

The Effect of Dance Psychotherapy Activities on Stress Reduction for Undergraduate Students

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Abstract

Stress among undergraduate students is a growing concern due to its negative impacts on mental and physical health as well as academic performance. Dance psychotherapy, an emerging therapeutic approach, holds promise for reducing stress by integrating physical activity with psychological exploration and expression. This research aimed to investigate 1) the stress levels of undergraduate students; 2) the impact of dance psychotherapy activities on stress levels within the experimental group; and 3) the disparity in stress levels between the experimental and control groups. The study population comprised undergraduate students at Chongqing University of Mechanical and Electrical Technology in China, with 60 students meeting the study's criteria and being selected as samples, evenly divided into control and experimental groups. The control group participated in 8 sessions of dance psychotherapy activities over 2 weeks. The research instruments included a stress scale and dance psychotherapy activities. Data were analyzed using descriptive and static statistics to compare means between two independent sample groups. The study results revealed the following: 1) The current stress levels among undergraduate students are moderate; 2) Participation in the activities led to a decrease in stress levels among the experimental group; and 3) There was a significant difference in stress levels between the experimental and control groups of undergraduate students ($p < 0.01$). This study underscored the comprehensive stress-reducing benefits of participating in dance psychotherapy activities for college students, including emotional release, anxiety alleviation, mitigation of physical stress reactions, enhancement of social connections, and promotion of self-awareness, thereby aiding in better management of pressure and anxiety. Additionally, it offers educational institutions and

schools a viable strategy for stress reduction among students through the incorporation of dance psychotherapy activities into their programs.

Keywords: Effect; Undergraduate Students' Stress; Dance Psychotherapy Activities

Introduction

In contemporary society, the mental health of undergraduates has become increasingly prominent, posing significant challenges due to academic pressures, personal responsibilities, and interpersonal dynamics, all of which profoundly influence their well-being (Bi & Peng, 2003). Stress emerges as a critical factor contributing to mental health issues among undergraduates, stemming from academic expectations, social obligations, and familial responsibilities (Xiao et al., 2019). Research indicates that heightened stress levels correlate with adverse outcomes such as anxiety, depression, and physical health problems, sometimes leading to severe psychological and physical reactions, including suicidal ideation in extreme cases. Understanding undergraduates' stress responses and their coping mechanisms is crucial for promoting their mental health.

Exploring stress responses is vital in addressing mental health challenges among undergraduates, as stress often results from individuals' cognitive appraisals of challenging situations, triggering various psychological and physiological reactions such as anxiety, mood swings, hypertension, headaches, and sleep disturbances (Gong et al., 2019). Dance psychotherapy activities are recognized for their capacity to facilitate emotional expression and regulation through movement, providing a supportive environment for individuals to process emotions (Priya & Joy, 2023). Andrejeva et al. (2022) demonstrated that dance movement therapy positively impacts the psycho-emotional state, flexibility, and physical abilities of individuals under constant stress, suggesting its potential across different age groups to enhance well-being and quality of life. Moreover, Bräuninger (2012) conducted a randomized controlled trial indicating that dance movement therapy significantly reduces stress and improves psychological well-being over short and long-term periods. Similarly, Salihu et al. (2022) found that dance interventions effectively alleviate depression, anxiety, and stress in adults, including those with and without musculoskeletal disorders, highlighting dance as a beneficial therapeutic intervention.

Given these insights, there is a compelling need to further explore the efficacy of dance psychotherapy activities tailored specifically for undergraduate students. This paper aims to investigate the influence of dance psychotherapy activities on stress reduction among

undergraduate students, provide theoretical foundations, and develop a practical dance therapy program aimed at effectively alleviating stress levels and enhancing mental health. The findings of this study underscore the potential of dance therapy as a valuable psychological intervention. Educators and mental health professionals may consider integrating dance therapy into psychological treatments for student stress relief to facilitate effective emotional management and enhance subjective well-being. Furthermore, this article proposes an innovative educational approach that integrates dance therapy into the curriculum, offering students a comprehensive learning experience that boosts motivation and interest in academic pursuits.

Research Objectives

1. To assess the stress levels among undergraduate students.
2. To examine the effect of dance psychotherapy activities on reducing stress levels within the experimental group.
3. To compare the stress levels between the experimental and control groups.

