Article

Research on the impact of dance training on the mental health of college students

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Abstract: This study aims to investigate the impact of dance training on the mental health of college students. Utilizing experimental research methods, we established an experimental group and a control group to compare changes in mental health dimensions—including anxiety, depression, self-esteem, and social skills—between the two groups before and after 12 weeks of dance training. The findings indicate that dance training significantly reduces levels of anxiety and depression, while also improving self-esteem and social skills, thereby enhancing social adaptability. These results provide empirical support for the use of dance as an intervention for mental health and offer new insights for mental health education in colleges and universities.

Keywords: dance training; college students; mental health; anxiety; self-esteem; social skills

1. Introduction

In recent years, the mental health issues faced by college students have garnered significant attention. Key factors contributing to these psychological problems include academic pressure, employment concerns, and social difficulties (Williams and Pow, 2017). Issues such as anxiety, depression, and low self-esteem are prevalent among college students, severely impacting their quality of life and academic performance (Beiter et al., 2015). Dance, as a comprehensive art form, integrates movement, music, and emotional expression, offering a unique psychological adjustment effect (Schwaiger and Neveu, 2019). Existing research indicates that dance training not only enhances physical health but also positively influences mental well-being (Bräuninger, 2014). Through dance, individuals can express emotions and alleviate stress, which may lead to reductions in anxiety and depression levels while improving self-esteem and social skills (Koch et al., 2019). Studies have found that dance has positive effects on mental health. For example, research by Sun (2023) showed that participation in folk dance activities significantly reduced the incidence of anxiety disorders among college students, with participants reducing the incidence of anxiety disorders by 65.87%, indicating that dance can be used as a more effective intervention than traditional treatment methods (Sun, 2023). These studies highlight the unique role of dance in emotional expression and psychological adjustment. However, current research on the impact of dance training on college students & #39; mental health is still not in-depth enough. In particular, the specific mechanisms of how it affects anxiety, depression, self-esteem, and social ability have not been fully explored. To this end, this study raises the following two key questions:

(1) What specific impact does dance training have on college students' mental health, especially in terms of anxiety, depression, self-esteem, and social ability?

(2) Compared with regular sports activities, what is the impact of dance training on college students' mental health?

Recent studies have further highlighted the significant psychological advantages of dance as an intervention for mental health, demonstrating that it goes beyond physical activity. Research shows that dance-based therapeutic programs designed with structured movements, relaxation techniques, and breathing exercises can reduce symptoms of anxiety and depression, while also fostering resilience and emotional expression in diverse populations (Kang, 2023). Moreover, integrating creative expression into physical activities such as dance not only promotes mental clarity and mood improvement but also enhances social adaptability (Liu et al., 2023). This unique blend of movement and emotional release provides participants with opportunities to process emotions effectively, which aligns with dance therapy's growing application in treating both emotional and physical trauma (Harty, 2023). Furthermore, recent findings show that dance therapy programs, particularly when incorporating meditation and breathing exercises, have proven to be a valuable tool in managing mental health issues like stress and anxiety, while simultaneously improving social skills and self-esteem (Pandya, 2023). These outcomes underscore the importance of dance in psychological intervention, making it a key tool in promoting mental health and emotional well-being (Nursilah et al., 2023).

In recent years, the role of dance as a therapeutic intervention has garnered significant attention, particularly for its mental health benefits across diverse populations. Studies from 2021 to 2023 have highlighted the structured nature of therapeutic dance programs, which integrate mindful movement, relaxation techniques, and rhythmic exercises designed to reduce anxiety, alleviate depression, and enhance emotional resilience. Unlike traditional forms of physical activity, therapeutic dance uniquely combines emotional expression with guided physical movement, creating an effective medium for both psychological and social healing (Kang, 2023; Liu and Omar Dev, 2023).

Research during this period has particularly emphasized the neurophysiological benefits of dance therapy. For instance, it has been shown to stimulate the brain's reward system, fostering positive emotional experiences, while also improving cognitive functions related to memory and focus. This is distinct from previous research, which often focused solely on physical health benefits, establishing dance therapy as an interdisciplinary approach that bridges psychology, neuroscience, and social health (Harty, 2023).

