

## The creation of music therapy for stress, using different style of piano playing analysis

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**Abstract:** This study explores the therapeutic potential of piano music for alleviating depression and stress, emphasizing the importance of personalized compositions in enhancing emotional well-being. Depression, a prevalent mental health condition, significantly impacts individuals' daily lives. While traditional treatments like medication and psychotherapy remain crucial, non-invasive approaches such as music therapy offer complementary benefits. Three original piano compositions were created to evoke distinct emotional responses—liveliness, passion, and soothing calmness. Professional evaluations from medical experts highlighted the therapeutic effects of these compositions, with the third piece, characterized by its tranquil rhythm, receiving the highest satisfaction. The findings demonstrate that piano music can activate positive emotions, reduce psychological stress, and foster relaxation, providing a unique emotional outlet for individuals experiencing depression. This study underscores the importance of tailoring music therapy to individual preferences and emotional needs. Moreover, integrating piano music into mental health interventions could enhance traditional therapeutic methods. Recommendations include further research on evidence-based applications of music therapy, training programs for therapists, and collaborative efforts between music professionals and mental health practitioners. By leveraging the emotional and psychological benefits of piano music, this approach offers a promising supplementary treatment for improving mental health outcomes.

**Keywords:** Depression, Music therapy, Piano music, Stress, University students.

### 1. Introduction

The state of anxiety and depression pertains to a psychological condition where an individual encounters a constellation of persistent negative emotions, including worry, fear, and sadness, along with accompanying physiological and psychological manifestations, when confronted with pressure or challenging circumstances. It manifests through enduring symptoms such as persistent feelings of sadness, loss of interest, disruptions in sleep patterns, decreased appetite, self-blame tendencies, diminished concentration, and a pervasive sense of hopelessness. Moreover, individuals grappling with stress or depression often experience additional atypical symptoms that significantly impact their daily routines. Distinguishing itself from typical emotional fluctuations, depression manifests nearly every day and persists for a substantial portion of the day, typically lasting for a minimum of two weeks. This intricate disorder stems from a myriad of factors, encompassing psychological, social, and biological elements, culminating in a multifaceted etiology. In essence, depression or stress represents a complex condition necessitating a comprehensive understanding of its multifaceted origins and manifestations. Various factors such as family heredity, living environment, upbringing, individual personality traits, and life experiences are intricately linked to the development of either depression or stress. Presently, clinical approaches to treating depression or stress encompass both pharmacological and non-

pharmacological interventions. In certain cases, psychological therapies are combined with antidepressant medications or stress-reducing agents, particularly for moderate to severe presentations. However, pharmaceutical treatments can be costly, efficacy is contingent upon patient adherence, and they often entail a range of adverse effects that can compromise the individual's physical well-being. Conversely, non-pharmacological interventions, including cognitive behavioral therapy, mindfulness exercises, and other modalities, have demonstrated efficacy in alleviating symptoms of depression or stress. These non-drug interventions offer a sustainable, cost-effective, and holistic approach to psychotherapy, promoting mental well-being in a natural and environmentally friendly manner [1-4]. Music therapy, a burgeoning non-pharmacological intervention, represents a dynamic fusion of various disciplines, including medicine, art, and education, to create a holistic approach to healing and well-being. This structured intervention process involves therapists harnessing a diverse array of musical experiences and therapeutic connections developed throughout treatment to propel patients towards their health objectives. Within the realm of music therapy, a multitude of modalities exist, ranging from active engagement to passive immersion in musical activities, with passive listening emerging as the predominant method in clinical settings due to its accessibility and effectiveness. Extensive research has underscored the myriad positive effects of music therapy on a spectrum of psychological and physiological conditions. Studies have elucidated how distinct musical genres and compositions can modulate individuals' psychological states, offering relief from stress, eliciting profound emotional responses, and serving as a potent tool in addressing psychological challenges. Moreover, music therapy stands out as a novel and impactful rehabilitation strategy, demonstrating notable efficacy in ameliorating symptoms of depression or stress within specific demographic groups, showcasing its potential as a transformative and beneficial therapeutic modality in mental health care [5-7]. However, despite the promising results of music therapy in improving those symptoms, there remains a notable gap in research regarding the optimal style of music for effectively alleviating such symptoms in distinct groups of those individuals. The exploration of how different musical genres, rhythms, and tones impact various populations with depression is an area that warrants further investigation. Understanding the nuanced interplay between music and mental health conditions, such as depression, can provide valuable insights into tailoring music therapy interventions to cater to the diverse needs and preferences of individuals experiencing depressive symptoms. By delving deeper into the specific musical elements that resonate most with different groups of depression patients, researchers and practitioners can refine and personalize music therapy approaches to enhance their therapeutic efficacy and ultimately contribute to more targeted and impactful treatment outcomes.

College students, as a special group, are considered as the main pillar of social reconstruction and progress. More than that, they are also of great significance for the long-term development of the country. However, what we need to notice is that college is not only the most dynamic and golden stage in life but also the stage of active thinking. In college, the students have not yet been fully mature psychologically and physically. As data display, this period (usually refers to 17-24 years old) can be the peak period of mental disorders [8]. If the pressure from academic studies, interpersonal relationships, employment and many other aspects cannot be released in a timely manner, some students will experience emotional fluctuations and even feel anxious or depressed. According to some research, one-third of college students have experienced or are experiencing serious mental health problems [9-11] and suffer from higher levels of anxiety and depression [12]. In a survey conducted in China, the researchers showed that 6.6% of college students who age from 19 to 22 are at high risk of suffering from depression. Especially during the past three years of epidemic prevention and control, due to many reasons such as closed management of educational institutions or delayed school opening, the COVID-19 pandemic has had adversely affected college students' psychological well-being and health [13]. The presence of depression and stress can bring a lot of short/long-term negative effects to students and even affect their whole life. For example, adverse impacts mentioned above include poor academic performance, problems in physical health, drug abuse and suicide or self-harm [14-16]. Therefore, it is crucial to promote mental health and prevent these mental disorders among college students.

There are many different types and styles of music and piano music is just one of the many ways of music therapy. Piano, as one of the most common instruments in society, is widely loved and welcomed. Piano is an instrument that combines roles such as solo, ensemble and accompaniment. Among all those musical instruments, piano songs are characterized by a wide range of notes, a loud voice, and rich variations in timbre and intensity. Because of its wide acceptability and popularity, piano has been utilized as a common treatment method in many clinical aspects. Numerous studies have verified that listening to piano music has certain positive impact on depression and stress symptoms in patients [17-19].

As is well known, a complete piece of music consists of many indispensable elements. An excellent musical work can reflect the creator's psychological journey, the story behind it, the creative context, and even a period of historical and cultural background. Generally speaking, the important components of a piece of music include its tempo, key, time signature, harmony, rhythmic, style, duration, melody, pitch and so on. Different styles of music can stimulate different emotions and emotional reactions, which can be used in different conditions (soothing, relaxing, inspiring, motivating, etc.). For example, piano pieces with a light rhythm may make people feel happy and relaxed. Music with a passionate melody may have an uplifting and encouraging effect, while sad music may actually cause listeners to feel down. Some soothing and relaxing piano music can usually alleviate patients' tense emotions, improve their symptoms of emotional distress, and make them feel happy both physically and mentally.