Literature Review

Stress

Stress is originally a physical concept that refers to forces acting vertically on the surface of an object. The concept of stress in the field of psychology was first proposed in 1956 by the Selye system, which regarded stress as a non-specific response to individuals stimulated by the environment, namely general adaptation syndrome (GAS), so Selye is known as the "father of stress". In 1984, Lazarus and Folkman proposed the term "psychological stress." They believed that psychological stress is a special relationship between individuals and the environment that is evaluated by individuals as beyond their resources or may pose a threat to their physical and mental health. Liang (2006) put forward the idea that psychological stress is the tense state generated by individuals in psychological and physiological aspects when they are facing an extremely important and difficult environment. Yu et al. (2008) believe that psychological stress is the psychological response of individuals to the cognitive evaluation of the threatening stimuli in the environment, and this theory particularly emphasizes the role of cognition.

Sources of stress for college students

With the rapid advancements in science and technology, the pace of modern life is accelerating, ushering in fierce competition across various industries. This dynamic presents contemporary college students with substantial challenges in academics, employment, and interpersonal relationships, thereby escalating stress levels, particularly concerning mental health (Huang et al., 2020). According to the research conducted by many scholars, the factors affecting the psychological pressure of undergraduates in Chinese universities mainly include interpersonal relationships, marriage and love, academic research, and economic burden.

To sum up, we can see that there are many empirical studies on psychological stress among undergraduates in China. Many scholars carry out sample questionnaires in combination with universities in different regions from the perspective of cities, including Beijing, Tianjin, Chongqing, and Nanjing. There are also some national questionnaires involved. From the basic conclusion, first, the psychological pressure of undergraduate students in different regions is widespread. Whether it is a medical major, a liberal arts major, or a science and engineering major, undergraduate psychological pressure is different for different degrees. Second, the sources of undergraduate pressure mainly include economic pressure, emotional problems, study problems, employment problems, etc. There may be some differences in the ranking of undergraduate pressure sources in different regions. But the basic sources include these categories. Third, there are also differences between rural and urban students, such as grade differences and gender differences. Generally speaking, the economic pressure from rural undergraduates is greater.

Dance psychotherapy

Dance psychotherapy is a psychotherapy method to help people reduce emotional and behavioral problems through the form of dance, including movements and breathing skills. Its theoretical basis includes psychodynamic theory, Gestalt theory, body movement theory, social culture theory, and empirical theory. Dance psychotherapy can help people adjust body movements and posture, explore unconscious motivation and conflict, establish overall cognition and understanding, understand and adapt to social and cultural environments, and explore and experience different emotions and experiences so as to achieve the purpose of alleviating emotional and behavioral problems. Xie (2021) found Shanxi Normal University has a certain inferiority tendency among ten undergraduates for 18 weeks of a sports dance intervention experiment and found that the subjects of inferiority after ease improved self-esteem and self-

satisfaction at the same time, proving that sports dance can reduce the positive effect of undergraduate inferiority. Zhang (2019) found through 12 weeks of sports dance teaching experiments that sports dance teaching plays a positive role in improving young students' confidence and eliminating their inferiority complex, effectively improving the mental health level of young students, and also proving that physical exercise plays a positive role in promoting the mental health level of young students. Li et al. (2020) conducted a study of sports dance to improve the aesthetic consciousness of undergraduates in sports colleges and found that sports dance is helpful to improve students' artistic aesthetic awareness and image-thinking ability, as well as their ability to appreciate beauty. Odemis and İlhan (2016) studied the influence of Latin dance on practitioners' confidence and found that 12 weeks of Latin dance training effectively improved the confidence level of participants, indicating that Latin dance training can effectively reduce people's inferiority complex and improve self-confidence. Banio (2020) Study the impact of Latin dance on the quality of life of the people. Through the results of 163 elderly people from Europe who participated in Latin dance after intervention, Latin dance can not only keep the body healthy and inhibit the development of many diseases, but it can also promote the continuous movement of the brain, thus improving the associative ability and memory ability, helping them to establish new social connections, and helping them to forget loneliness, stagnation, and the monotony of life.

