

The Promoting Effect of Sports Dance Art Learning on College Students' Mental Health

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Abstract

The realm of sports dance exhibits elevated levels of aesthetic appeal and serves as an engaging avenue for fitness and entertainment. Combining elements of sports, dance, and music, sports dance offers a multifaceted platform conducive to the enhancement of both physical and mental well-being among college students, fostering an augmentation of their aesthetic acumen. In pursuit of this overarching significance, this study endeavours to investigate the catalysing influence of sports dance art education on the mental health of college students. This study focuses on a cohort of 50 university students enrolled in sports dance programs, utilizing a research methodology involving literature review, interviews, and statistical analysis to assess their mental health standard index scores. The collected data underwent rigorous statistical analysis via SPSS 16.0 software. A significance level (P-value) of greater than 0.05 suggests a lack of substantial disparity between the compared data groups, while P-values less than 0.05 indicate a notable distinction, and those below 0.01 denote a highly significant variance. Preceding the experiment, collegiate individuals were advised against holding overly optimistic views regarding the mental health standards associated with sports dance art education. Subsequent to the experiment's conclusion, a marked escalation in the mental health standards of college students was observed, with all pertinent health benchmarks and indicators demonstrating notable efficacy worthy of propagation. Following the experiment, discernible disparities were evident in the healthy personality traits and enriched emotional indicators among sports dance students, contrasting significantly with their pre-experiment states. Post-experiment, mental health indicators among sports dance college students follow this hierarchy: robust personality, heightened emotional depth, enhanced vitality, absence of psychological irregularities, and optimized cognitive faculties. We propose prerequisites to attract top talents and enhance existing educators' competencies. Instructors, acting as both executors and mentors, should inspire students with knowledge and charisma. Universities should diversify training and bolster pedagogical support for sports dance educators. Initiatives include expanded training opportunities and inter-institutional communication. In Yunnan Province, urgent short-term training and advanced education are needed to address the shortage of sports dance instructors and coaches. A long-term strategy is crucial to refine technical skills and performance.

Keywords: Sports Dance, Mental Health, College Students, College Students, Mental Health, Experimental Research.

Introduction

Body shape is not solely determined by genetic factors but also by environmental influences (Wang et al., 2021). College represents a pivotal phase in students' physical development. Although aspects such as height and organ development may seem less critical during this period, overall bodily development is notably sensitive and amenable to change. Thus, prioritizing physical fitness during college is paramount (Kahn et al., 2002). Various methods exist to enhance physical fitness among students, each exerting distinct effects on body composition. Sports dance, characterized by stringent posture, movement, and demeanour requirements, demands rigorous training to correct and refine posture, thereby fostering optimal body shape. Consequently, sports dance training in college settings can significantly enhance physical

health (Wu et al., 2021).

During sports dance practice, maintaining elongated and erect posture aligns with principles of sports aesthetics. Additionally, graceful posture exercises in sports dance facilitate coordinated and symmetrical development of body parts and muscles, thereby enhancing overall coordination and sensitivity (Shen et al., 2021). College students can effectively reduce excess body fat through structured sports dance exercises, enhancing overall body contour and promoting a more upright and aesthetically pleasing appearance (Keating et al., 2005; Tang & Guan, 2022). Given the propensity for sedentary lifestyles among many college students, engagement in sports dance activities facilitates the development of muscle strength and flexibility, thereby improving circulatory and respiratory functions, enhancing body balance, coordination, and holistic physical

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development (Xu & Du, 2021). Furthermore, the incorporation of beautiful music into sports dance routines ignites students' interest in physical activity.

Active participation in sports not only enhances physical fitness but also fosters mental well-being (Rodriguez-Ayllon et al., 2019). Research indicates significantly higher levels of mental health among frequent participants in sports dance activities compared to non-participants, underscoring the positive impact of sports dance on mental well-being (Ou et al., 2022). Sports dance serves as a conduit for stress alleviation, emotional release, and the cultivation of positive attitudes towards life and work, enhancing college students' mental health quality and equipping them to navigate societal challenges (Zheng & Ji, 2021). Additionally, participation in sports dance cultivates harmonious interpersonal relationships among college students (Cassidy et al., 2008).

Moreover, sports dance teaching embodies a robust fusion of sports culture and art, necessitating extensive study, research, and collaboration among participants. In China, dance performances require mutual cooperation, communication, learning, and assistance, fostering virtues of humility, trust, and cooperation among students. This platform not only enhances students' interpersonal relationship management skills but also underscores the high aesthetic and entertainment value of sports dance, integrating sports, dance, and music to effectively enhance the physical and mental health of college students while nurturing their aesthetic sensibilities. Thus, this research endeavours to explore the positive impact of sports dance education on college students' mental health.

