

The influence of music education combined with sports psychology on students' anxiety

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Abstract

The mental health of college students has become a topic of public discourse and is one of the most pressing issues confronting colleges and universities on the path to survival and development. This study aims to determine the effect of music education and sports psychology on student anxiety. This eight-week study examined the students of a college of physical education using SAS and a questionnaire. Free recovery, sports prescription recovery, group psychological counseling recovery, and sports prescription plus group psychological counseling recovery were implemented as intervention measures. 37% had anxiety symptoms, with most students in social athletics classes suffering from anxiety disorders. There is a significant difference between the proportion of male and female anxiety sufferers. Before and after the intervention, the contents of serum 5-hydroxytryptamine (5-HT), brain-derived neurotrophic factor (BNDF), and plasma cortisol (COR) were measured; after the intervention, the contents of 5-HT, BNDF, and COR were significantly increased ($P < 0.05$ or $P < 0.01$) in all groups except the free recovery group. The anxiety level of apprehensive college students can be reduced using the intervention. These findings are novel and contribute significantly to the existing body of knowledge. The study suggests some prospective research directions for scholars to consider.

Keywords: Anxiety psychology; college student; Music education; Sports

1. Introduction

In recent years, as economic and social levels have continued to rise, people's quality of life has improved. Nonetheless, due to the increasing pressures of life and society, young people's mental health has become a general concern in our culture; adolescent jumping, fighting, and autism still exist (Poland, O'Hare, & O'Hara, 2022). The mental health issues of adolescents, the country's future leaders, have reached a point where they cannot be disregarded. No matter how high a person's cultural quality, it is challenging for them to adapt to the demands of society if they lack psychological quality. Addressing adolescent mental health issues requires more than a high school diploma; society should strengthen all aspects, such as music education's role in guiding students' psychological qualities and promoting their mental health (Frey-Clark, Tucker, & West, 2023). According to Maslow's theory of human needs, the ultimate requirement of human nature is self-actualization. In acquiring music in middle school, students can experience inner satisfaction by listening and using their mouths, eyes, and ears. Students can be given this aesthetic fulfillment from music (Dong, Kang, & Ding, 2022). Self-actualization is important for enhancing students' aesthetic ability and charisma.

Students can develop an interest in music outside the classroom as a gateway to art education. Students pursuing

music in their leisure time can achieve self-actualization and avoidance of youth. When adolescents are exposed to undesirable activities, students have a profound appreciation for the beauty of music, which is conducive to enhancing students' aesthetic ability and promoting students (Jääskeläinen, López-Iñiguez, & Phillips, 2022). Students must possess the psychological characteristic of continuous advancement (Murad, Malik, & Ullah, 2022). With the expansion of the concept of people-centered education, the teaching objectives of universities undergo a qualitative transformation, resulting in an improvement in the students' professional and psychological qualities. The mental health of college students has become a topic of public discourse. It is one of the most significant obstacles to survival and development. Regarding student psychology, music education plays a crucial role in addressing health issues. Colleges and universities should enhance music education on multiple levels and with skill (Váradi, 2022).

In addition, it is necessary to incorporate music into the instruction of students' professional courses to effectively alleviate the burden of students in edifying sentiment, solve the problem of students in real-time mental health issues, and promote the development of mental health. To attain sustainable development, the actual implementation of people-centered education must be read aloud. Due to the globalization of the economy, values are exhibiting a trend

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toward diversification, and mental health has become a prevalent social problem; "national anxiety" has become a social disease in China. College students play an essential role in China's future development as leaders of their generation. Researchers are concerned with their apprehension. Anxiety is a component of mental health issues that will cause injury to the physiology, cognition, and behavior of college students, as well as the ideological and political work and administration of colleges and universities (Du et al., 2022). The investigation and study of college students' anxiety can provide data references and a theoretical foundation for the development of college students' mental health education. Figure 1 depicts the origins of college students' anxiety. It is not only an art but also a discipline, an interpersonal interaction process, and a form of therapy.