Related research

According to the literature review, dance psychotherapy activities are widely recognized as a method for promoting both physical and mental health. Especially in reducing stress. Yang et al. (2020) concluded that sports dance training for more than 3 months can weaken the psychological sub-health state of undergraduates. At the same time, they found that students who have received sports dance training are better at taking a variety of coping methods when facing stress and pressure, so as to improve their own emotional problems. Sun (2019) studied the influence of cha-cha exercise on the exercise motivation and stress response of undergraduates and found that cha-cha exercise effectively improved the exercise motivation of undergraduates and reduced their stress response. It is also found that motor motivation plays a partial mediating role in the process of relieving undergraduate stress responses. That is, cha-cha dance practice can not only directly reduce the stress response of undergraduates but also reduce the stress response of undergraduates by improving their exercise motivation. Gong et al. (2019). The experimental results show that, compared with the guiding health sports program, sports dance

practice has obvious advantages in improving undergraduates' social confidence, relieving bad emotions, and relieving anxiety. Ilhan, A. (2014) studied the influence of dance sport practice on social physical anxiety among undergraduates and found that 12 weeks of dance sport practice effectively reduces social physical anxiety among undergraduates, and people can find an outlet to vent and get rid of anxiety and pressure in the practice of daily life. Gerber et al. (2014), in their study, analyzed the interaction effect between stress and physical activity and found that in students with more stress, improvement in depression and anxiety was associated with regular participation in dance exercise, but this relationship did not exist in students with less stress. The findings suggest that dance exercise may be more effective than other exercises in slowing stress and depressed moods compared to other exercises. Manetti et al. (2015), and others took sports dancing as an intervention. After 12 weeks of experiments, it was concluded that non-competitive sports dance exercise can effectively enhance the physical function of the elderly, enhance the sense of happiness, promote social communication, improve their mental health level, and thus significantly improve their quality of life. Therefore, it is believed that in the process of gradual aging, sports dance can be used as a means to maintain cognitive and physical function.

Previous research has consistently demonstrated that physical exercise can effectively alleviate tension, depression, anxiety, inferiority complex, stress, and other negative emotions, thereby promoting both physical and mental health. Among aerobic exercise programs, dance psychotherapy activities stand out for their potential in enhancing fitness and cardiovascular health. However, there remains a notable gap in current literature regarding studies specifically focused on undergraduates and their stress levels. Given the significant psychological pressures faced by contemporary undergraduates, research on their stress levels is imperative.

Conceptual Framework

This study aimed to investigate the effect of dance psychotherapy activities on stress reduction for undergraduate students. The figure below describes the conceptual framework of the study.



Figure. 1 Conceptual Framework

Research Methodology

Population and samples

This study employs an experimental design to investigate the impact of dance psychotherapy activities on reducing stress among undergraduate students within the School of Art Dance Department. To assess changes in stress levels, both an experimental group and a control group were established. The study focuses on freshman students from Chongqing University of Mechanical and Electrical Technology, with a total of 60 participants meeting the study's criteria.

Sample: 30 undergraduates from the Art College participated in a two-week, eight-session sports dance elective course as the experimental group. The control group comprised another 30 undergraduates from the music appreciation elective course, where they engaged in 2 weeks of 8 sessions focusing on music theory and related knowledge learning. Similar academic performance between the two groups was maintained to ensure the study's reliability.

Research Instruments

1. Scale of stress response characteristics

The Scale of Stress Response Characteristics, developed by Yu et al. (2008) and based on the College Students' Stress Reaction Characteristic Scale (CSRS), derived from the Trait Coping Inventory (TCI), was administered both before and after the experiment. This scale was employed to assess the impact of dance psychotherapy activities on the stress levels of the students.

2. Dance Psychotherapy Activities Program

The program encompassed 2 weeks of sports dance practice, conducted 4 times a week for a total of 8 sessions lasting between 45 to 90 minutes each. In the experimental group, students followed a structured curriculum designed for sports dance. Conversely, the control group engaged in regular cultural courses without involvement in sports dance exercises or any other systematic physical activities.

Data Analysis

This study utilized descriptive statistics (Mean, SD) to analyze the data, and a T-test was employed as the statistical method to compare two groups between pre-test and post-test designs using SPSS version 26.0 software.

Results

Objective 1: To study Stress Among Undergraduate Students

The study included 60 undergraduate students from Chongqing University who were randomly assigned to either the experimental or control group. Descriptive statistics were computed for both groups to analyze the students' stress levels, as presented in Table 1.

Table 1 Student stress level (n =60)

Stress	Mean	S.D.	Interpret Results
1. Negative Emotions	3.95	4.50	High
2. Poor Physiology	4.10	3.22	High
3. Negative Self	4.29	3.25	High
4. Poor Interpersonal	3.36	2.68	Moderate
5. Poor Sleep	2.65	2.41	Low
6. Anxiety	2.49	2.33	Low
7. Learning Disorder	2.45	2.22	Low
Sum	3.43	20.61	Moderate

Note: Average stress value before experiment

Table 1 shows the overall stress level of students was at a moderate level. The average values were 3.43. When considering each aspect, it was found that the areas with high stress scores were: negative self, poor physiological and negative mood. The average values were 4.29 4.10 and 3.95 respectively.