Through a method of comparative experimental analysis, this study undertakes a psychological evaluation of ordinary college students engaged in sports dance education, juxtaposing their experiences against standard scales to substantiate the affirmative impact of sports dance on enhancing collegiate mental health. Consequently, the significance of promoting the influence of sports dance art education on college students' mental health resides in its potential to mitigate and ameliorate the psychological well-being of young adults during a pivotal phase of their development. College students frequently encounter an array of stressors, including academic pressures, social complexities, and transitional periods. Participation in sports dance art education yields manifold benefits that positively influence mental health. By fostering self-esteem, self-assurance, and favourable body perception, sports dance art education aids in cultivating a more robust sense of self and enhancing overall psychological welfare. Moreover, the communal nature of sports dance art engenders feelings of camaraderie and inclusion, thereby mitigating sensations of isolation and

solitude commonly experienced by college students. Dance activities afford an avenue for emotional expression, enabling students to channel their feelings and alleviate stress. The physical exertion inherent in sports dance art also triggers the release of endorphins, which can elevate mood and alleviate symptoms of anxiety and depression. The research encompasses five sections: an introduction, a literature review, a description of research methodology, data analysis and findings, and a discussion with future recommendations.

Literature Review

Some scholars define dance as a visual art form that unfolds within a specific temporal and spatial context, employing rhythmic human movements as its primary mode of expression (Guido, 2006; Sevdalis & Keller, 2011). Initially, dance utilized rhythmic gestures to convey thoughts and emotions, reflecting societal dynamics. Sports dance, akin to artistic gymnastics, figure skating, and synchronized swimming, amalgamates elements of sports and art, fitness and entertainment, featuring collaborative physical activities involving numerous participants. Engaging in sports dance training can elicit feelings of joy, alleviate stress, and foster physical and mental well-being, with particular emphasis on psychological health, thereby facilitating the holistic development of college students (Jinxing, 2020).

The foundational prerequisite for cultivating university students should be the cultivation of sound psychological attributes, as it underpins their prospects for success. A healthy psyche enables societal contributions and empowers individuals to channel their energies into learning and professional pursuits, continuously progressing towards higher levels (Johnson & Johnson, 2009). Extensive literature review reveals prevalent psychological issues among Chinese college students, indicative of low mental health levels and insufficient attention to psychological well-being. Therefore, investigating factors influencing college students' mental health and devising strategies to enhance their psychological resilience holds both theoretical and practical significance.

As sports dance gains popularity among college students and professionals alike, its role in sports and entertainment is increasingly acknowledged, sparking widespread interest. A plethora of studies underscore sports dance's capacity to elevate mental health levels (Biddle et al., 2019; Guo & Zhang, 2022; Wong et al., 2023). Consequently, sports dance education in universities assumes a pivotal role in fostering students' comprehensive development, aligning with the emerging paradigm of quality education aimed at nurturing both physical and mental well-being. Sports dance encompasses international standard social

dances, comprising standard (modern) dances like waltz, Viennese waltz, tango, foxtrot, and quickstep, alongside Latin dances including rumba, cha-cha, samba, paso doble, and jive. It constitutes a partnered duet sports competition, characterized by distinct dance music, steps, and styles adaptable to various music and choreographic demands. While sports dance emerged relatively late in China, its societal recognition is evident, with scholars delving into related issues.

Lauren et al. (2022) advocate for collaborative health interventions, exemplified by the CHIME Perinatal Mental Health Project in Gambia, which partnered with the local Kanyeleng group (Women's Reproductive Association) to devise and assess a brief intervention supporting maternal mental health through social singing. This underscores the value of co-creation, cultural embeddedness, and partnership building in global health research (Lauren et al., 2022). Similarly, Mao, J's review and meta-analysis aim to explore the impact of COVID-19 on college students' mental health and learning, employing electronic literature searches and rigorous inclusion criteria (Mao et al., 2021). In summary, sports dance holds significant aesthetic and fitness value, integrating elements of sports, dance, and music to effectively promote physical and mental health among college students, while also enhancing their aesthetic sensibilities. This article conducts a comprehensive analysis of sports dance's impact on college students' physical and mental well-being.

Research Methodology

Study Duration: The investigation and testing spanned a total of 120 days, commencing from March 1, 2022, to June 30, 2022, and took place within the gymnasium of a college of physical education (Chen et al., 2021).

Participants: The study involved 50 college students enrolled in the 2021 level sports dance class. Additionally, two mental health questionnaires were administered to the students before and after the experiment, with a time difference of 180 days between the pre- and post-experiment surveys. The questionnaires utilized a five-level evaluation method, with scores ranging from 1 to 5 points, where 5 points signified "very important," 4 points indicated "important," 3 points reflected "general," 2 points denoted "unimportant," and 1 point represented "very unimportant." The experiment assessed mental health based on five criteria (absence of psychological abnormalities, normal intelligence development, sound personality, abundant energy, and rich emotions), totalling 25 points. Psychological health was categorized into five levels based on scores: 4-8 points for very unhealthy psychology, 9-13 points for relatively unhealthy

psychology, 14-16 points for generally healthy psychology, 17-21 points for relatively healthy psychology, and 22-25 points for very healthy psychology (Li et al., 2021).