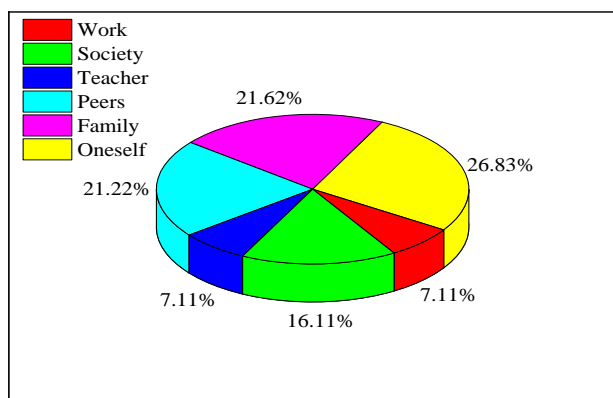


Figure 1. The source of college students' anxiety

(Zhang, 2022) Music education is essential to the development of college students' fundamental qualities. From the perspective of prospective student development, we can guide students on multiple levels, including knowledge, skill, and emotion. As an art form, music plays a significant role in regulating emotion, cultivating sentiment, tempering will, cultivating personality, etc. The lack of awareness of psychological education through music art hinders the development of students' core literacy from the perspective of current music education, which continues to emphasize the study of musical works and the training of musical skills in classroom design. Given this, teachers should actively alter the teaching concept, adhere to the training requirements of core quality, and promote the innovation and reform of music education from the standpoint of students' healthy psychological development. During group psychological counseling for college students with anxiety, with the assistance of appropriate sports, a scientific and reasonable sports prescription can be formulated, and anxiety college students can be intervened from both physical and mental perspectives simultaneously.

2. Literature Review

Teachers are permitted to perform Bandery music for students. This is primarily because the soundtrack of the entire Bandery series is set in the Alps. There is no artificial sound mixing; all sounds of insects, animals, and water come from the Alps' mountains and lakes. Consequently, the Bandery music series is an extremely effective tension reliever. Psychotherapy practice has demonstrated that improving a patient's demeanor can effectively resolve mental health issues. Using music to convey emotions to middle school students is unquestionably an effective method for relieving the stress of middle school students, and it can cultivate positive attitudes among middle school students. On the mind, frequently listening to music similar to that of the Bandery department column can help students maintain a relaxed and cheerful disposition during the study, thereby improving the students' learning efficiency and allowing them to establish confidence, thereby reducing stress and forming a virtuous circle (Zhang, 2022). Contemporary college students encounter problems such as electronic media, globalization, network, urbanization, and ecological environment in a world where cultural differences are prominent, and values are diverse. Anxiety will arise when faced with the choice of learning, life, communication, love, and employment, as well as other problems encountered in life practice away from family. With the development of global talent integration, college students will confront more development tasks and more free choices; consequently, anxiety will become common among college students of the twenty-first century (Cheng et al., 2022).

Although moderate anxiety has a certain positive significance in certain life situations, persistent and severe anxiety can cause serious physical and mental damage to patients (Váradí, 2022); therefore, effective intervention models are proposed based on the anxiety status and causes of college students to help them overcome anxiety so that they can face life with confidence and optimism. Completing the socialization process is vitally essential and has significant practical significance. Drug therapy, group psychological counseling, cognitive therapy, behavioral desensitization, etc., are the most prevalent intervention and treatment strategies for anxiety. Meng and Zhang (2020) confirmed that group psychotherapy is an effective intervention approach for college students suffering from anxiety. Mascret, Danthony, and Cury (2021) intervened with individuals with emotional difficulties through individual or group psychotherapy, and the outcomes demonstrated positive outcomes. Most