Objective 2: To compare the stress of an experiment group before and after participating in dance psychotherapy activities.

Table 2 Results of the stress of an experiment group before and after participating in dance psychotherapy activities (n=30)

Group	Dimension	Before		Interpret results	After		Interpret results	T	P
		M	SD		M	SD			
Experimental group	Negative emotions	4.31	3.33	Highest	3.79	4.78	High	-4.168	0.001**
	Poor physiology	4.01	2.63	High	4.30	4.34	High	-3.543	0.001**
	Negative self	4.39	2.70	Highest	3.83	4.94	High	-4.175	0.001**
	Poor interpersonal	3.61	2.10	Moderate	2.63	3.24	Moderate	-2.988	0.006**
	Poor sleep	2.93	1.58	Moderate	2.26	3.54	Low	-4.309	0.001**
	anxiety	2.85	1.36	Moderate	2.08	2.42	Low	-4.153	0.001**
	learning disorder	2.82	1.86	Moderate	2.01	2.32	Low	-3.033	0.005**
Aggregate score		3.56	15.56	Moderate	2.98	25.58	Moderate	-4.188	0.001**

*Note: **p <0.01 significant difference*

Table 2 shows the changes in the total scores and the dimensions of the experimental groups before and after the experiment. As can be seen from Table 2, the average score of stress response in the experimental group was 3.56. After 2 weeks of dance psychotherapy activities, the average score of stress response was 2.98, which was 0.58. less before the experiment, $p = 0.001^{**} < 0.01$ and its significant difference; based on the grading method for stress at the undergraduate level, where higher scores indicate more severe stress reactions and lower scores indicate stress relief, the data from the experimental group in Table 1 shows a significant reduction in stress levels after participating in 2 weeks of dance psychotherapy activities. This reduction suggests an extremely significant alleviating effect of dance psychotherapy activities on the stress response of the experimental group.

The significant difference observed in the total stress response scores before and after the experiment can likely be attributed to the core function and characteristics of dance psychotherapy activities. Numerous studies have consistently demonstrated the positive impact of dancing on both physical and mental health.

Dance psychotherapy activities involve dance sport interventions, which are forms of aerobic exercise known for their beneficial effects. These activities are believed to improve various stress responses by addressing multiple dimensions of stress experienced by individuals. The observed reduction in stress scores across different dimensions in the experimental group before and after the experiment further supports the notion that dance psychotherapy activities effectively alleviate overall stress responses.

Objective 3: To compare the stress of undergraduate students between the experimental group and the control group.

Table 3 Comparison of the overall scores of the stress dimensions in each group before the experiment (n=60)

Variable	Experimental		Control		Interpret		F	P
	group	results	group	results				
	M	SD	M	SD				
Negative Emotions	4.31	3.33	Highest	3.60	5.68	High	0.372	0.006**
Poor Physiology	4.01	2.63	High	4.20	3.81	High	1.057	0.003**
Negative Self	4.39	2.70	Highest	4.20	3.81	High	1.091	0.003**
Poor Interpersonal	3.61	2.10	Moderate	3.12	3.27	Moderate	1.257	0.002**
Poor Sleep	2.93	1.58	Moderate	2.37	3.24	Low	1.633	0.001**
Anxiety	2.85	1.36	Moderate	2.14	3.31	Low	0.551	0.009**
Learning Disorder	2.82	1.86	Moderate	2.09	2.59	Low	1.96	0.001**
Aggregate Score	3.56	15.56	Moderate	3.10	25.71	Moderate	0.109	0.001**

Note: ** $p < 0.01$ significant difference

Table 3 presents the pre-experiment stress score data for each group separately. A one-way analysis of variance (ANOVA) using SPSS 26 software was conducted to analyze the stress response scores within each group. The results are displayed in Table 3, indicating a significant overall effect ($P=0.001^{**} > 0.01$). Specifically, significant differences were observed in dimensions: negative mood ($P=0.006^{**} > 0.01$), poor physiology ($P=0.003^{**} > 0.01$), negative self ($P=0.003^{**} > 0.01$), poor interpersonal ($P=0.002^{**} > 0.01$), poor sleep ($P=0.001^{**} > 0.01$), anxiety ($P=0.009^{**} > 0.01$), learning disorder ($P=0.001^{**} > 0.01$). Although mean differences were present across these dimensions, they were not pronounced. These findings indicate that the current experimental design was appropriate and feasible for implementation.