Depression and stress is very common in contemporary life, and the first purpose of our research is to understand the current situation of depression among college students majored in music and to some extent understand their symptoms and underlying causes of depression. Besides, on the basis of published literature, we find that the style of piano pieces selected in most domestic or foreign studies is classical. Some studies believe that slower rhythm music can inhibit the sympathetic nervous system and induce relaxation Chen and Hawkins [5] while there are few studies on the effects of piano music with different styles on patients with depression. Therefore, we intend to understand what songs those college students prefer through a survey questionnaire and further ask professional doctors to recommend several songs for treating depression. After a comprehensive analysis of the style characteristics of these pieces, we will compose 3 piano songs suitable for depression patients. Next, we will ask the professional doctors whether they are satisfied with our original songs and ask for their opinions. In one word, our research is based on an understanding of the basic situation of depression among college students. And the most important, our study also aims to finally create 3 songs that might be used in future music therapeutic studies.

### 1.1. Objectives

1. To study symptoms and causes of depression.
2. To analyze the different styles of piano playing for music therapy.

## 2. Literature Review

### 2.1. Current Therapies for Depression and Stress

In the current landscape of mental health treatment, medication remains the predominant clinical approach for managing depression or stress [20]. Conventional antidepressants, such as tricyclic antidepressants, are commonly recommended by healthcare providers following a comprehensive assessment of the patient's unique background, encompassing factors like medical history and financial constraints. Despite their efficacy in offering short-term symptom relief, extended use of psychotropic medications can introduce significant challenges [21-23]. Prolonged reliance on these drugs has been linked to the onset of adverse metabolic reactions, which can manifest as weight gain, changes in blood sugar levels, and alterations in lipid profiles, potentially compounding the individual's mental health concerns. Furthermore, the impact of psychotropic medications on circadian rhythms is a critical consideration, as disruptions to the body's natural sleep-wake cycle can exacerbate symptoms of depression and anxiety, leading to increased fatigue, irritability, and cognitive impairment. These

complexities underscore the need for a nuanced approach to medication management in mental health care, emphasizing close monitoring, regular reassessment, and a holistic treatment plan that integrates pharmacological interventions with complementary therapies to optimize patient outcomes and minimize potential risks associated with long-term drug use. Moreover, the financial burden associated with medication, including high costs and insurance limitations, can pose significant barriers to access for individuals seeking treatment for mental health conditions. The intricate administration procedures and dosing schedules of psychotropic drugs can further complicate adherence, as patients may struggle to maintain consistent medication routines due to forgetfulness, side effects, or logistical challenges. This lack of adherence can diminish the therapeutic benefits of pharmacological interventions, leading to suboptimal outcomes and potentially exacerbating symptoms of depression and anxiety. Additionally, the centralized control over medication prescription and management by a restricted cadre of healthcare professionals can contribute to disparities in care delivery, particularly for marginalized communities and underserved populations who may face obstacles in accessing specialized mental health services. Recognizing these limitations, there has been a notable shift in focus among researchers towards exploring non-pharmacological modalities for the treatment of mental disorders, driven by a growing recognition of the need for holistic, patient-centered approaches that prioritize individual preferences, cultural considerations, and the integration of diverse therapeutic techniques to enhance overall well-being and mental health outcomes. Various non-drug therapies, such as cognitive behavioral therapy, Morita therapy, mindfulness training, interpersonal psychotherapy, multi-sensory stimulation, and art therapy, have emerged as promising interventions for addressing depression and stress. Research indicates that these non-pharmacological modalities are effective in enhancing mood regulation and addressing behavioral challenges in individuals with depression, offering a holistic and personalized approach to mental health care that complements traditional medication-based treatments [24-27]. Especially for patients with mild symptoms, non-drug treatment can avoid the side effects and dependence caused by drugs. Because music has high acceptability and practicability among college students, this study will mainly evaluate the effect of music on depression or stress of college students [28-30].

## 2.2. Music Therapy

Music, as an intricate artistic form and cultural activity, encompasses a diverse array of abstract elements such as rhythms, melodies, harmonies, and vocal or instrumental sounds that collectively evoke emotions, convey narratives, and reflect the complexities of human experiences. Through organized musical compositions, individuals can find a means of articulating their innermost thoughts, emotions, and cognitive processes, thereby serving as a powerful medium for self-expression and communication. Music holds a profound significance in various societies worldwide, playing a pivotal role in shaping identities, fostering social connections, and preserving cultural traditions across generations. Within the realm of healthcare and wellness, the practice of music therapy has emerged as a dynamic interdisciplinary field that integrates principles from art, medicine, psychology, and education to harness the therapeutic potential of music beyond its aesthetic and entertainment value. Originating in China in 1980 and further refined through global collaborations and scholarly contributions, the contemporary definition of music therapy, as articulated by Professor Brucia from Temple University in the United States, emphasizes the strategic use of diverse musical forms and techniques within a structured therapeutic framework to facilitate healing, personal growth, and the attainment of health-related objectives. This holistic approach to treatment underscores the importance of the therapeutic relationship between the music therapist and the individual receiving care, serving as a catalyst for positive change and empowerment in the journey towards improved well-being and holistic health outcomes [31-33]. In essence, music therapy encompasses a multifaceted approach that leverages the transformative power of music across diverse genres, styles, and modalities to modulate emotions, enhance cognitive functioning, and promote mental well-being, ultimately serving as a therapeutic tool for addressing a wide range of physical, emotional, and psychological conditions. By harnessing the

inherent expressive qualities of music, therapists can tailor interventions to meet the unique needs and preferences of individuals, facilitating emotional regulation, stress reduction, and the cultivation of positive mental states. Through structured music-based activities, such as listening, singing, playing instruments, and improvisation, music therapy aims to create a supportive and engaging environment that encourages self-expression, fosters interpersonal connections, and facilitates the exploration of inner thoughts and feelings. This dynamic process of musical engagement not only provides a creative outlet for emotional release and self-discovery but also offers a nonverbal means of communication that transcends linguistic barriers, making it particularly effective for individuals with communication disorders or those who may struggle to articulate their emotions verbally. By integrating music into therapeutic interventions, practitioners can tap into the profound emotional and psychological impact of music, harnessing its potential to promote healing, enhance self-awareness, and facilitate personal growth in the journey toward holistic wellness and recovery.

### *2.3. Types of Music Therapy*

The field of music therapy is a rich tapestry woven from a diverse array of disciplines, encompassing a wide spectrum of sophisticated application areas and drawing upon a multitude of academic schools and theoretical frameworks. Within this dynamic landscape, music therapy is intricately intertwined with various fields such as psychology, neuroscience, musicology, education, and medicine, each contributing unique perspectives and methodologies to the practice and study of music therapy. This interdisciplinary nature of music therapy underscores its versatility and adaptability, allowing practitioners to tailor interventions to meet the specific needs and goals of individuals across different age groups, cultural backgrounds, and clinical conditions. Moreover, the practice of music therapy is often categorized into distinct modalities based on the widely accepted classification method, which includes reception, improvisation, and recreation. Reception-based approaches involve passive engagement with music through listening or guided imagery, allowing individuals to absorb and respond to musical stimuli in a reflective and contemplative manner. Improvisation-based techniques encourage active participation and spontaneous musical expression, fostering creativity, self-expression, and interpersonal communication. Recreation-based activities focus on structured musical experiences, such as singing, playing instruments, or composing music, aimed at promoting skill development, social interaction, and emotional expression. By embracing these diverse modalities and drawing upon a rich tapestry of theoretical perspectives, music therapy practitioners can create tailored interventions that resonate with the unique needs and preferences of each individual, harnessing the transformative power of music to promote healing, personal growth, and holistic well-being.