studies indicate that moderate-intensity physical activity can reduce anxiety, depression, tension, and fatigue in patients. Studies conducted outside of China have demonstrated that sports can be used as a form of psychotherapy to eliminate anxiety, that it can significantly alleviate people's sense of tension, improve people's sense of self, and allow people to distract themselves from their worries and frustrations, to effectively reduce anxiety, improve people's mood, and increase their sense of pleasure. Stress behavior can reduce the expression of Bdnf in the hippocampus, increasing anxiety, as demonstrated by [Moriya \(2022\)](#). Antidepressants have a significant degree of overlap with blocking the Bdnf molecular channel. Some antidepressants initially inhibit the release of 5-HT by activating the presynaptic 5-HT_{1A} receptor, worsen anxiety, desensitize the receptor a few weeks later, increase the release of 5-HT, and improve panic symptoms ([Maher et al., 2021](#)). Therefore, 5-HT can prevent the onset of anxiety, and its depletion can result in panic attacks. Cor is a type of hormone produced by the adrenal gland during a cyclical and rhythmic stress response; under stress, the body needs cortisol to maintain normal physiological functions; in the absence of cortisol, individuals will experience negative emotions such as anxiety ([Koerten et al., 2020](#)).

As an art form, music, its cadence, and melody are intimately connected to the emotions of individuals. Therefore, incorporating psychological education into music instruction is both natural and essential. In music education, teachers can use music works to convey virtuous qualities and positive emotions to pupils, allowing them to have the subjective desire to "learn from others" in developing musical emotion. Moreover, students can use music to make acquaintances with similar individuals, broaden the scope of communication, enhance emotional exchanges between individuals, and overcome psychological misunderstandings to strengthen the sense of belonging in group communication ([Zhang, 2022](#)). In appreciating and comprehending music, students can come into contact with new and original artistic creation ideas, mobilize their sense of innovation, and cultivate their innovative spirit as the music manifests innovation. In musical activities, students cooperate and assist one another, progressively reverse their self-centered psychological limitations, balance their relationships with others, and enhance their teamwork skills ([Jin, Dewaele, & MacIntyre, 2021](#)). This indicates that music education positively influences students' psychological development; therefore, music teachers should create a positive and effective learning environment based on the characteristics of students' psychological development.

3. Methodology

3.1 Research object

Music is a form of art with the most potent ability to penetrate people's innermost hearts. Reasonable music education methods can infuse the music with positive emotions and edify students' emotions, thereby preventing the development of mental health issues in middle school students. Studies indicate that effective music instruction can help college students cultivate their inner emotions and develop distinctive personality traits. In addition, music allows students to experience the majesty and awe of the world and broaden their horizons. Moreover, singing instruction in music education can effectively foster the development of students' emotional expression and capacity. In addition, students participate in the art performance through their school or class. When singing or performing a variety of programs, students can also experience various emotions, allowing them to reflect on the emotional difference between a role and reality, which can enhance their appreciation of the present. Middle school students can, for instance, experience the songwriter's love for the motherland while singing the song Ode to the Motherland. Effectively cultivate students' patriotic feelings; When singing the song "Night at the Military Harbour," students can experience the people's solution in the process of singing, the life of the army, and the sense of mission, etc., so that the psychological development of middle school students can be more mature, while simultaneously cultivating the correct student's outlook on life, values, and the world.

Four full-time undergraduate students (excluding those in the graduating class) from four institutions were chosen randomly as the study subjects; 1,500 questionnaires were distributed, 1,216 were returned, and 1,125 were valid. According to the revised Chinese College Students' Anxiety Questionnaire by [Jin et al. \(2021\)](#), college students' average state anxiety and trait anxiety is 45.31 and 43.31, respectively. According to the revised Self-Rating Anxiety Scale (SAS-CR) compiled by [Benson, Dunning, and Barber \(2022\)](#) and the National Scale Cooperation Group, those aged 60 to 69 had moderate anxiety. In this survey, 121 individuals with scores ≥ 45 on the screening of the State-Trait Anxiety Scale and ≥ 65 on the Self-rating Anxiety Scale were deemed to have anxiety symptoms of variable severity. The investigation was conducted with participants' consent. Ultimately, 80 individuals, including 37 boys and 43 girls with an average age of (20.25 ± 1.0) years, participated in the experiment. They were randomly divided into 4 groups of 20 individuals each, including the free recovery group, the sports prescription recovery group,

the psychological counseling recovery group, and the psychological counseling comprehensive recovery group.