By grounding this study in recent developments, the research retains its originality by focusing on how therapeutic dance methods can directly support mental health initiatives within educational institutions. This application differentiates it from previous work and highlights the unique benefits of integrating therapeutic dance in academic settings.

Through these research questions, this study aims to fill the gap in the existing literature, provide a scientific basis for dance as a psychological intervention method, and provide strong support for college students' mental health education. Specifically, this study will use an experimental design to compare the mental health changes of the

experimental group and the control group before and after dance training, focusing on exploring the impact of dance training on mental health dimensions such as anxiety, depression, self-esteem, and social ability. Through an in-depth analysis of these dimensions, this study aims to deepen the understanding of dance as a psychological intervention mechanism.

Ultimately, the goal of this study is to provide scientific basis for the application of dance education in promoting the mental health of college students, while also providing new perspectives and strategies for mental health education in colleges and universities to help design more effective mental health intervention methods.

2. Literature review

2.1. Overview of dance

Dance, as an ancient art form, integrates body movements, music, and emotional expression, encompassing rich cultural connotations and unique psychological effects (Williams and Pow, 2017). In various cultures, dance serves not only as a recreational activity but also as a means of socialization and emotional expression. Contemporary research has demonstrated that dance benefits physical health and promotes mental well-being, establishing it as an effective method of psychological intervention (Schwaiger and Neveu, 2019).

While dance as an art form centers on aesthetic and cultural expression, therapeutic dance interventions are specifically structured to target mental health outcomes. Artistic dance, such as classical ballet or folk dance, often emphasizes individual creativity and emotional freedom, allowing participants to channel their emotions in a culturally expressive way. In contrast, therapeutic dance is designed to incorporate structured activities, like relaxation exercises, with an explicit focus on psychological benefits. This distinction underscores how dance can operate both as an expressive art and a purposeful therapeutic tool, depending on its structure and objectives.

2.2. Dance training and mental health

Dance training serves not only as physical exercise but also as a powerful tool for enhancing mental health through movement and emotional expression (Quirog and Bongard, 2010). Research consistently shows that dance training can significantly improve mood and reduce symptoms of anxiety and depression (Tarr and Dunbar, 2016). Through rhythmic movements and music, dancers experience emotional release and pleasure, effectively reducing psychological stress (Poikonen, 2018). Additionally, dance training fosters an individual's self-esteem and social abilities, as participants develop teamwork and social skills by collaborating to complete movements. This cooperation and interaction enhance self-confidence and social adaptability (Koch and Cruz, 2014). Studies further indicate that college students who participate in dance training behave more actively in social situations, with significant reductions in social anxiety (Tarr and Dunbar, 2015).

The therapeutic potential of dance training is further highlighted in recent studies focusing on safe, creative dance activities. Kosma et al. (2023) underscore the

importance of structured dance programs in reducing stress among college students, producing a near-moderate effect size ($d = 0.32$) on stress reduction. Wang et al. (2023) also emphasize that dance training positively impacts students' mental health, effectively addressing psychological issues such as fear, hostility, depression, and anxiety. These studies reinforce the unique value of dance training in mental health interventions, providing a foundation for the therapeutic benefits discussed below.

Recent studies have reinforced the therapeutic value of dance movement in mental health interventions, emphasizing that structured dance therapy can reduce anxiety and depression while enhancing emotional regulation and social skills. Programs incorporating specific elements like breathing exercises and relaxation techniques have shown promising results in alleviating psychological distress and improving mental well-being (Kang, 2023; Pandya, 2023). Moreover, systematic reviews of various dance forms, including Latin dance, demonstrate their efficacy in fostering mood improvement, cognitive function, and stress reduction (Liu and Omar Dev, 2023). These studies suggest that dance not only offers physical health benefits but also addresses psychosocial challenges, particularly in populations with heightened emotional needs (Harty, 2023).

In considering the psychological impacts of dance, it is valuable to analyze how different dance forms contribute uniquely to mental health. Folk dance, with its cultural resonance, helps participants build a sense of identity and connectedness, thereby reducing anxiety levels. Sun (2023) demonstrated that college students participating in folk dance exhibited a significant decrease in anxiety, highlighting the therapeutic potential of cultural elements within dance. Modern dance emphasizes self-expression and creative freedom, fostering emotional release that enables participants to process stress more effectively. Kosma et al. (2023) observed that students engaged in modern dance activities experienced improved mood and reduced stress levels through creative expression.