Reception music therapy is also known as the listening and reception method. It is a form of music therapy based on passive acceptance intervention with the method of listening to music, feeling and appreciating the content and depth of music, guiding individuals to generate positive associations, therefore promoting individuals to immerse themselves and resonate with the power brought by music, finally achieving an intervention effect. This method can be used to guide imagination, systematic desensitization, analgesia, stress reduction, hypnosis and other aspects, allowing patients to first establish relationships with music (including musical instruments) and then make a connection with music therapists, further helping patients to open their inner world and project their inner emotions. In fact, the receptive music therapy method is not only literally listening to music, but also includes many different technologies: song discussion technology, music relaxation technology, music visual imagination technology, music backtracking technology, music system desensitization, music perceptual stimulation technology, projective music listening technology, music analgesia technology, music sub-threshold information technology, music synchronous desensitization in processing technology, etc [34]. Research has found that receptive music therapy can effectively improve various negative emotions in different populations, including psychological problems such as anxiety and depression [35, 36]. Overall, receptive music therapy is very common and easily accepted, making it the most popular and effective method of music therapy.

Recreational music therapy, also known as active or participatory music therapy, represents a dynamic approach that underscores the importance of patient engagement in various music-based activities to foster therapeutic outcomes. This method advocates for active participation in music-making processes, including singing, playing instruments, improvising, and engaging in on-the-spot musical creations, as a means of promoting self-expression, creativity, and emotional release. Within the context of recreational music therapy, patients collaborate with a music therapist in shared musical experiences, such as group singing or rhythmic activities, without the requirement of formal music training or proficiency. The primary focus of recreational music therapy lies in facilitating the process of patient engagement in creative endeavors and enabling individuals to express themselves freely through music. By utilizing music as a tool for interaction and self-expression, recreational music therapy aims to enhance the social interaction skills of participants, encourage active engagement in collective activities, and redirect attention away from neurotic concerns towards the present moment. Through guided musical experiences, patients are encouraged to immerse themselves in the music-making process, allowing them to channel their emotions, thoughts, and experiences through musical expression. This immersive approach not only cultivates a sense of connection and belonging within the therapeutic setting but also serves as a vehicle for emotional catharsis, stress reduction, and the cultivation of positive emotional states. By guiding patients to focus on the present moment and encouraging them to explore their inner worlds through music, recreational music therapy provides a safe and supportive environment for individuals to engage in meaningful self-discovery, emotional processing, and personal growth.

The improvisation music therapy method, also known as creative expression music therapy, represents a nuanced approach that emphasizes spontaneous musical creation and exploration as a means of therapeutic intervention. In the context of improvisation, the selection of instruments typically leans towards elementary, rhythmical, and melodious percussion instruments that can be played without the need for prior practice or formal training. While this method may appear to require a high level of musical literacy and professional proficiency from both patients and therapists, it serves as a powerful tool for establishing a strong therapeutic rapport and fostering a deep sense of trust and collaboration between individuals. By engaging in improvisational music-making, patients are encouraged to tap into their emotions, thoughts, and inner experiences through spontaneous musical expression, allowing for the release and exploration of deeply held feelings and emotions. Therapists can leverage the improvisational process to gain valuable insights into the emotional landscape of their patients, facilitating a deeper understanding of their needs and experiences. Moreover, improvisation enables therapists to guide and support patients in a more direct and impactful manner, using music as a medium for communication, emotional expression, and personal growth. While improvisation music therapy may require a higher level of skill and expertise compared to other modalities, its potential for profound emotional release and therapeutic transformation makes it a valuable tool in the therapeutic toolkit. Although improvisation music therapy is still relatively uncommon in China due to its demanding nature, it has gained widespread acceptance and popularity in developed countries with a strong tradition of musical literacy, such as Europe and the United States, where it is recognized as a highly effective and versatile approach to music therapy practice.

Within the expansive realm of music therapy, a diverse array of methods and approaches exists, each offering unique advantages and limitations tailored to specific therapeutic goals and populations. These methods encompass a spectrum of techniques, ranging from active music-making to receptive listening experiences, improvisational exercises, and guided music imagery sessions. As therapists navigate this rich tapestry of interventions, they draw upon a nuanced understanding of the patient's individual circumstances, including their medical history, emotional state, cognitive abilities, and personal preferences, to tailor a customized treatment plan that aligns with the patient's needs and therapeutic objectives. By carefully considering a multitude of factors and variables, therapists can optimize the effectiveness of music therapy interventions, maximizing therapeutic outcomes and fostering meaningful progress in the patient's healing journey. This holistic approach to treatment

selection ensures that the therapeutic process is not only tailored to the unique needs of each individual but also enhances the overall efficacy and efficiency of the therapeutic experience, ultimately leading to more profound and lasting benefits for the patient.

#### *2.4. Principles of Music Therapy*

In the realm of music therapy, the intricate interplay between music and brain function serves as the cornerstone of music-based experiences and activities. Esteemed experts in the field posit that music signals possess the remarkable ability to influence individuals' emotions, modulate physiological functions of various organs, and elicit responses within key brain regions such as the cerebral cortex, hypothalamus, and limbic system. By leveraging the profound impact of music on neural pathways and emotional centers in the brain, music therapy endeavors to enhance internal equilibrium, alleviate adverse reactions triggered by external stimuli, address psychological imbalances, and facilitate the restoration of normal human functions. Through the strategic application of music interventions tailored to individual needs and goals, music therapy harnesses the power of sound and rhythm to promote holistic well-being, foster emotional regulation, and support the body's innate capacity for self-healing and resilience. This dynamic interplay between music and brain function underscores the transformative potential of music therapy as a therapeutic modality that transcends conventional approaches, offering a unique pathway towards enhanced emotional well-being, physical health, and psychological harmony [37, 38]. Previous research has indicated that the multifaceted benefits of music therapy manifest across a spectrum of dimensions, encompassing the physical, physiological, psychological, and social domains. In the realm of physical health, music therapy has been shown to facilitate improvements in motor skills, coordination, and overall physical functioning, making it a valuable tool in rehabilitation settings and for individuals with physical disabilities. On a physiological level, music therapy has been found to influence vital signs such as heart rate, blood pressure, and respiratory rate, promoting relaxation, stress reduction, and overall well-being. In the realm of psychology, music therapy has demonstrated efficacy in enhancing mood, reducing anxiety and depression, and fostering emotional expression and self-awareness. Moreover, the social dimension of music therapy highlights its capacity to foster interpersonal connections, communication skills, and a sense of community among participants, making it a powerful tool for promoting social integration and cohesion.

**Physical effect of music therapy:** The proximity of the auditory center to the pain center in the cerebral cortex underscores the intricate relationship between music and pain management. By stimulating the brain's auditory center through music, a powerful mechanism is activated wherein the pain center is effectively suppressed, leading to increased brain activity levels. This phenomenon highlights the potential of music as a potent tool for pain modulation and relief. Moreover, the regulatory impact of music extends beyond pain management to encompass the modulation of nerves and body fluids, thereby facilitating the secretion of beneficial hormones and neurotransmitters within the human body. This cascade of physiological responses triggered by music therapy serves to regulate blood circulation, enhance metabolism, alleviate fatigue, and mitigate the onset of anxiety, depression, or other psychological crises. By promoting the secretion of these healthy substances, music therapy plays a pivotal role in restoring balance to the body-mind connection, offering a holistic approach to wellness and mental health. Through its multifaceted effects on the neurobiological and emotional landscape, music therapy emerges as a versatile and effective intervention for alleviating symptoms of mental illness and promoting overall well-being.