3.2 Research methods

The research instruments were selected from the (Wood et al., 2020) State-Trait Anxiety Inventory (STAI). The questionnaire contains 40 items, the first 20 of which are the State Anxiety Inventory (S-AI), of which half describe positive emotions, and the other half describe negative emotions; these items are primarily used to assess a recent specific situation or immediate feelings or experiences of fear, anxiety, tension, and nervousness. The last 20 items are the Trait Anxiety Inventory (T-AI), used to evaluate frequent emotional experiences; 9 items describe positive emotions, and 11 describe negative emotions. This table has a minimum score of 20 and a maximum score of 80, reflecting the state or trait anxiety level. The test-retest reliability S-AI of the scale is 0.88, T-AI is 0.90, and the correlation coefficient between S-AI and T-AI in the initial test was 0.84, and in the retest was 0.77, as determined by factor analysis, reliability, and construct validity tests. The Chinese version's reliability and validity are satisfactory, and the scale applies to Chinese individuals.

The Self-Rating Anxiety Scale (SAS-CR) revised by the National Scale Cooperation Group contains twenty items, ten positive and ten negative words. Adopting a 4-grade scoring standard, the normal range was defined as a standard score < 50, 50-59 as mild anxiety, 60-69 as moderate anxiety, and ≥ 70 as severe anxiety. This table's internal consistency coefficient is 0.931, indicating that each item's content is consistent, reliable, and valid and can be used to measure the apprehension level of subjects. Biochemical index determination: Serum levels of brain-derived neurotrophic factor (Bdnf) and serotonin (5-HT) were measured by taking 5mL of fasting venous blood from each group at 8:00 a.m. on the day before intervention and the first day after 8 weeks of intervention, placing it in an anticoagulant vacuum tube, and removing the serum after centrifugation. Additionally, 3mL of venous blood was drawn and placed in an anticoagulant test tube. After the plasma was separated by centrifugation, the cortisol (COR) level was measured. Nanjing Jiancheng Bioengineering Research Institute supplied the spectrophotometry equipment to determine the above indexes (Thorpe & McPhail, 2022).

3.3 Data processing

Microsoft Excel and SPSS13.0 were used for data analysis, and the data were expressed as mean and standard deviation ($\bar{X} \pm SD$). T-test was used for analysis before and after the test, and the significance level was set at $P=0.05$ (Zhang, 2021).

3.4 Experimental scheme

The duration of the intervention for the intervention test group was eight weeks, and the intervention protocol was as follows: (1) The Sports Prescription Recovery Group The intensity of the exercise ranges from 50% to 85% of the maximal oxygen uptake and remains moderate (equivalent to 60% to 75% of the maximum heart rate). In the exercise prescription, the first cycle lasts 1~4 week, and the second lasts 58 weeks. (2) Group Counseling for Recovering Individuals (GCRG). According to Professor Fan Fumin's Group treatment activity plan for anxiety disorder, the specific content of this Group psychological consultation was developed. (3) SPGCRG: Sports Prescription and Group Counseling Recovery Group Intersperse two sports training courses with one group psychotherapy session per week. (4) Freedom Recovery Group (FRG): Do not conduct any organized intervention activities; instead, inform them of the risk of severe anxiety and require them to rely on their autonomous adjustment (Bolden, Corcoran, & Butler, 2021).

4. Results and Discussion

4.1 Statistics of Students' Anxiety

The author used the self-rating anxiety scale to examine the anxiety levels of college students. The anxiety status of all pupils at a college of physical education is predominantly normal, devoid of anxiety symptoms, and characterized by only mild anxiety symptoms. In addition, only a few students exhibit moderate anxiety symptoms and even fewer display severe anxiety symptoms. The anxiety levels of 63% of the students were within the normal range. In general, the anxiety level of college pupils is low. Frequently, engaging in physical exercise will reduce psychological depression among students.

4.2 Analysis of anxiety influence characteristics

According to the results of the Self-rating Anxiety Scale, the anxiety characteristics of students in a college of physical education are primarily manifested in four ways: being easily tense and anxious, being easily weakened and fatigued, having a rapid heartbeat, and experiencing nightmares.