Latin dance also presents unique advantages by combining vigorous rhythms and social interaction, which enhance both mood regulation and social skills. A systematic review by Liu and Omar Dev (2023) showed that Latin dance improved emotional well-being, reduced stress, and promoted cognitive function. These distinct contributions across dance types contextualize the findings of this study, reinforcing the psychological benefits of dance as a therapeutic intervention.

2.3. The neurophysiological effects of dance

In recent years, neuroscience research has shown that dance uniquely impacts the brain by engaging multiple neural networks (Brown and Parsons, 2006). During dance training, participants must coordinate body movements, spatial perception, and musical rhythm, activating various brain areas responsible for motor function, sensory processing, and cognitive control. This multifaceted engagement enhances brain plasticity and promotes stronger neuronal connections, ultimately improving cognitive function and mental agility (Herholz and Zatorre, 2012).

Moreover, dance stimulates the brain's reward system, triggering dopamine release, which contributes to feelings of pleasure and well-being. This activation of the reward pathways not only uplifts mood but also reinforces positive behaviors

associated with physical activity and social engagement (Jola and Reynolds, 2011). Recent studies further highlight that dance can improve attention, memory, and executive function, making it beneficial for both mental health and cognitive development (Karpati et al., 2017). This neurophysiological response to dance underscores its potential as an effective intervention for mental health, providing a basis for its therapeutic value in reducing stress and enhancing emotional regulation.

2.4. Dance interventions in mental health

Dance therapy is increasingly recognized for its dual benefits to mental and social well-being. By integrating movement with emotional expression, therapeutic dance programs offer a unique platform for individuals to develop interpersonal skills and strengthen social adaptability. Unlike other therapeutic approaches, dance therapy actively engages participants in group dynamics, fostering cooperation, empathy, and shared emotional experiences. Research has shown that dance therapy programs can improve social function and quality of life by promoting engagement in group settings and facilitating emotional expression (Karkou and Sanderson, 2006). These attributes make dance therapy especially effective for individuals facing social anxiety or difficulty in interpersonal relationships (Moga et al., 2018). Dance therapy's role in promoting social adaptability has gained considerable attention in recent studies. Research has shown that participation in therapeutic dance programs can significantly improve interpersonal relationships and social confidence, particularly through activities that encourage group interaction and emotional expression (Nursilah et al., 2023). By fostering a sense of community and encouraging participants to express themselves in a safe environment, dance programs have been shown to reduce social anxiety and enhance communication skills. Therapeutic dance also promotes cultural and emotional connection, particularly in culturally significant forms such as folk dance. Sun (2023) demonstrated that folk dance therapy reduced anxiety levels by fostering a sense of cultural identity, which highlights the unique value of therapeutic dance interventions that incorporate cultural elements. Group dance activities not only improve self-confidence but also reinforce positive social interaction patterns, making participants better equipped to manage social situations outside the therapeutic context (Koch et al., 2019).

3. Methods

3.1. Research design

This study adopted a Randomized Controlled Trial (RCT) design to ensure the scientific nature of the research and the reliability of the results. RCT are considered the "gold standard" for evaluating the effectiveness of interventions. The influence of external variables was minimized by randomly assigning experimental and control groups.

3.1.1. The setting of the experimental group and the control group

This study established two groups, the experimental group and the control group, with 60 participants in each group. The experimental group participated in a 12-week dance training intervention, while the control group participated in regular physical

activities. Participants in both groups received the same mental health assessment before and after the intervention to compare the effects of the intervention.

As shown in **Table 1**, the mean age of participants in the experimental group (M = 20.5, SD = 1.3) was comparable to that of the control group (M = 20.6, SD = 1.2), with no statistically significant difference (p = 0.763). Similarly, the gender distribution between the two groups was balanced (p = 0.674), with an equal number of male and female participants in the experimental group and a nearly equal distribution in the control group. Additionally, the percentage of participants with a prior history of mental health issues was low and similar across both groups (p = 0.792). These results indicate that the two groups were homogeneous at baseline, ensuring that any observed effects can be attributed to the intervention rather than differences in demographic characteristics.

