chou, 2021). In rehabilitation environments especially for stroke and traumatic brain injury patients, piano music therapy can help in the development of fine motor control, coordination, attention and memory (Martínez-Molina et al., 2022).

Comparative Analysis: Vocal Music vs. Classical Piano

A. Similarities in Therapeutic Effects

Shared Mechanisms and Benefits

It has been shown that vocal music and classical piano have equally proven to have therapeutic benefits and in most cases, the benefits stem from similar pathways (Brancatisano et al., 2020). One of the similarities that can be made is that both music and odors can control present feelings and affective states (Kontaris et al., 2020, Di Stefano et al., 2021). Both of them can be effective in producing relaxation, the reduction of stress and the improvement of the overall mood (Baccarani et al., 2021). This is largely due to their capacity to alter neurochemical processes including up-production of dopamine and serotonin, which are chemicals that make people feel happy (Hofer et al., 2020). Furthermore, vocal music and classical piano are known to decrease cortisol level hence exercising a stress-reducing effect (Feneberg et al., 2020).

In addition, both types of music therapy activate several parts of the brain concerned with feelings, recollections, and movement (Brancatisano et al., 2020). These widespread activations enhance the cognitive functions including memory, attention and executive functions. For instance, listening to or interacting with either form of music can elicit neuroplasticity, which can improve the brain's capability to create new neural networks and heal from injuries or degenerative diseases (Speranza et al., 2022). Figure 2 represents the specific applications of classical piano and vocal music in therapy.

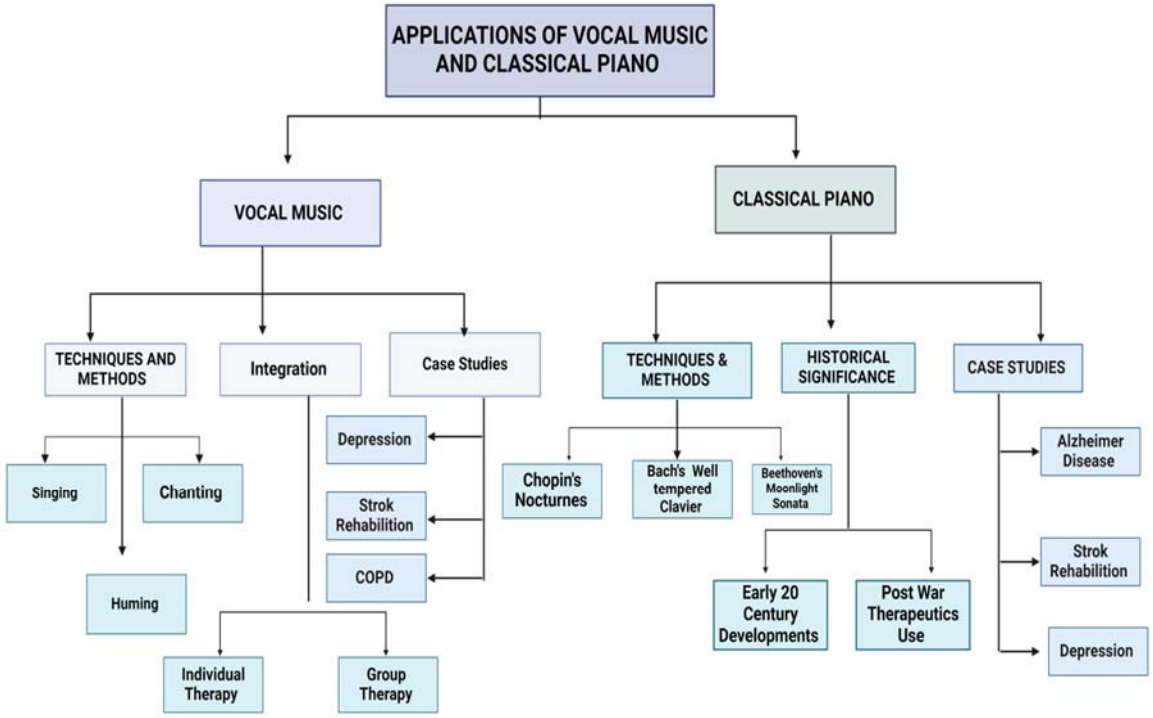

Figure 2 Specific Applications of Vocal Music and Classical Piano in Therapy

This figure outlines the underlying mechanisms through which vocal music and classical piano exert their therapeutic effects in music therapy. It illustrates key processes such as neurochemical changes, physiological responses, and emotional engagement that occur during music therapy sessions. Each mechanism is supported by research findings, demonstrating how these musical modalities facilitate improvements in mental health, cognitive function, and physical rehabilitation. The diagram emphasizes the importance of understanding these mechanisms to enhance the effectiveness of music therapy interventions and tailor them to individual patient needs.

B. Differences in Therapeutic Approaches

Unique Aspects of Vocal Music Versus Classical Piano

Even though vocal music and classical piano belong to the same genre of music, they differ in therapeutic intervention and outcome (Krause et al., 2020). Vocal music therapy can be characterized by the focus on the communicative and expressive functions of music (Bingham et al., 2022). Singing, chanting, and humming can be seen as the direct forms of emotional release and may be especially helpful for the people with limited speech abilities (Perry et al., 2023).

Speaking through the voice also has other effects on the body's physiology, for example, strengthening the voice and respiratory system (Seikel et al., 2023).

On the other hand, the classical piano therapy is more inclined towards the rhythm and structures of the musical instrument (Dănciulescu and Zaharia, 2023). Since piano playing entails the use of hands and fingers, it can help in motor rehabilitation of persons who have had strokes or other neurological problems (Grau-Sánchez et al., 2020). The act of reading music and moving the hand also requires the brain to focus, to remember and to plan and thus is helpful in the rehabilitation of the brain (Grau-Sánchez et al., 2020) (Table 3).