Table 4 Comparison of the overall scores of each dimension of stress in each group after the experiment (n=60)

Variable	Group	M	SD	F	P	Compare
Negative Emotions	A	3.79	4.78	15.617	0.001**	A<B
	B	3.92	5.63			
Poor Physiology	A	4.30	4.34	12.658	0.001**	A=B
	B	4.30	6.70			
Negative Self	A	3.83	4.94	13.634	0.001**	A<B
	B	4.22	6.48			
Poor Interpersonal	A	2.63	3.24	6.149	0.003**	A<B
	B	2.87	4.30			
Poor Sleep	A	2.26	3.54	8.724	0.002**	A<B
	B	2.46	3.84			
Anxiety	A	2.08	2.42	14.991	0.003**	A<B
	B	2.23	3.37			
Learning Disorder	A	2.01	2.32	16.955	0.001**	A<B
	B	2.22	3.41			
Aggregate Score	A	2.98	25.58	17.158	0.001**	A<B
	B	3.17	33.73			

Note: ** $p<0.01$ significant difference

Table 4 illustrates the total stress response scores for both the experimental and control groups, revealing an extremely significant difference ($P = 0.001** < 0.01$). The experimental group showed a stress score of 2.98, while the control group scored 3.17, indicating a 0.19-point higher stress level compared to the experimental group, according to the undergraduate stress response scoring method. Higher scores denote more intense stress responses.

Following 2 weeks of dance psychotherapy activities, the experimental group effectively reduced undergraduate stress responses. In contrast, the control group, engaged in music appreciation-related knowledge learning, did not exhibit significant improvement in total stress response scores.

The findings underscore the effectiveness of dance psychotherapy activities in reducing stress levels among undergraduate students. Compared to traditional academic coursework like music appreciation, dance psychotherapy proved significantly more beneficial in alleviating stress responses. These results suggest that integrating dance psychotherapy into educational settings may offer promising avenues for improving student well-being and managing stress effectively. The results are illustrated in Figure 2.