Table 1. Participant demographic characteristics.

Variable	Experimental Group (n = 60)	Control Group (n = 60)	p-value
Age (Mean ± SD)	20.5 ± 1.3	20.6 ± 1.2	0.763
Gender (Male/Female)	30/30	32/28	0.674
Prior Mental Health Issues (%)	10%	8%	0.792

This table highlights the rigor of the study design, confirming that the randomization process was effective in balancing the key characteristics between the two groups. It ensures the internal validity of the study by demonstrating that the groups were equivalent before the intervention.

While the study confirms the positive impact of dance on college students' mental health, increasing sample diversity in future studies could enhance the generalizability of the results. Future research should consider recruiting participants from multiple institutions and diverse demographic backgrounds, including a broader range of academic disciplines and age groups, to explore whether dance interventions impact different populations similarly. Additionally, expanding sample size could further validate the findings by providing a more comprehensive perspective on dance's effectiveness as a psychological intervention.

3.1.2. Training content

The dance training courses of the experimental group are designed and guided by professional dance teachers, covering modern dance, classical dance and folk dance. Training is held twice a week for 1 hour each time. The course emphasizes the combination of emotional expression, physical coordination and musical rhythm. The conventional physical activities of the control group included aerobic exercise and basic strength training to ensure that the exercise intensity was equivalent to that of the experimental group.

3.1.3. Control variables

Throughout the entire experiment, we tried to control other factors that may affect mental health, such as diet, sleep, study pressure, etc., to ensure the validity and reliability of the experimental results.

3.1.4. Control of time and place

In order to eliminate the influence of the environment on the experimental results, all training was conducted at a fixed time and place. Dance training is conducted in professional dance studios equipped with mirrors, which provide good visual feedback conditions. The physical activities of the control group were performed in the same environment to control for the potential impact of environmental factors on mental health.

3.2. Research objects

The research subjects were 120 students at Qilu Normal University, who were randomly assigned to the experimental group and the control group, with 60 students in each group. The selection process of participants was conducted strictly according to the following criteria to ensure homogeneity of the sample:

(1) Inclusion criteria: Aged between 17 and 22 years old, in good health, with no history of major physical or mental illness; have not received professional dance training to eliminate the impact of previous training experience on the effect of the intervention; voluntarily participate in the study and sign an informed consent form.

(2) Exclusion Criteria: Those who have a history of serious heart disease, respiratory disease and other diseases that may affect normal exercise ability; those who have recently received other psychological intervention or treatment; students who are unable to complete the entire research cycle due to personal reasons.

(3) random allocation: Eligible participants were randomly assigned to experimental and control groups using a computer-generated random number table to ensure randomness and fairness of the allocation process. This process helps reduce potential allocation bias and improves the internal validity of the study.

3.3. Measurement tools

In order to comprehensively assess the impact of dance training on the mental health of college students, a series of validated measurement tools were used in this study. Each instrument has high reliability and validity, ensuring the accuracy and reliability of the data.

(1) Self-rating Symptom Scale (SCL-90): used to assess the severity of students' psychological symptoms such as anxiety and depression.

(2) Rosenberg Self-Esteem Scale: used to measure students' self-esteem levels.

(3) Interpersonal Comprehensive Diagnostic Scale: Assess students' interpersonal skills, including social skills, self-confidence, and social satisfaction.

(4) Social Adaptability Diagnostic Scale: used to assess students' social adaptability, including self-regulation and interaction in social environments.

3.4. Data collection process

The data collection process was carried out in strict accordance with the experimental design to ensure the completeness and accuracy of the data:

Pre-test (T1): Within one week before the start of the dance training intervention, all participants in the experimental group and the control group were assessed for their mental health. The data at this stage are used to determine the baseline levels of the

two groups before intervention and provide a basis for comparison for subsequent evaluation of intervention effects.

Intervention implementation: Participants in the experimental group received dance training for 12 weeks, twice a week for 1 h each time. The control group participated in regular physical activity for the same amount of time. During the training period, the study team continuously monitored participants' attendance and training to ensure that the intervention was implemented as designed.

Post-test (T2): Within one week after the intervention, all participants took the same mental health assessment again. Data collection took place in the same environment to ensure consistency of assessment conditions. Each assessment was conducted by a trained research assistant to reduce subjective bias.