**Physiological effects of music therapy:** Numerous studies have provided compelling evidence supporting the notion that individuals experience a notable decrease in heart rate, blood pressure, and cortisol levels when engaging in the simple yet profound act of listening to music. This physiological response underscores the profound impact that music can have on the human body's stress response system and overall well-being. By immersing oneself in the harmonious melodies and rhythms of music, individuals may experience a sense of calm and relaxation that manifests as a tangible reduction in heart

rate, blood pressure, and cortisol levels. This cascade of physiological changes not only reflects the immediate benefits of music listening on stress reduction but also highlights the potential of music as a therapeutic tool for promoting cardiovascular health, stress management, and emotional regulation [39, 40]. Furthermore, the impact of music extends beyond the realm of stress reduction to encompass a wide array of physiological changes across multiple bodily systems. Research has demonstrated that music has the remarkable ability to induce alterations in various physiological characteristics, including heart and respiration rates, systolic and diastolic blood pressure, skin temperature and resistance, muscle potential and activity, as well as plasma norepinephrine levels. These findings underscore the intricate and profound influence that music exerts on the human body, eliciting a cascade of responses that reflect the interconnectedness of music and physiology [41-43]. With these advantages of music, the inner functions of the human body can be more stable. The subjects receiving music therapy will become less stressed or anxious and return to a calm state.

**Psychological effect of music therapy:** The psychological function of music therapy encompasses a multifaceted approach that starts by influencing individuals' emotional activities on a profound level. Music has the unique ability to impact emotional responses through the modulation of frequency and pressure of sound waves, triggering psychological reactions that allow individuals to engage with and process basic emotional experiences such as joy, sadness, and empathy within the context of musical compositions. As individuals immerse themselves in the process of listening to music, their emotional states undergo dynamic shifts in alignment with the rhythmic patterns and tonal qualities of the music. This emotional resonance serves as a catalyst for catharsis, providing individuals, including patients, with a safe and expressive outlet for releasing pent-up emotions and alleviating stress. By harnessing the therapeutic power of music, patients can gradually transition from various pathological states to more normalized emotional states, facilitating the correction of psychological disorders, emotional stabilization, and enhanced recovery from illness. The transformative effects of music therapy extend beyond mere emotional regulation to encompass a holistic approach to healing that integrates the mind, body, and spirit, fostering a sense of well-being and resilience in individuals undergoing treatment.

**Social effect of music therapy:** Viewed through a certain lens, the process of engaging in music activities, such as participating in a chorus or instrumental ensemble, is rich with opportunities for the development of social and communication skills. These musical endeavors serve as platforms through which individuals, including those with mental disorders, can engage in meaningful interactions and exchanges. By partaking in diverse music activities, patients are provided with avenues to express their innermost thoughts and emotions, fostering an environment of encouragement, compassion, and mutual understanding in emotional communication. This collaborative musical experience not only enables patients to alleviate psychological distress and pain but also cultivates a sense of satisfaction through self-expression and achievement, thereby bolstering their self-confidence, enhancing self-evaluation, and nurturing mental well-being. As a form of art transcending physical boundaries, music is a powerful medium for individuals to convey emotions that may be challenging to articulate in everyday interactions, facilitating enhanced communication and emotional expression. Through the transformative potential of music, individuals can forge deeper connections, foster empathy, and cultivate a sense of emotional resonance that transcends linguistic barriers [44, 45].

### *2.5. Development and Clinical Application of Music Therapy*

The practice of music therapy boasts a rich and storied history that spans across cultures and civilizations, dating back thousands of years. One of the earliest documented instances of music therapy can be traced back to ancient China, where the "Five Tone Therapy for Diseases" concept was introduced in the revered medical text "Ye and Dong [46]" over two millennia ago. This ancient Chinese music therapy system was intricately linked to the five national modes of music—Zeng, et al. [47]—and their correlation with the characteristics of the five viscera and five elements. In the Western world, the roots of music therapy can be attributed to the insights of ancient Greek philosophers such as Pythagoras, who recognized the profound impact of music on human psychological



well-being. Additionally, the renowned philosopher Aristotle acknowledged the therapeutic potential of music, noting its ability to restore emotional equilibrium and promote healing. The application of music as a therapeutic tool gained further traction during World War II, particularly in the treatment of mental illness, leading to its formal recognition as a discipline at Michigan State University in 1944. Subsequently, the United States established the world's first national association of music therapeutics in 1950, marking a pivotal moment in the institutionalization of music therapy as a specialized form of treatment. Over the years, music therapy has evolved into a comprehensive therapeutic modality that finds widespread application across various domains of the medical field. From its origins as a niche practice to its current status as a recognized and respected form of therapy, music therapy has undergone significant growth and development. Today, it is utilized in diverse healthcare settings, including hospitals, clinics, schools, and community centers, to address a wide range of physical, emotional, cognitive, and social needs. Its versatility and effectiveness have led to its integration into treatment plans for conditions such as chronic pain, neurological disorders, mental health issues, developmental disabilities, and palliative care. As research continues to uncover the intricate mechanisms through which music influences the brain and body, the potential applications of music therapy are expanding, paving the way for innovative approaches to healing and wellness. This evolution reflects the growing recognition of music therapy's therapeutic benefits and its capacity to adapt and respond to the evolving needs of individuals across the lifespan.

### 3. Piano Music

#### 3.1. *The style Classification of Piano Music*

The piano, originating in the Western classical music tradition, stands as a quintessential keyboard instrument renowned for its versatility and expressive capabilities. Evolving over centuries, modern pianos boast a rich spectrum of sounds, diverse timbres, and exceptional dynamic range, making them indispensable in various musical contexts. Beyond serving as a solo instrument for virtuosic performances, the piano excels in ensemble settings, accompaniment roles, and as a fundamental tool for music composition and aural training. Its adaptability and expressive potential have earned it the moniker of the "king of musical instruments." The piano's expressive range is vast, allowing musicians to convey a myriad of emotions through its keys, from delicate and tender melodies to powerful and intense passages. The diversity of piano music is reflected in its styles, which encompass a broad array of compositional techniques, expressive nuances, and musical forms. From classical to contemporary, romantic to minimalist, the piano repertoire offers a kaleidoscope of musical styles that cater to a wide range of tastes and preferences. This versatility and expressive depth make the piano a beloved instrument not only for performers and composers but also for listeners who appreciate the beauty and emotional resonance of piano music.

Classical music: When delving into the realm of classical music, one encounters a rich tapestry of characteristics that define this timeless genre. Classical music is renowned for its adherence to three fundamental features: systematicity, classicality, and seriousness, embodying a sense of balance, clarity, and a profound focus on the aesthetic beauty of form. This style of music transcends temporal boundaries, resonating with audiences across generations due to its enduring value and universal appeal. Classical piano music, in particular, stands out for its elegance and sophistication, embodying a sense of solemnity and refinement that reflects an artistic pursuit of rationality and order. The language of classical music is marked by its simplicity and conciseness, conveying profound emotions with clarity and precision. Through its rigorous and harmonious structure, classical music encapsulates simple yet sincere sentiments, evoking a sense of depth and authenticity in its expression. Moreover, classical music is often characterized by a sense of tranquility, offering listeners a space for contemplation, relaxation, and aesthetic pleasure. Iconic works within the classical piano repertoire, composed by virtuosos such as Mozart, Beethoven, Chopin, and Tchaikovsky, exemplify the timeless beauty and artistic integrity that define this illustrious musical tradition.

**Pop music:** Pop music, a vibrant and dynamic genre, encompasses instrumental compositions and songs characterized by their concise structure, catchy melodies, and relatable themes. This popular form of music resonates with a broad audience, garnering widespread appreciation and enduring popularity across generations. Unlike the more formal and structured nature of classical music, pop music exudes a sense of accessibility, entertainment, and universality, making it a staple in the music industry. Within the realm of pop piano music, genres such as jazz, rock, and blues stand out as quintessential examples of this lively and engaging musical style. These genres infuse the piano with a sense of energy, spontaneity, and emotional depth, creating a dynamic and exhilarating listening experience for audiences. In essence, pop music thrives on its ability to evoke emotions, inspire creativity, and provide an exciting musical journey that captivates listeners and leaves a lasting impact.