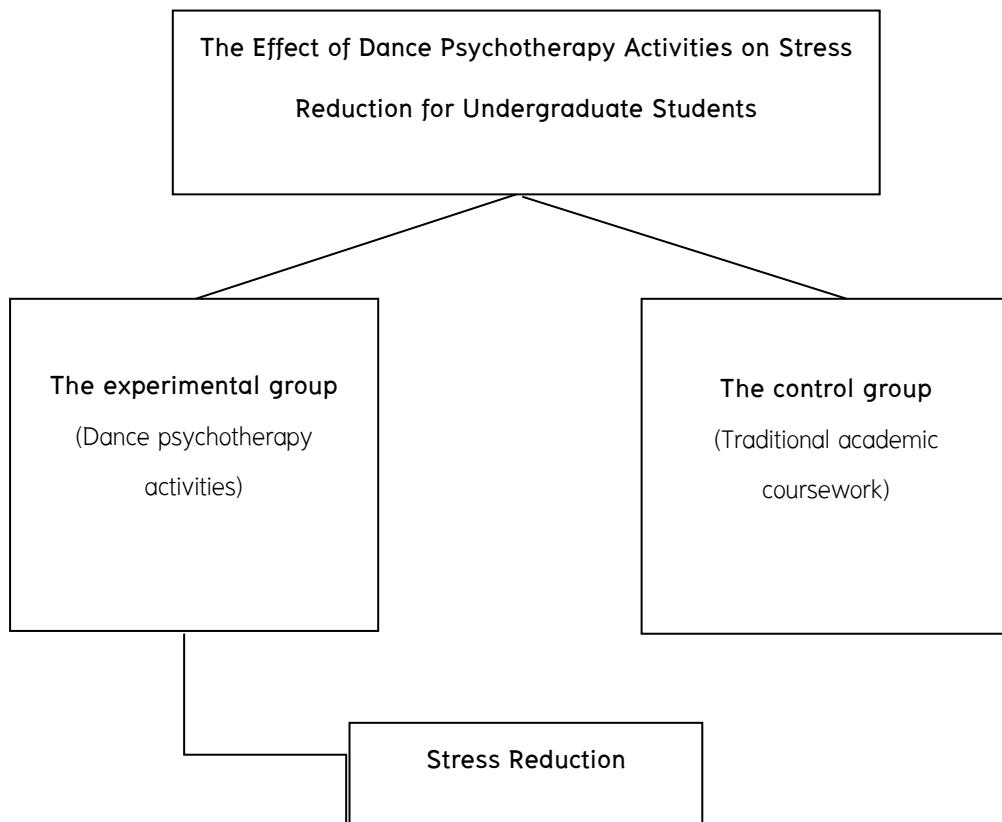


Figure 2 Research Framework Results Diagram

Discussion

1. Stress Among Undergraduate Students Before and After Participating in Dance Psychotherapy Activities

Participating in dance psychotherapy activities can significantly impact the stress levels of undergraduate students in several beneficial ways. Firstly, emotional states are positively affected as dance therapy provides an outlet for students to express and release pent-up emotions and pressures, thereby stabilizing and improving their emotional well-being. Secondly, anxiety levels tend to decrease following participation in dance therapy due to the combination of physical movement and emotional expression, promoting emotional stability among participants. Additionally, the physical manifestations of stress, such as muscle tension and rapid heartbeat, are mitigated through techniques like deep breathing and relaxation practiced during dance sessions. Socially, dance therapy fosters a supportive environment where students can connect with peers, enhancing their social support network and further reducing stress and anxiety. Moreover, participation in dance therapy enhances self-awareness, helping students better understand their

emotional and physical states and develop effective coping strategies for managing stress and anxiety. Studies by Yang et al. (2020) and Sun (2019) corroborate these findings, demonstrating that prolonged engagement in sports dance and cha-cha exercises respectively improves emotional resilience and coping mechanisms among undergraduates, thereby reducing stress responses. Gong et al. (2019) further support these conclusions by highlighting the social and emotional benefits of sports dance practice over conventional health sports programs. In summary, dance psychotherapy activities offer a holistic approach to alleviating stress and anxiety among college students, contributing to enhanced mental health and emotional stability.

2. Stress Among Undergraduate Students Between the Experimental Group and the Control Group

Comparing the stress levels between the experimental and control groups before and after participation in dance psychotherapy activities reveals significant differences. Initially, the experimental group exhibited higher stress scores compared to the control group. However, after engaging in dance psychotherapy activities, the experimental group demonstrated a notable reduction in stress levels across various dimensions. In contrast, the control group, which did not participate in dance therapy but engaged in alternative activities like music appreciation, did not show significant improvements in stress reduction. Research indicates that college students undergo substantial stress due to academic, personal, and societal pressures during a critical phase of individual development. Engaging in dance therapy serves as an effective intervention to alleviate these pressures, as evidenced by Gerber et al. (2014), who found that regular dance exercise correlates with reduced levels of depression and anxiety among stressed individuals. This relationship underscores the unique stress-relieving benefits of dance therapy compared to other forms of physical activity.

In conclusion, participation in dance psychotherapy activities significantly reduces various pressures and negative emotions experienced by college students, positively impacting their overall physical and mental well-being, as well as academic performance.

Knowledge from Research

This study reveals the distinct effectiveness of dance psychotherapy in reducing stress among college students, thereby positively influencing their overall well-being and academic performance as follows.



Figure 3 knowledge from research

Conclusion

This study aimed to investigate the effect of dance psychotherapy activities on stress reduction among undergraduate students. According to the research objectives, the research findings showed that: (1) The current stress on undergraduate students is moderate (2) After attending the activities, the experimental group's stress level decreased. (3) The stress level of undergraduate students between the experimental group and the control group was different ($p < 0.01$). This suggests that dance psychotherapy has potential benefits in reducing stress responses in undergraduate students.

Suggestions

Based on the findings and limitations of this study, the following recommendations and implications for future research are provided:

(1) Diversify participant demographics: Future studies should expand dance psychotherapy activities to include students from various academic disciplines such as medicine, science, and humanities. This approach will offer insights into how different student populations benefit from such interventions.

(2) Promote public awareness and participation: It is recommended to integrate dance and psychotherapy activities into public courses and enhance sports dance programs, particularly focusing on promoting the benefits of psychotherapy through dance. This initiative aims to increase undergraduate participation, helping them manage negative emotions, reduce psychological pressure, and enhance subjective well-being, thereby preventing psychological disorders.

(3) Enhance mental health support in higher education: Colleges and universities should prioritize the mental health of undergraduates by implementing regular mental health assessments to monitor students' psychological well-being. Based on these assessments, educational institutions can establish mental health education courses and provide accessible psychological counseling platforms. These initiatives will ensure that students have access to professional psychological support tailored to their needs.

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