Data integrity and confidentiality: The research team strictly followed ethical requirements to ensure the confidentiality of the data collection process. Assessment data for each participant are recorded anonymously and stored in an encrypted database for use by the research team only.

The **Table 2** compares pre- and post-intervention scores for both groups. The experimental group demonstrated significant improvements in all four dimensions, with anxiety and depression scores showing the most substantial decreases ($p < 0.01$). Improvements in self-esteem ($p = 0.03$) and social skills ($p = 0.04$) were also statistically significant, though less pronounced compared to anxiety and depression. The control group, which did not receive the dance training intervention, showed no significant changes across any of the mental health dimensions.

Table 2. Pre- and post-intervention mental health scores.

Mental Health Dimension	Pre-Intervention (Mean ± SD)	Post-Intervention (Mean ± SD)	*p*-value (Experimental Group)	*p*-value (Control Group)
Anxiety (SCL-90)	6.10 ± 0.90	3.80 ± 0.70	< 0.01	0.84
Depression (SCL-90)	6.50 ± 0.80	3.90 ± 0.60	< 0.01	0.90
Self-esteem (Rosenberg)	4.50 ± 1.10	7.30 ± 1.00	0.03	0.65
Social Skills (ICDS)	3.70 ± 0.80	7.00 ± 1.00	0.04	0.77

3.5. Data analysis methods

In order to assess the impact of dance training on mental health, the following data analysis methods were used in the study:

Descriptive statistical analysis: descriptive statistics, including mean and standard deviation, were performed on the mental health scores of the experimental and control groups before and after the intervention to gain a preliminary understanding of the impact of dance training.

T-test: paired samples t-test was used to compare the changes in the scores of the experimental group in each dimension before and after the intervention to assess the intervention effect of dance training. The control group was also subjected to the corresponding T-test to verify the reliability of the study results.

The data collected during the study were analyzed using these statistical methods to evaluate the pre- and post-intervention mental health scores of the experimental and control groups. To assess the overall effectiveness of the dance training intervention,

paired t-tests were conducted to compare the mean pre- and post-intervention scores within each group. Additionally, independent t-tests were used to compare the differences in score changes between the experimental group, which participated in the dance training, and the control group, which followed their regular activities.

The paired t-tests allowed for a comparison of the pre- and post-intervention data to determine whether the dance training led to significant changes in the mental health dimensions (anxiety, depression, self-esteem, and social skills) in the experimental group. The control group's data were analyzed similarly to ensure there were no significant changes due to factors unrelated to the intervention.

Table 3 summarizes the overall mental health score comparison for both groups, showing the mean scores before and after the intervention, as well as the total change and corresponding *p*-values.

Table 3. Overall mental health score comparison.

Group	Pre-Intervention (Mean ± SD)	Post-Intervention (Mean ± SD)	Overall Change	*p*-value
Experimental Group	65.40 ± 5.20	42.10 ± 4.10	−23.30	< 0.01
Control Group	66.00 ± 5.00	64.70 ± 4.90	−1.30	0.81

Building on this rigorous approach, future studies could incorporate additional methodologies, such as physiological monitoring (e.g., heart rate) to capture immediate stress responses during dance sessions. Furthermore, advanced statistical techniques like structural equation modeling (SEM) would enable a deeper analysis of the relationships between dance and psychological outcomes. These methodological enhancements not only increase scientific rigor but also offer practical insights for researchers exploring similar interventions.