As shown in Figure 2, 37% of them are easily apprehensive and anxious, 31% experience easy fatigue, 22% experience rapid heartbeat, and 10% experience nightmares. In addition to being easily disturbed or frightened, suffering from stomach-ache and indigestion, fainting attacks or feeling faint, trembling hands and feet, experiencing fear, numbness, and tingling of hands and feet for no apparent reason, etc., are additional symptoms of student anxiety.

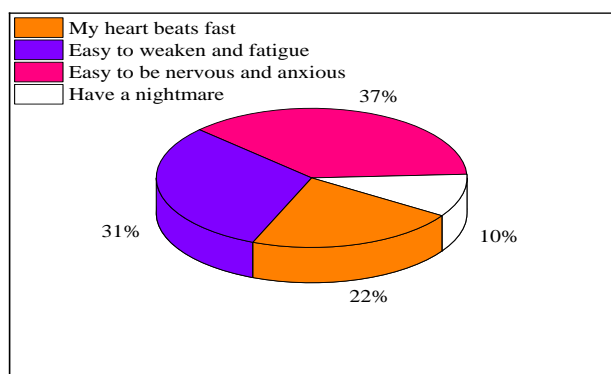


Figure 2. Main characteristics of students' anxiety

4.3 Comparison of anxiety scores of each group before and after trial intervention

Using SPSS13.0 to conduct a T-test on the data mentioned above, it was determined that there was no significant difference between the anxiety levels of the two groups prior to the trial intervention. After 8 weeks of experimental intervention, there was no significant difference in the level of state-trait anxiety between the free recovery group and the level before the intervention. However, there was a significant difference between the sports prescription recovery group and the group psychological counseling recovery group ($P < 0.05$). Nevertheless, there was a statistically significant difference between the sports prescription group and the group psychological counseling group ($P < 0.01$). On the self-rating anxiety scale, no significant difference existed between the unrestricted recovery group and the groups receiving sports prescriptions and group psychological counseling ($P > 0.05$). Nonetheless, there was a statistically significant difference ($P < 0.01$) between the comprehensive recovery rates of sports prescriptions and group psychological counseling (see Table 1 and Table 2)

Table 1

Anxiety score of each group before the trial intervention

Project	FRG	SPRG	GCRG	SPGCRG
trait anxiety	44.2±6.0	44.2±6.2	44.3±6.3	44.3±5.5
state anxiety	45.1±6.3	45.1±5.8	45.1±6.3	45.1±6.1
Self-Rating Anxiety Scale	65.3±3.5	65.3±4.6	65.3±4.7	65.3±4.1

Table 2

Anxiety score of each group after the trial intervention

project	FRG	SPRG	GCRG	SPGCRG
trait anxiety	44.2±6.0	41.1±5.3*	42.3±5.4*	40.1±4.9**
state anxiety	45.1±6.3	42.2±6.5*	42.2±6.4*	41.2±3.5**
Self-Rating Anxiety Scale	65.3±3.5	60.2±3.7*	60.1±5.9*	58.4±6.3**

Note: * $P < 0.05$, ** $P < 0.01$ (the same below) compared to before the intervention.

After the comprehensive intervention of 8-week sports prescription and group psychological counseling, the scores of trait anxiety, state anxiety, and self-rating anxiety scale changed significantly. It demonstrates that after a comprehensive intervention consisting of sports prescription and group psychotherapy, the anxiety level of college students has been significantly reduced.

4.4 Changes of biochemical indexes in each group before and after intervention

The concentrations of 5-HT, Bdnf, and Cor in the free recovery group were not significantly different from those before the intervention. While the contents of various indexes were substantially higher in the sports prescription recovery group and the group psychological counseling recovery group, this difference was statistically significant ($P < 0.05$). The content of each index increased substantially ($P < 0.01$) in the comprehensive recovery group consisting of sports prescription and group psychological counseling (see Tables 3 and 4).