Table 3: Comparative Analysis of Vocal Music and Classical Piano Therapy

Aspect	Vocal Music Therapy	Classical Piano Therapy	Combined Approach
Emotional Expression	Direct outlet through singing and chanting	Reflective emotional experience through listening	Enhanced emotional release and processing
Motor Skills Rehabilitation	Less direct impact on fine motor skills	Significant improvement in motor coordination	Comprehensive motor rehabilitation
Cognitive Function	Improvements in speech and language skills	Enhanced memory, attention, and executive function	Holistic cognitive enhancement
Stress Reduction	Immediate relaxation through vocal exercises	Calming effects of structured piano music	Synergistic stress reduction
Patient Engagement	Active participation in vocal activities	Engagement through playing and listening	Increased overall patient engagement

Challenges and Future Directions

A. Barriers to Implementation

Practical Challenges in Integrating Music Therapy in Clinical Settings

The use of vocal music and classical piano in clinical practice raises several pragmatic considerations regarding the application of music therapy. There is still a limitation in the number of qualified music therapists who can be employed to provide the therapy (Nelligan and McCaffrey, 2020). Music therapy is a profession that needs formal education and certification, and there is usually a scarcity of qualified personnel, particularly in the rural or remote regions (Korioth

and Silverman, 2023). This hampers the delivery of music therapy services to many patients who need it.

Another issue is the problem of integrating music therapy and its practical application into healthcare organizations in terms of both organizing and funding. Some of the challenges that may be encountered by hospitals and clinics include; financial constraints in providing resources for music therapy programs (Vaudreuil et al., 2022, Silverman, 2022). Furthermore, the identification of proper facilities that have instruments like pianos can be quite challenging. Other costs that go into the operation include the costs of maintaining and tuning pianos and other musical instruments (Komleva and Sychkov, 2024).

Professional and Training Issues for Therapists

Music therapists have to complete courses to learn how to effectively use their voice and the piano to heal (Carter, 2024). This includes not only musical skills but also knowledge of psychological theories, methods of treatment, and the need to address patients' individual characteristics and preferences (Carter, 2024). Subsequently, the therapists have to undertake their further education and training to update themselves with the current research and development.

Also, music therapy needs to be combined with other forms of treatment, which implies the need for cooperation with other specialists, which can be difficult. The medical personnel may not sometimes appreciate the music therapy or even know how it can be incorporated in the treatment plan. In this case, it is essential to raise awareness among the healthcare providers regarding the impact of music therapy and to establish partnerships (Brancatisano et al., 2020, Agres et al., 2021).

B. Research Gaps and Future Studies

However, there are several areas in relation to the use of vocal music and classical piano in therapy that needs further research. One of the research areas is the impact of music therapy on different health related issues in the long run. This is a major limitation as most studies provide information on short-term effects of music therapy while little is known on the long-term effects on patients' physical, cognitive, and emotional well-being.

Another important area is the process of determining concrete channels by which music influences patients and provides therapeutic benefits. It is a fact that is well established that music affects the neurochemical and physiological changes but the mechanism by which these changes occur is not fully understood. Studying such mechanisms may improve the effectiveness of therapeutic approaches and adjust them according to the client's characteristics.

Also, there is a dearth of high-quality, large-scale RCTs to support the efficacy of music therapy more conclusively. Such studies can offer strong evidence for including music therapy as an essential part of the standard treatment protocols.

Conclusion

In this extensive literature review, the emerging use of vocal music and classical piano in the different approaches of treatment is highlighted. Studies have shown that both approaches to music therapy have evidenced therapeutic value across all domains of human functioning, such as cognitive, emotional and physical. Singing, chanting, and humming have been beneficial in the strengthening of the respiratory muscles, improvement of vocalization, and the decrease of anxiety and depression symptoms. Therefore, music which is in a classical piano style that has a structured and rhythmic pattern has been useful in motor rehabilitation, cognitive improvement, and stress relief. These two modalities complement one another, providing a more global approach to the therapy, as each modality's strong side is used to compensate for the weaknesses of the other.

The findings of the therapeutic effects of vocal music and classical piano have implications for the healthcare service deliverers and therapists in the following ways. First, the application of music therapy as one of the treatments in the patient's plan can improve the results for different diseases. For instance, singing exercises for patients with speech pathology or classical piano music for improving cognitive skills in neurodegenerative disorders are very useful. Secondly, the teams that work on the projects should be inter-disciplinary. Awareness raising and training of medical practitioners on the benefits of music therapy and developing collaborations between music therapists and other medical personnel and carers can promote music therapy for improved patient-centered care. Also, it is crucial to provide the necessary conditions for training and professional development of music therapists and provide them with the resources and instruments needed to carry out the therapy.

The role of music in medicine is quite extensive and could be of great help in many ways. Vocal music and classical piano are two forms of music that can provide specific and synergistic relaxation and healing to a person's self. Thus, it is necessary to discuss modern problems and future developments in the field of music therapy. Technological developments such as virtual reality and biofeedback were said to be useful in enhancing the quality and interactivity of music therapy. Moreover, future studies can enhance the knowledge of the processes through which music might have a positive impact on patients, thus improving the methods of treatment.

Therefore, the combination of vocal music and classical piano into the therapeutic practices is a strong weapon that can improve physical, emotional, and cognitive well-being. Thus, incorporating the humanistic and integrative elements of music therapy into the care of patients can improve the healthcare outcomes and better serve the patients' needs. The advancement and research in this field will certainly go on and open more possibilities and uses, thereby establishing the place of music in the current practice of medicine.

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