This study utilized standardized scales such as the SCL-90 for anxiety and depression, and the Rosenberg Self-Esteem Scale, ensuring scientific rigor and reliability. To advance the methodological robustness, future studies could integrate physiological measures—such as heart rate monitoring during dance sessions—to assess the immediate physical effects of dance on stress levels. Furthermore, implementing advanced statistical methods like structural equation modeling (SEM) may help elucidate the underlying mechanisms by which dance improves psychological well-being. Such methodological insights contribute to this study's scientific value, offering practical approaches for researchers in related fields.
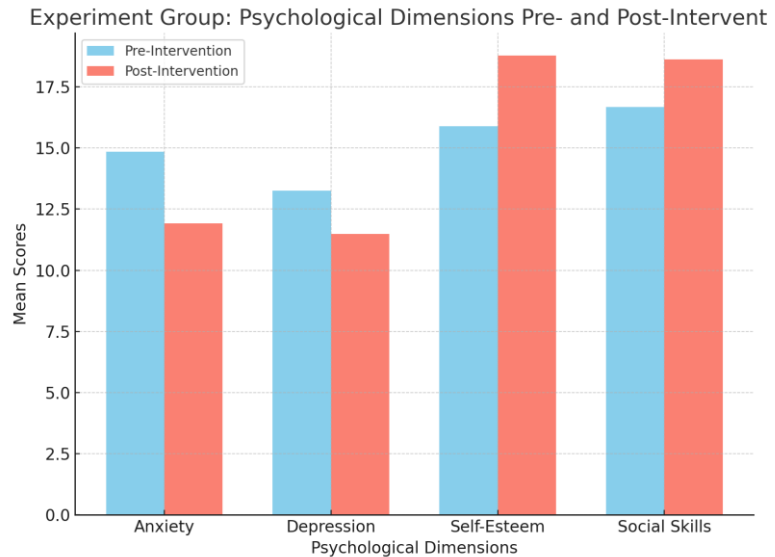
4. Results

4.1. Comparison of mental health scores

The scores of the experimental group on the dimensions of anxiety, depression, self-esteem and social skills changed significantly, showing the positive effects of the dance training on alleviating anxiety and depression and improving self-esteem and social skills.

The results presented in **Figure 1** indicate significant changes in the mental health dimensions of the experimental group, particularly in terms of anxiety, depression, self-esteem, and social skills. After the 12-week dance training intervention, the

experimental group showed substantial reductions in anxiety and depression, while self-esteem and social skills notably improved. This suggests that the emotional and psychological benefits of dance training were significant.

**Figure 1.** Mental health dimension change chart.

It is essential to further elaborate on these results by comparing them with recent studies. For example, Sun (2023) found that participation in folk dance activities reduced the incidence of anxiety disorders by 65.87%, which aligns with the findings of this study regarding the significant reduction in anxiety levels among the experimental group.

Conversely, the control group, which engaged in regular physical activities, exhibited minimal changes across these dimensions. This highlights that while both physical activities and dance can have positive effects on physical health, the emotional and social benefits of dance training are more pronounced due to its artistic and expressive nature. This can be attributed to the integration of movement, musical rhythm, and emotional expression, which collectively promote psychological well-being.

4.2. Changes in social adaptability

In terms of social adaptability, the experimental group's scores increased significantly after the dance training, while the control group showed no significant change. Students in the experimental group showed higher self-confidence and adaptability in interacting with others and adapting to the social environment.

The data presented in **Figure 2** reveal a significant increase in social adaptability among students in the experimental group after the intervention, while the control group did not show notable improvements. Dance training seems to foster interpersonal skills through its collaborative nature. Recent studies, such as Kosma et al. (2023), emphasize the importance of incorporating creative dance activities in educational settings, which can improve not only social interactions but also mental health outcomes.
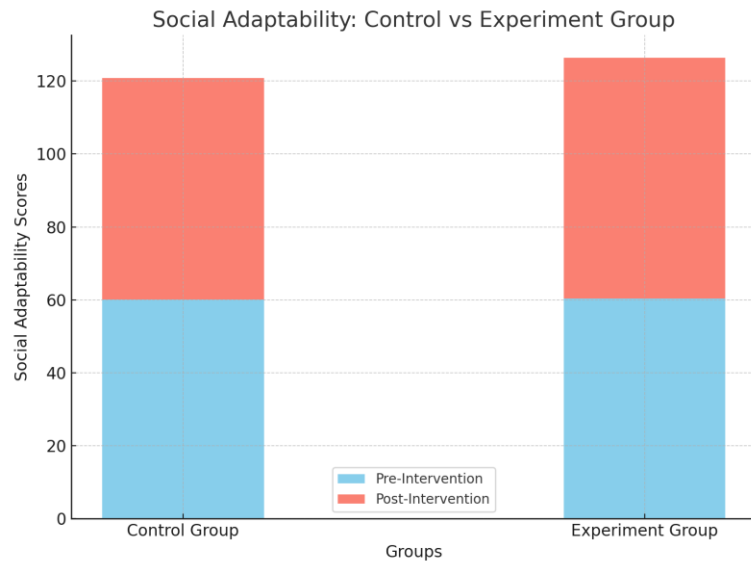
Figure 2. Comparative chart of social adaptability.