**Folk music:** Indigenous to specific regions and cultures, folk music, also referred to as local music, embodies distinct ethnic and regional characteristics that serve as a reflection of the cultural heritage and historical narratives of a community. Folk music, in essence, serves as a mirror of the people's way of life, their traditions, and their collective experiences. For instance, when exploring Chinese-style piano compositions, iconic pieces such as "Colorful Clouds Chasing the Moon," "[48, 49]. Flower" exemplify the rich tapestry of melodies and narratives that define folk music in this cultural context. Folk music, with its roots deeply intertwined with the fabric of society, exudes a sense of warmth, sincerity, and storytelling that resonates with audiences on a personal and emotional level. This genre of music has the unique ability to foster social cohesion and emotional connection, making it a powerful medium for cultural expression and community engagement. Through its cordial and inviting nature, folk music invites listeners to embark on a journey of shared experiences, fostering a sense of unity and interconnectedness among individuals.

**Natural music:** Nature-inspired music, often referred to as natural music, draws upon the serene and harmonious sounds of the natural world, ranging from gentle waves lapping against the shore to the melodic chirping of birds and the rhythmic hum of insects. Additionally, this genre may incorporate the powerful and awe-inspiring sounds of thunderstorms, cascading waterfalls, or rustling leaves in the wind. The essence of natural music lies in its ability to evoke a sense of tranquility, peace, and connection to the environment, offering listeners a soothing and immersive auditory experience that transcends the artificiality of conventional music. With its calming and organic tones, natural music is a therapeutic tool for relaxation and stress relief, providing a respite from the hustle and bustle of daily life. By immersing oneself in the gentle melodies of nature, individuals can find solace, rejuvenation, and a renewed sense of inner peace, making natural music a valuable resource for promoting well-being and mental clarity in today's fast-paced world.

### *3.2. The Emotional Experience Brought by Different Styles of Music*

Every piano piece, whether classical, pop, folk, or natural, has distinct musical characteristics, including rhythm, melody, tempo, intensity, and emotional depth. The interpretation of these elements varies widely among different performers, resulting in a diverse range of emotional experiences for listeners. Classical music, known for its solemnity and intellectual depth, adheres to a strict structural framework and often conveys a sense of gravitas and introspection. The grandeur of classical piano compositions can evoke feelings of inspiration and empowerment, catalyzing overcoming feelings of melancholy and self-doubt. In contrast, pop music exudes a carefree and vibrant energy, characterized by its eclectic mix of musical styles and emotional nuances. This genre typically imparts a sense of positivity, liveliness, and joy to listeners, making it an effective tool for alleviating anxiety and tension in individuals. Folk music, with its raw emotional power and rich storytelling, carries a profound cultural and regional significance that resonates with audiences profoundly. Listeners often find themselves immersed in the narratives woven into folk melodies, allowing them to connect with their emotions and find solace in the music's cathartic release of pent-up anger or sadness. With its gentle pace, soothing melodies, and minimalistic variations, natural music has a profound, calming effect on the mind and body. When exposed to the tranquil sounds of nature-inspired music, individuals experience a

profound sense of peace and relief, allowing them to unwind and destress from the depths of their being. This makes natural music particularly beneficial for individuals grappling with emotional instability or severe insomnia, as it provides a therapeutic escape into a realm of serenity and relaxation.

### *3.3. Clinical Application of Piano Music*

(1) Music therapy encompasses a diverse array of approaches and techniques to utilize music's therapeutic benefits to improve mental, emotional, and physical well-being. Among the various instruments used in music therapy, the piano holds a central and indispensable role, owing to its widespread popularity and unparalleled versatility. The piano's 88 keys offer a vast range of musical tones and expressions, allowing for the creation of intricate melodies that can evoke a broad spectrum of emotions. The timbre and dynamics of the piano, coupled with the skill and artistry of the performer, play a crucial role in shaping the therapeutic impact of the music. Different melodies have the power to convey distinct emotional characteristics, thereby eliciting varied therapeutic effects on individuals undergoing music therapy sessions. Additionally, the piano enjoys universal appeal both domestically and internationally, making it a familiar and accessible instrument that is cherished by audiences worldwide. Unlike more esoteric or less common musical instruments, the piano is widely embraced by the public and is readily accepted by patients seeking therapeutic interventions. This widespread acceptance and familiarity make piano therapy a practical and feasible option for a broad range of individuals seeking emotional and psychological support. In today's fast-paced world, where the pressures of modern life often take a toll on mental health, traditional medical interventions alone may not suffice to address the complex psychological needs of individuals. Increasingly, research and clinical studies have demonstrated the efficacy of piano music in alleviating a variety of psychological health issues, offering a non-invasive and holistic approach to promoting emotional well-being and mental resilience. By incorporating piano music into therapeutic interventions, practitioners can harness the healing power of music to support individuals in navigating and overcoming psychological challenges, fostering a sense of inner harmony and emotional balance.

#### *3.3.1. Clinical Application of Active Piano Music Therapy*

Active piano music therapy encompasses a multifaceted approach that includes both piano learning and piano playing, requiring a high degree of coordination between the hands, feet, eyes, and brain to master the intricacies of playing a complete piano piece. This coordination not only stimulates the senses but also fosters cognitive balance, emotional regulation, and mental well-being, thereby facilitating a targeted therapeutic effect that can promote relaxation or emotional expression. Engaging in long-term piano lessons cultivates virtues such as patience, coordination, sensitivity, and responsiveness in both adolescents and adults, nurturing their musical potential and fostering creativity while offering tailored interventions for a variety of psychological conditions. In the case of adolescents and children, piano instruction can have a profound impact on their intellectual, physical, and emotional development. For individuals with conditions such as autism or attention deficit hyperactivity disorder (ADHD), playing the piano can contribute to the balanced development of the brain, stimulate the central nervous system, enhance cognitive understanding, and potentially ameliorate clinical symptoms to some extent. Adults, with their more advanced psycho-physiological development and heightened learning and perceptual abilities, may benefit from passive piano music therapy, which is more commonly employed due to their reduced learning initiative and flexibility compared to adolescents and children. By incorporating piano music therapy into their lives, individuals of all ages can harness the therapeutic power of music to enhance their cognitive abilities, emotional well-being, and overall quality of life.

#### *3.3.2. Clinical Application of Passive Piano Music Therapy*

Passive piano music therapy primarily involves the act of listening to piano music, serving as a predominant intervention method utilized in numerous research studies and therapeutic practices. As