Table 3

Comparison of biochemical indexes of each group before intervention

project/ng*mL-1	FRG	SPRG	GCRG	SPGCRG
5-HT	104.8±55.4	104.2±56.3	101.2±53.4	103.2±56.3
BNDf	26.0±10.5	25.9±12.0	26.7±11.2	25.3±10.3
COR	89.2±33.2	88.5±36.2	89.2±35.5	88.0±34.0

Table 4

Comparison of Biochemical Indexes of Each Group after Trial Intervention

project/ng*mL-1	FRG	SPRG	GCRG	SPGCRG
5-HT	104.7±55.3	154.6±57.6*	151.2±53.4*	160.2±56.3**
BNDf	26.1±10.6	35.9±12.0*	36.7±11.2*	43.3±10.3**
COR	89.0±33.1	94.5±36.2*	104.1±29.5*	108.2±34.1**

4.5 Effect of different intervention measures on the psychological state of anxious college students

In this study, the combination of sports prescription and group psychotherapy for the intervention treatment of anxious college students produced positive results. The results indicate that the experimental group experienced a significant anxiety reduction. In group psychotherapy, apprehensive college students began to confront their psychological issues, and their social interaction significantly improved; they changed the original negative cognitive structure; the primary causes of the change are as follows: Initially, during the process of group counseling, many students realized that their anxiety state was not unique and that other students had similar issues, thereby reducing their anxiety in cases of unique loneliness and helplessness. Second, students support and assist one

another in pursuing value and pleasure. Thirdly, through the description and communication of the status of role models in group psychological counseling, it is simpler to contact and actively resolve certain deep-seated problems. Fourthly, the constraint of collective unconsciousness encourages everyone to maintain a positive outlook, investigate the positive aspects of growth confusion, and discover a plausible explanation for the causes of anxiety in their growth (Lee & Liu, 2021).

The primary reasons anxious college students can relieve stress, combat boredom, alter their demeanor, and maintain a healthy mental state through sports are as follows: First, athletics have helped them develop their social adaptability. Second, the transfer of negative emotions during appropriate physical contact, collision, applauding, and cheering. Thirdly, in simple sports, the body's muscles are actively exercised, and the exhilaration transmitted to the brain by various muscle groups is increased, making people feel elated and anxious and physically and mentally happy, thereby establishing a harmonious environment and cultivating a self-confident and optimistic personality. Ehn et al. (2021) state that students can discharge and vent negative emotions through sports while supplementing and recovering positive ones. In the intervention of anxious college students, only one method can satisfy their psychological or physical development requirements. Simple psychological guidance and lengthy conversation will induce aversion in college students and, if the amount is not properly managed, will increase anxiety levels. In addition to improving the regulatory function of the nervous system, the introduction of appropriate sports can also improve the nervous system's ability to judge the complexities of human activity changes (Zamboanga et al., 2022). Accordingly, the human body can make coordinated, accurate, and rapid responses punctually to adapt to changes in internal and external environments and maintain normal life activities. Aerobic exercise of the appropriate intensity can reduce tension in college students, cultivate their emotions, challenge their bodies and mind, and bring out their initiative, zeal, and creativity. Thus, the objective is to increase college students' self-confidence and facilitate healthy and harmonious personality development in a harmonious environment. Using a comprehensive intervention model, it is possible to effectively treat college students' psychological anxiety by combining sports and group psychological counseling to maximize their benefits and minimize their drawbacks.

4.6 Effects of different intervention measures on biochemical indicators of anxious college students

This study's results indicated no significant difference between the levels of 5-HT, Bdnf, and Cor in the

spontaneous recovery group and the control group prior to the intervention. All of the above indices increased after 8 weeks of intervention, and there was a significant ($P < 0.05$) or extremely significant ($P < 0.01$) difference from the open recovery group. It indicates that, as a result of intervention measures, the biochemical indicators of the body have substantially improved, which has a certain debugging effect on the psychological state of the subjects and consequently reduces their anxiety. Introduce diverse musical content and encourage the psychological development of pupils. Since a person's psychological environment is closely tied to his perceptual ability, his cognitive ability will increase proportionally when his mood is elevated and his disposition is positive.