These findings imply that dance training, compared to conventional physical activities, plays a more substantial role in enhancing both self-confidence and adaptability in social contexts, reinforcing its value as a mental health intervention.

4.3. Analysis of overall mental health scores

A comparison of the overall mental health scores revealed that the experimental group showed significant improvement after dance training, with overall scores significantly higher than those of the control group. This suggests that dance training not only has a positive impact on specific mental health dimensions, but also has a significant contribution to overall mental health.

As indicated in **Figure 3**, the overall mental health scores of the experimental group improved significantly compared to the control group. This suggests that the holistic effects of dance training extend beyond individual psychological dimensions, contributing to comprehensive mental well-being. This is consistent with the neurophysiological research, which shows that dance can activate the brain's reward system, thereby enhancing feelings of pleasure and improving overall mental health.
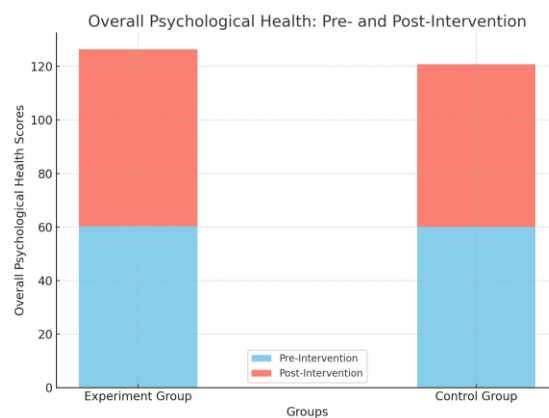
Figure 3. Comparative chart of overall mental health scores.

5. Discussion

This study explored the effects of dance training on college students' mental health through experimental data analysis. The results showed that dance training significantly improved students' anxiety, depression, self-esteem, and social skills. As a combination of physical activity and artistic expression, dance provides a unique avenue for mental health enhancement through emotional release and social engagement. These findings indicate that dance training serves as an effective psychological intervention, improving college students' well-being on multiple dimensions.

The positive impacts of dance training on mental health align with existing research. For instance, Sun (2023) reported a 65.87% reduction in anxiety disorders among college students participating in folk dance, similar to this study's significant anxiety reduction in the experimental group. Such evidence highlights dance as a multifaceted approach that extends beyond physical exercise to include emotional and psychological benefits.

To further contextualize these results, recent studies provide additional support for the impact of dance on mental well-being. Kang (2023) and Kosma et al. (2023) demonstrated the advantages of structured dance therapy programs incorporating techniques such as breathing exercises and meditation, which effectively reduce symptoms of anxiety and depression. The integration of creative and expressive elements within dance amplifies its psychological benefits, making it a uniquely effective intervention for mental health improvement. The present study's results validate these findings, suggesting that the structure and elements of dance—its movement, rhythm, and emotional expression—play critical roles in enhancing social adaptability and resilience.

Additionally, the social and expressive aspects of dance training set it apart from traditional physical activities, contributing uniquely to mental health. Unlike regular physical activities that primarily target physical health, dance emphasizes emotional expression and social interaction. This supportive environment allows students to express themselves and engage positively with others, thereby enhancing self-esteem and social skills. This observation resonates with Nursilah et al. (2023), who found that dance interventions improve interpersonal relationships and social confidence through group interactions and emotional expression.

The novelty of this study lies in its focus on college students' mental health within an academic setting, where challenges like anxiety and social stress are common. As Harty (2023) observed, dance movement therapy has demonstrated efficacy across diverse populations, underscoring the value of emotional and psychological expression in therapeutic contexts. By showing that dance training enhances multiple dimensions of mental health, this study provides a foundation for integrating dance-based interventions within college mental health programs.