the realm of piano music continues to evolve and diversify, a wide array of genres and styles have emerged, each possessing unique characteristics that can elicit distinct therapeutic effects on individuals. From classical compositions to contemporary pieces, the nuances and intricacies of piano music have the power to evoke a range of emotions, stimulate the senses, and promote relaxation and emotional well-being. The melodic richness, harmonic complexity, and dynamic variations found in different styles of piano music contribute to the diverse therapeutic benefits that can be derived from passive exposure to this art form. Whether it be the soothing melodies of a nocturne, the lively rhythms of a ragtime piece, or the emotional depth of a romantic ballad, each genre of piano music offers a unique sonic experience that can resonate with listeners on a profound level, providing solace, inspiration, and a sense of connection to the music and its therapeutic effects. By exploring the vast landscape of piano music genres and styles, individuals can discover a wealth of healing and transformative potential that can enhance their mental, emotional, and spiritual well-being through the power of passive piano music therapy. Darki, et al. [50] used Beethoven's "Symphony of Destiny" and "Moonlight Sonata" to study the change of heart rate, blood pressure and emotional state in normal people with classical music intervention. Their research findings revealed that exposure to fast-paced music elicited an increase in heart rate and systolic/diastolic blood pressure levels, whereas the opposite effect was observed with slow-paced music, leading to a decrease in heart rate and blood pressure readings. This study underscored the dual positive and active impact that both fast and slow music can have on individuals' emotional states, highlighting the therapeutic potential of music in influencing physiological responses. When considering the selection of piano music for therapeutic purposes, it is essential to tailor the choice to the specific emotional needs of the individual. For individuals experiencing tension and anxiety, soothing and calming piano compositions with a moderate tempo, simple rhythms, and gentle tonal shifts, such as "Kijiro's Summer," "Canon," or "Adirina by the Water," may be most beneficial. Conversely, for those grappling with feelings of depression, lively and uplifting piano pieces with medium to high tempos, cheerful melodies, and vibrant harmonies, like "The Blue Danube" or "Four Little Swans Dance," could be more suitable. Patients with sleep disorders may benefit from piano music characterized by a slower pace, minimal pitch fluctuations, and a tranquil melody, such as "What I Feel When I See Her," which can promote physical relaxation and aid in improving sleep quality. Additionally, piano compositions like "Water Grass Dance" and "Coral Dance," which evoke vivid imagery and evoke strong emotions, may be ideal for systematic desensitization in psychotherapeutic settings. While the diversity of piano music styles is vast and varied, historical literature has predominantly focused on classical compositions, with limited exploration into the comparative efficacy of different piano styles in addressing anxiety and depression. Multiple scientific studies have confirmed the positive effects of classical music, including classical piano music, on patients with depression [19]. These studies utilized methods such as EEG measurement, neuroimaging techniques, and clinical evaluation to validate the antidepressant effects of music therapy from multiple perspectives. To address this gap, our research endeavors to investigate the effects of various piano music styles, including classical, jazz, and original compositions, on college students experiencing depression. Furthermore, our study aims to create 2-3 original piano compositions explicitly tailored for individuals struggling with depression to provide personalized therapeutic interventions through music.

#### 4. Research Methodology

This quasi-experimental study was conducted with 40 freshman and sophomore students majoring in music education and vocal music at the Xinghai Conservatory of Music. Participants were selected based on the following inclusion criteria:

1. Inclusion Criteria: A Self-Rating Depression Scale (SDS) score  $\geq 53$  points. Students themselves make voluntary enrollment decisions after interview evaluations with researchers. Experiencing sustained anxiety or low mood in daily life.
2. Exclusion Criteria: A clinical diagnosis of mental illness, use of psychotropic medications, and engagement in other psychiatric interventions, such as psychological counseling.

Additionally, three key informants, consisting of doctors specializing in clinical psychiatry, were recruited. These doctors were currently employed in tertiary hospitals in Guangzhou and had completed their doctoral studies in psychiatry.

#### 4.1. Research Instruments

1. Student Interview Form: This instrument collected demographic and contextual data on students, including Gender, age, major, and academic year. It also asked about symptoms and potential causes of depression and stress, music-listening habits when experiencing depression, Preferred styles of piano music, duration of listening sessions, and reasons for preference of particular styles of music.

2. Doctor Interview Form: This instrument gathered expert recommendations from psychiatrists regarding music suitable for alleviating depression and stress. Questions included identifying the main symptoms and causes of depression or stress and making recommendations on music commonly used in clinical practice for patients with these conditions.

3. Self-Rating Depression Scale (SDS): Professor Zung from Duke University Medical School developed the SDS, which was used to assess depression levels among participants. This study employed a revised Chinese version of the SDS. The scale consists of 20 items, with responses scored on a 4-point Likert scale, measuring the frequency of depressive symptoms. Ten items are positively scored, and the remaining ten are negatively scored. The total raw score (X) is calculated and multiplied by 1.25 to derive the standard score (Y), taking the integer part only.

Depression severity is categorized as follows: Normal:  $Y < 53$ ; Mild depression:  $Y = 53-62$ ; Moderate depression:  $Y = 63-72$ ; Severe depression:  $Y > 72$

#### 4.2. Data Collection and Analysis

Data collection involved both qualitative and quantitative approaches:

1. Content Analysis: Responses from the student and doctor interview forms were analyzed qualitatively to identify common themes related to depression symptoms, causes, and music preferences.

2. Statistical Analysis: Depression levels, as measured by the SDS, were analyzed statistically to categorize participants into severity levels and examine correlations between music preferences and depression alleviation.

This methodology ensured a comprehensive approach to understanding the relationship between piano music and its potential effects on depression and stress in university students.

## 5. Results

### 5.1. Objective 1: The Symptoms and Cause of Depression and Stress

#### 5.1.1. Results from Research and Document Study

From the literature, it can be understood that the symptoms of depression or high stress in college students are mainly manifested as sustained emotional depression, pessimism, disappointment, anxiety, and loss of interest and enjoyment in activities that they were interested in in the past, accompanied by cognitive impairments such as decreased learning efficiency, lack of concentration, and memory decline. They may also experience social withdrawal, avoidance of communication with others, and other social disorders. These symptoms may be caused by various factors, including academic stress, uncertainty in future employment, interpersonal relationship problems, psychological disorders such as anxiety and neurasthenia, as well as individual factors such as genetic makeup, personality traits, and stressful life events. In addition, the lack of reasonable learning methods, improper time management, and lack of emotional support may also exacerbate depression and stress among college students.

#### 5.1.2. Findings from Interviews with Professional Music Therapy Doctors

To gain insight into the symptoms and causes of depression, face-to-face interviews were conducted with three professional music therapy doctors [51]. Their responses provided valuable perspectives, summarized as follows:

### 5.1.2.1. Symptoms of Depression

The doctors consistently identified low mood as the most common symptom of depression. Li, et al. [51] highlighted that depression is prevalent in real life. While the most frequently reported symptom among patients is low mood, the most severe manifestations include self-harm or suicidal tendencies. Li, et al. [51] emphasized that many patients seek medical care due to a lack of interest in activities and persistent feelings of sadness. Li, et al. [51] shared a similar view, reiterating that low mood is the most common symptom. In addition to low mood, the doctors identified other symptoms associated with depression, including Lack of interest or pleasure in activities; Fatigue and feelings of helplessness; Low self-esteem and self-blame; Pessimism, disappointment, and isolation; Thoughts or behaviors related to self-harm or suicide; Decreased appetite, sleep disturbances, and physical symptoms such as fatigue. It was noted that not all these symptoms are present in every case of depression, but the presence of at least two or three symptoms is typically required for a clinical diagnosis. Symptoms persisting for more than two weeks generally meet the clinical diagnostic criteria for depression (Table 4.1).

### 5.1.2.2. Causes of Depression

The doctors agreed that the causes of depression are multifactorial, involving a combination of genetic, environmental, and physiological factors. Li, et al. [51] stated that genetic predisposition and upbringing play significant roles in the development of depression. Li, et al. [51] emphasized that acquired factors, such as family environment and life experiences, are primary contributors. Li, et al. [51] added that certain physical illnesses, such as chronic conditions like diabetes and coronary heart disease, can increase the risk of depression. The doctors collectively identified diverse causes, including Genetic Factors, Hereditary predisposition to depression; Environmental Factors, Family dynamics, life stressors, and upbringing; Physiological Conditions, Chronic diseases and other health issues; Personality Traits, Certain personality characteristics that may predispose individuals to depression.

These findings underscore the complexity of depression, highlighting the interplay between biological, environmental, and psychological factors in its etiology (Table 1).