In contrast, the cognitive process will encounter numerous obstacles. Teachers should therefore broaden and innovate music teaching content, provide students with music types that match their interests, meet the music needs of college students, and enable students to be attracted to music works and actively mobilize thought and emotion to achieve mental health education. Emotional experience is an essential component of psychological education, and the emotional connection between music art and people is a crucial foundation for educators to penetrate emotional education and enhance students' music experience.

In teaching music, teachers must pay attention to the situation edification experience and activate the multiple senses of their students by establishing a good musical environment. Although it is impossible to directly measure the quantifiable teaching effect, music education, and music experience have a profound and far-reaching impact on students' psychological quality (Kidokoro et al., 2020). Based on the requirements of fundamental literacy training, guiding students' "social participation" is an unavoidable necessity to improve students' practical literacy and physical and mental health. Modern college students have self-centered psychological tendencies due to their unique growth environment, which will affect the formation of interpersonal relationships in their communication with others and future social exchanges, thereby causing psychological imbalance. To promote the healthy development of students' psychology, teachers should organize students to engage in music interaction, strengthen collective consciousness, and reduce the pressure of interpersonal communication during the process of music's emotional influence (Ma, 2020).

5. Conclusion

Serum 5-hydroxytryptamine, brain-derived neurotrophic factor, and plasma cortisol levels improved substantially after eight weeks of intervention treatment for anxious

college students using the comprehensive method of combining sports prescription with group psychological counseling. In addition, this study revealed that the comprehensive model of anxiety reduction, athletics prescription, and group psychological guidance is the most effective intervention treatment for anxious college students. In contrast, the detection rate of anxiety symptoms among college students majoring in physical education is high, while the severity of anxiety symptoms is low, concentrating primarily on the absence of anxiety symptoms and mild anxiety symptoms. There is a substantial anxiety gap between male and female college students majoring in physical education. This study also revealed that there are more male students than female students with moderate anxiety symptoms and fewer male students than female students without anxiety symptoms. A propensity for nervousness and anxiety, weakness and exhaustion, a rapid heartbeat, and nightmares characterize anxiety in students.

6. Research Implications

This research has substantial implications for advancing knowledge and practice. According to the study's findings, colleges and universities should enhance the mental health census mechanism. In order to provide a foundation for effective psychological counseling, this study also asserted that colleges and universities must conduct a thorough survey of college students' mental health and maintain a comprehensive file of this information. According to the findings of this study, a college psychological crisis prevention and detection system is required. Based on the findings of this study, it is necessary to construct a five-level information network to prevent psychological crises in school student offices and college dormitories. In addition, this study revealed that it is crucial to promptly identify aberrant students and administer counseling, intervention, and treatment. The school should establish a campus

culture that is healthy, harmonious, and comfortable. In addition, teachers must actively encourage students to develop healthy lifestyle practices and enhance their capacity to prevent and treat anxiety. On the other hand, mental health issues are becoming increasingly prevalent in university education and instruction, which is not conducive to students' acquisition of cultural knowledge and healthy development of body and mind. In talent development, schools should accurately comprehend the relationship between music education and students' mental health through a variety of practical means, optimize music education connections, and maximize music education's contribution to improving students' mental health. In addition, this study highlighted that by simultaneously improving students' musical and psychological quality, comprehensive development could be achieved, a large number of high-level professionals could be trained, and the demand for quality talent in the social industry field could be met further advanced the development of our university education cause.

7. Future Directions

Without a doubt, this study has presented significant findings regarding music education's function in improving students' mental health. However, students' psychological well-being has not been considered in this research. Therefore, future research must determine the function of psychological well-being as a mediator between music education and students' mental health. For a critical evaluation of this study's findings, it is recommended that future research gather data from various geographic regions and utilize a more diverse sample. In the interim, future research will employ multigroup analysis to ascertain the impact of music education on male and female students. In this way, future studies will contribute significant findings to the body of knowledge and provide practices with guidelines.

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