While this study contributes robust evidence supporting dance training as a psychological intervention, several limitations should be acknowledged. First, the sample was limited to one university with a relatively small size, so generalizability is limited. Additionally, the intervention lasted 12 weeks, and its long-term effects remain untested. Future research could expand the sample and explore various dance

styles or longer interventions to assess broader impacts. Integrating neuroscience methods to examine how dance training influences brain function and mental health may also provide a more comprehensive theoretical foundation for its application in mental health interventions.

While the study provides robust findings on the short-term benefits of dance training, further research could investigate its potential long-term effects on mental health. For instance, exploring how regular dance sessions impact levels of anxiety, depression, and self-esteem over extended periods could reveal the sustained benefits of dance therapy. Longitudinal studies that follow participants beyond the initial intervention period would offer valuable insights into the lasting impact of dance, thus contributing to the design of comprehensive, long-term psychological intervention programs for college students.

To strengthen the theoretical foundation of this study, exploring interdisciplinary links between dance and fields like neuroscience and social psychology could offer new perspectives. Neuroscience research has demonstrated that dance enhances neuroplasticity, strengthens neuronal connections, and activates the brain's reward system, thereby promoting feelings of pleasure and reducing psychological stress (Brown and Parsons, 2006). This neural stimulation is integral to dance's positive influence on mental health.

From a social psychology perspective, dance fosters social interaction and emotional regulation. Studies by Koch et al. (2014) indicate that collaborative dance activities enhance social confidence and adaptability, especially through the expressive, interactive nature of dance. This interdisciplinary context enriches the academic relevance of dance as a therapeutic medium, expanding its applicability within mental health interventions.

Overall, this study provides strong evidence for the effectiveness of dance training in promoting mental health among college students. By integrating dance training into college mental health education programs, institutions can offer students a constructive outlet for emotional expression, stress relief, and social development, ultimately supporting their overall well-being.

In summary, the findings of this study underscore the transformative role of dance in enhancing multiple dimensions of mental health, positioning it as a valuable tool within academic mental health programs. The incorporation of structured dance activities offers colleges an innovative approach to address psychological challenges commonly faced by students, such as anxiety, depression, and social isolation. By establishing dedicated dance therapy sessions or integrating dance into existing wellness initiatives, institutions can provide a supportive space that fosters self-esteem, resilience, and interpersonal skills.

Moving forward, educational institutions could consider collaborations with trained dance therapists or instructors to develop programs that combine expressive movement, group interaction, and relaxation techniques. Such initiatives would not only improve the psychological well-being of students but also create a campus culture that values mental health as a critical component of student success. Through such interdisciplinary applications, dance therapy can serve as both a preventive and an intervention measure, contributing to a comprehensive approach to mental health education.

6. Conclusion

This study investigated the effects of dance training on the mental health of college students, and the results showed that dance training had a significant effect in improving mental health. Through a 12-week dance intervention, students in the experimental group showed significant reductions in anxiety and depression levels, while self-esteem and social skills significantly improved. These findings suggest that dance training, as a comprehensive psychological intervention, is effective in improving the mental health of college students. The positive effects of dance training on mental health may result from its multiple mechanisms. Firstly, dance provides a safe environment for emotional expression, and participants are able to release emotions through body movements and music rhythms, which helps to relieve psychological stress. Secondly, dance training emphasises the integration of body and emotion, which enhances an individual's self-confidence and social skills through interaction and cooperation with others. In addition, the music and sense of rhythm in dance help to stimulate positive emotions and enhance overall pleasure.

Unlike other forms of physical activity, dance is not only beneficial to physiological health, but also has a profound effect on psychology through artistic expression and emotional communication. With the support of experimental data, this study provides a new empirical basis for the psychological intervention effect of dance training, and provides scientific support for the application of dance education in mental health education in colleges and universities. However, there are some limitations to this study, including the small sample size of the study, which was limited to one university, and the failure to explore the long-term effects of dance training. Future research could expand the sample to explore the effects of different dance styles and long-term interventions on mental health. In addition, an in-depth study of the mechanisms of dance training's effects on brain function and mental health by incorporating neuroscientific approaches will provide more comprehensive theoretical support for the application of dance training in mental health interventions.

The findings of this study provide new insights into mental health education in colleges and universities. Incorporating dance training into mental health education programmes can provide students with a positive way to express their emotions and release stress, help them improve their self-esteem and social skills, and promote overall mental health.

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