**Table 1.**  
Interview Results of Three Doctors.

Name	What do you think are the main symptoms?	What do you think are the main causes?	What kind of music do you like to use to treat patients with depression or stress
Li, et al. [52]	The most common symptom is low mood, and the most serious is self-harm or suicidal tendencies.	The most common causes include congenital genetic factors and acquired growth environment factors.	My personal favorite is to use classical piano music.
Li, et al. [52]	Most patients with depression show a lack of interest in anything or feel frustrated every day when they come for medical treatment.	Depression is mainly influenced by upbringing or acquired factors	I usually use classical music the most, such as works by Beethoven, Tchaikovsky, and others.
Lin and Xu [53]	The most common symptom of depression in patients is low mood.	In addition to congenital heredity and acquired growth factors, some physical diseases, especially chronic diseases such as diabetes, will increase the risk of depression.	I prefer to use piano music that combines classical and pop music to treat young patients with depression.

Source: Zou, et al. [54].

### 5.1.2.3. Results from Student Surveys

1.Result of SDS: Self-rating depression scale survey: The average SDS scores of all study subjects were  $62.1 \pm 6.7$ . The results showed that among all the subjects, 25 (62.5%) had mild depression, 12

(30.0%) had moderate depression, and 3 (7.5%) had severe depression (Table 2). Based on the survey results, we summarized the following eight symptoms that college students with depression or stress exhibited: loss of appetite, weight loss, sleep disorders, feeling down, feeling hopeless, loss of concentration, self-blame or self-guilt, inhibition of thought. The most common symptom was feeling down, with approximately 70% of subjects having such symptoms. The second most common symptoms were loss of appetite and sleep disorders (Table 3).

**Table 2.**

Depression Levels in College Students.

Depression		N (%)
Depression level	Mild depression	25 (62.5%)
	Moderate depression	12 (30.0%)
	Severe depression	3 (7.5%)
SDS scores	Mean (SD)	62.1 (6.7)
Total		40 (100%)

Source: Zou, et al. [54].

**Table 3.**

Depression or Stress Symptoms in College Students.

Symptoms	N (%)
Loss of appetite	25 (62.5%)
Weight loss	20 (50.0%)
Sleep disorders	25 (62.5%)
Feel down	28 (70.0%)
Feel hopeless	19 (47.5%)
Loss of concentration	20 (50.0%)
Self-blame or self-guilt	22 (55.0%)
Inhibition of thought	15 (37.5%)
Total	40 (100%)

Source: Zou, et al. [54].

2. Result of causes of depression and stress: From our questionnaire, we found four major reasons of depression in those subjects. Among them, the highest proportion is academic pressure (40.0%), followed by family environment (27.5%) and emotional issues (20.0%), and finally major changes (12.5%) (Table 4).

**Table 4.**

Causes of Depression and Stress in College Students.

Causes	N (%)
Academic pressure	16 (40.0%)
Family environment	11 (27.5%)
Emotional problems	8 (20.0%)
Major changes	5 (12.5%)
Total	40 (100%)

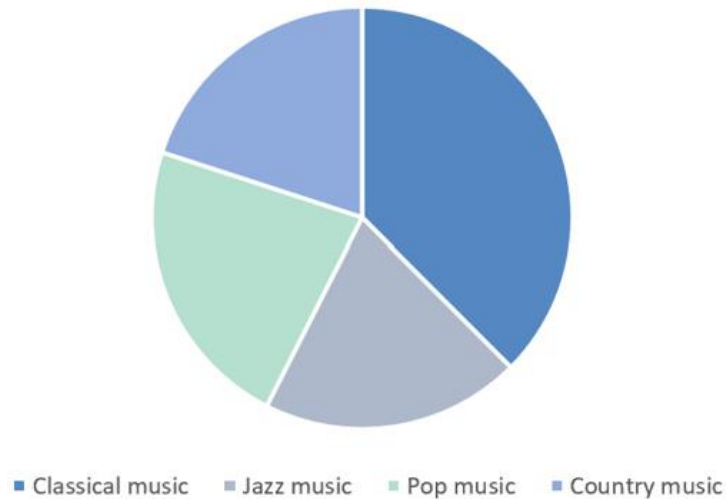
Source: Zou, et al. [54].

**Table 5.**

Piano Style Preferred by College Students with Depression.

Piano Style	N (%)
Classical music	15 (37.5%)
Jazz music	8 (20.0%)
Pop music	9 (22.5%)
Country music	8 (20.0%)
Total	40 (100%)

Source: Zou, et al. [54].



**Figure 1.**  
Piano Style Preferred by College Students with Depression.  
**Source:** Zou, et al. [54].

## 5.2. Objective 2: The Different Styles of Piano Playing for Music Therapy.

### 5.2.1. Types of Piano Pieces Recommended by Doctors

Interviews with the three professional music therapy doctors revealed their preferences for piano pieces used in clinical practice to treat patients with depression: Li, et al. [51] agreed that classical piano music is a commonly used therapeutic method. Li, et al. [51] emphasized that a combination of classical and pop music may be more suitable for younger patients, as it resonates better with their preferences and conditions. The findings indicate that music therapy for clinical depression patients requires meticulous selection of pieces. Classical piano music was deemed to have a better therapeutic effect compared to pop music. Moreover, the therapy must progress gradually, with the intensity of music adapted to the patient's current stage of depression. The doctors stressed the importance of tailoring the music to the patient's symptoms and depression stage.

The most frequently recommended classical composers included Beethoven, Chopin, and Tchaikovsky, whose works were cited as effective in alleviating depressive symptoms (Table 1).

### 5.2.2. Types of Piano Pieces Preferred by Students

A survey of college students revealed their preferences for piano music styles during depressive episodes: 37.5% of students preferred classical piano music; 22.5% preferred pop music; 20.0% each preferred jazz and country music. These results suggest that while classical music is the most preferred, other genres such as jazz and pop also have a notable impact on student relaxation (Table 5, Figure 1).

### 5.2.3. Music Creation Components for Stress Therapy

The analysis of music creation components identified several key elements that contribute to stress therapy.

1. **Melody, Scale, and Tonality:** Major scales evoke bright and optimistic emotions, enhancing mood. Minor scales, though melancholic, can promote relaxation in specific contexts. Natural and pentatonic scales create a harmonious and peaceful atmosphere, alleviating anxiety.

2. **Moderate Vocal Range:** A moderate range avoids excessive auditory stimulation, promoting comfort and relaxation

3. **Melodic Lines:** Smooth melodic lines with minimal abrupt changes create peace and tranquility. Repetition or looping of simple melodies provides stability and reduces anxiety.



4. Intervals: Progressive intervals guide emotions toward calmness. Occasional jumping intervals add vitality without inducing anxiety.

5. Rhythm and Tempo: Slow tempos are associated with relaxation and tranquility, lowering heart rate and alleviating stress.

6. Rhythmic Patterns: Regular rhythms provide stability and reduce tension. Split rhythms, when used appropriately, add variety without overstimulation.

7. Beats: Simple beats, such as 4/4, offer stability, while 3/4 beats convey lightness and enjoyment.

8. Sound Duration: Long notes prolong tranquility, while appropriate rests create anticipation and space for relaxation.

9. Timbre: Soft instruments like the piano generate warm sounds that create a peaceful atmosphere.

10. Tonal Expression and Emotional Atmosphere: Warm bass tones and soothing high-pitched melodies convey peace and relaxation.

11. Sound Intensity: Avoiding sudden volume changes and maintaining steady intensity creates a stable atmosphere. Gradual fading at the end of pieces helps reduce tension.

12. Musical Texture and Harmony: Harmonious chord arrangements and moderate tonal changes avoid complexity and enhance relaxation.

13. Polyphonic Thinking: Balanced interaction between voice parts ensures harmony and avoids auditory overload.

14. Musical Form: Simple structures (A-B-A or A-B-C) promote coherence and stability. Repetitive sections foster familiarity and comfort.

These elements collectively contribute to designing effective piano music in stress therapy, emphasizing balance, simplicity, and gradual progression.

## 6. Conclusion

### 6.1. Objective 1: Symptoms and Cause of Depression or Stress

Our comprehensive study findings unveiled that the primary symptom of depression prevalent among college students is a persistent low mood, largely due to overwhelming academic demands and pressures.

### 6.2. Objective 2: The Different Style of Piano Playing for Music Therapy Analysis

Through interviews with students and doctors, it was discovered that classical music is highly preferred by students experiencing depression or stress. Subsequently, at the doctor's suggestion, an analysis of three classical piano compositions revealed varying styles, all of which demonstrated potential in alleviating symptoms.

Following an evaluation of three piano compositions recommended by medical professionals for those patients, we composed three original pieces. All three physicians concurred that these compositions could ameliorate depression or stress symptoms. After rating their satisfaction levels, we found that the third composition received the highest satisfaction.

## 7. Discussion

Depression and stress are prevalent mental health conditions characterized by persistent sadness, hopelessness, and a loss of interest in activities. These issues significantly impact individuals' emotions, behaviors, and daily lives, particularly among college students, where incidence rates are rising [16, 36]. Depression among students often manifests as low mood, sleep and appetite changes, fatigue, difficulty concentrating, and thoughts of self-harm. These symptoms can lead to academic decline, social withdrawal, substance abuse, and suicidal ideation. The academic pressures, social challenges, and environmental transitions unique to college life exacerbate these issues. Our study investigated symptoms of depression in college students through questionnaires and interviews with medical professionals. Results revealed diverse symptoms, such as persistent sadness, appetite changes, sleep disturbances, fatigue, and negative self-perception. These findings align with prior research [55, 56].

Emphasizing the multifaceted nature of depression. All interviewed doctors identified low mood as the most common symptom, consistent with clinical diagnostic criteria [47, 57]. Exploring causes, we found that depression results from biological, psychological, and environmental factors [58]. Doctors and literature highlighted genetic predispositions, life pressures, and neurobiological factors as significant contributors. Academic stress emerged as the leading cause among students, corroborating studies by Pedrelli, et al. [59] and Reyes-Rodríguez, et al. [60]. The intense coursework demands, fear of failure, and relentless competition contribute to feelings of inadequacy, anxiety, and hopelessness. Additional factors such as financial burdens, homesickness, and social pressures further compound the risk of depression. Addressing these underlying causes is essential for promoting mental health and academic success among college students, underscoring the need for tailored interventions and support systems.

Our research expanded into exploring treatment approaches for depression, emphasizing the potential of music therapy as a non-pharmacological intervention. While drug therapy remains a common treatment, its drawbacks—such as side effects, dependency, and social stigma—underscore the need for alternative approaches [61]. Music therapy, which uses music to address emotional, cognitive, and social needs, offers a valuable supplementary method. This therapy enhances mood, reduces stress, and supports overall well-being by engaging individuals in activities such as listening to music, playing instruments, and songwriting [5, 38]. Its application spans various populations, including mental health patients and individuals with developmental disorders or chronic illnesses [41, 62]. Our study specifically investigated the role of piano music in music therapy for depression. Results revealed that college students with depression often prefer classical piano music due to its profound emotional resonance and calming melodic qualities. Classical compositions, with their elegant structure and rhythmic intricacies, can evoke tranquility and provide a channel for emotional expression, potentially alleviating anxiety and tension [63]. However, preferences for therapeutic music vary significantly among individuals. Factors such as cultural background, personal experiences, and emotional states influence musical choices. Research indicates that some individuals with depression may gravitate toward melancholic music that mirrors their emotions, offering validation and fostering acceptance [64]. Nonetheless, melancholic music may not necessarily aid recovery. Effective music therapy requires a personalized approach, tailoring selections to each individual's needs and therapeutic goals. Classical piano music, while widely effective, should not be viewed as a universal solution. Personalized strategies remain critical for optimizing the therapeutic potential of music therapy in addressing depression.

With their distinct melodies and harmonies, original piano compositions can evoke deep emotional connections, making them highly effective in music therapy for depression. Unlike classical or popular pieces, personalized compositions cater to the unique therapeutic needs of individuals, fostering emotional healing and self-expression. In our study, we created three original piano compositions to convey hope, calmness, and strength to support individuals with depression. Feedback from professional doctors highlighted their therapeutic value, with the third piece receiving the highest satisfaction rating. Each composition embodies different emotional tones to address diverse aspects of depression. The first piece, lively and light-hearted, features dynamic rhythms that stimulate dopamine release, creating feelings of joy and relaxation. Its vibrant nature fosters emotional well-being and acts as a temporary distraction from negative emotions. Additionally, it encourages social engagement and vitality, helping individuals reconnect with their surroundings. The second piece, passionate and intense, employs dynamic rhythms and robust chord progressions to evoke excitement and empowerment. Its uplifting atmosphere inspires positivity and restores motivation, serving as an emotional catalyst for rebuilding confidence and confronting challenges. The third piece, soothing and gentle, is characterized by serene melodies and tranquil rhythms that promote relaxation and inner peace. It alleviates psychological stress, providing a safe emotional outlet for individuals to process and manage their feelings. This type of music, supported by recent scientific studies, has shown efficacy in reducing depressive symptoms and enhancing quality of life. In clinical practice, piano music serves as a complementary treatment for

depression. Incorporating music into therapeutic settings can create a serene atmosphere while encouraging patients to engage with the music amplifies its benefits. However, music therapy should be tailored to individual needs and integrated with other treatments, such as medication and psychological therapy, for optimal results.

## 8. Implications

The findings from this study underscore the therapeutic potential of piano music in addressing depression and stress, highlighting its diverse applications in both clinical and non-clinical settings. The use of personalized compositions to evoke specific emotional responses demonstrates the importance of tailoring music therapy to individual needs. For individuals experiencing depression, music therapy offers an accessible and non-invasive approach to emotional regulation and mental health support. The three original compositions in this study illustrate how varied musical styles—lively, passionate, and soothing—can cater to different emotional states and therapeutic goals.

These findings suggest that incorporating music therapy into traditional treatment plans can enhance overall therapeutic outcomes by addressing the emotional and psychological dimensions of depression. Furthermore, the positive feedback from professional evaluations reinforces the feasibility of using original piano compositions as part of mental health interventions.

## 9. Recommendations

1. Integration into Clinical Practice: Mental health practitioners should consider integrating piano music therapy into treatment plans for patients with depression and stress. Customized music compositions tailored to patients' emotional needs could complement existing therapies.

2. Personalization of Music Therapy: Music therapists should evaluate individual preferences, cultural backgrounds, and emotional states when designing therapy programs to ensure that selected compositions resonate deeply with patients.

3. Collaborative Development: Encourage collaboration between music therapists, composers, and mental health professionals to create therapeutic compositions that effectively address specific emotional and psychological challenges.

4. Research and Training: Conduct further research to establish evidence-based guidelines for the use of music therapy in treating mental health conditions. Training programs for therapists should include modules on the therapeutic applications of piano music.

5. Community Outreach: Promote awareness of the benefits of music therapy among educators, healthcare providers, and the general public. Implement piano music therapy in community mental health programs to make it more accessible to diverse populations.

## Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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