Data Analysis: The collected survey questionnaires were organized, invalid responses were removed, and valid data were summarized for statistical analysis to discern relationships between relevant factors. Descriptive statistics, employing frequency analysis, were utilized to determine the necessary proportions and describe the general statistical distribution, thereby revealing associations between pertinent factors. Multi-level scoring systems were employed to evaluate the results of the two psychological scales. Comparative analysis of experimental data pre- and post-experimentation was conducted. The gathered data underwent statistical processing using SPSS 16.0. A significance level (P-value) of greater than 0.05 indicates no significant difference between the two datasets, while P-values less than 0.05 denote a significant difference, and those below 0.01 signify a highly significant difference (Fruehwirth et al., 2021).

Results and Analysis

The Overall Situation of Psychological Health of Sports Dance College Students Before the Experiment Should not be Optimistic

Upon statistical analysis using SPSS16.0, the findings depicted in Table 1 reveal the pre-experiment state of psychological health standard indicators among sports dance students. The data indicates that prior to the experiment, the distribution of psychological health scores among students varied: individuals scoring 4-8 points, denoting very unhealthy psychology, accounted for 0% of the sample; those scoring 9-13 points, indicating relatively unhealthy psychology, represented 3.85%; respondents scoring 14-16 points, signifying general mental health, constituted 53.85% of the cohort; participants scoring 17-21 points, indicative of relatively healthy psychology, comprised 42.30%; and individuals scoring 22-25 points, reflecting very healthy psychology, constituted 0% of the group (Zhang et al., 2021).

These findings underscore the context of university campuses as hubs of talent, where individuals are poised at a pivotal juncture in their lives, brimming with aspirations for the future. Notably, the data reveals that less than half of the students exhibited either very healthy or relatively healthy psychological states, while the majority fell within the category of general mental health or exhibited signs of psychological distress. This significant discrepancy warrants attention from relevant leaders and departments (Britten et al., 2023).

Table 1

Investigation and Analysis of the Total Scores of Women's Mental Health Standards Before the Experiment (n=25)

| Index | 4-8Points | 9-13Points | 14-16Points | 17-21Points | 22-25Points |
|------------|-----------|------------|-------------|-------------|-------------|
| N | 0 | 1 | 13 | 11 | 0 |
| Percentage | 0% | 4% | 52% | 44% | 0% |

Comparison of the Overall Psychological Health of Sports Dance Students After the Experiment with that Before the Experiment

The findings presented in Table 2 elucidate the post-experiment state of psychological health standard scores among sports dance college students. Following the intervention, the collective psychological health standard score among students ranged from 9 to 13 points, indicating an absence of individuals with relatively unhealthy psychology, representing 0% of the sample—a decrease of one individual and 4 percentage points compared to pre-experiment levels. Meanwhile, the number of individuals scoring between 14 and 16 points, indicative of general mental health, amounted to 6 individuals, constituting 24% of the cohort—a decline of 8

Table 2

Investigation and Analysis Table of Female Mental Health Standard Total Scores After and Before the Experiment (n=25)

| Index | 4-8Points | 9-13Points | 14-16Points | 17-21Points | 22-25Points |
|----------------------------------|-----------|------------|-------------|-------------|-------------|
| Before the experiment N | 0 | 1 | 14 | 10 | 0 |
| After the experiment, N | 0 | 0 | 6 | 18 | 1 |
| The difference between N | 0 | 1 | 8 | -7 | -1 |
| Percentage before the experiment | 0% | 4% | 56% | 40% | 0% |
| Percentage after experiment | 0% | 0% | 32% | 72% | 4% |
| Difference in percentage | 0% | 4% | 24% | -32% | -4% |

Comparison of Mental Health Indicators of College Students After and Before the Experiment

Following the experiment, the psychological health indicators—including the absence of psychological abnormalities, normally developed intelligence, sound personality, abundant energy, and rich emotions—of sports dance college students were assessed and statistically analysed using SPSS16.0. The findings, as presented in Table 3 and Figure 1, indicate notable differences between the post-experiment and pre-experiment data for several indicators.

Specifically, the data concerning the "no psychological abnormalities" indicator exhibited a mean improvement of 0.15 points post-experiment compared to pre-experiment (F=2.13, P=0.043<0.05), signifying a significant difference. This suggests that over the 120-day period of sports dance

individuals or 24 percentage points from pre-experiment levels. Moreover, individuals scoring between 17 and 21 points, reflective of relatively healthy psychology, totalled 19 individuals, accounting for 72% of the group—an increase of 7 individuals and 32 percentage points compared to pre-experiment levels. Additionally, individuals scoring between 22 and 25 points, denoting very healthy psychological states, numbered 1 individual, representing 4% of the sample—an increase of 1 individual and 4 percentage points compared to pre-experiment levels (Braun & Kotera, 2022).

Evidently, college students' mental health has demonstrated varying degrees of improvement, particularly transitioning from general health to relatively healthy mental states, which saw a noteworthy increase of 32 percentage points. Notably, there were no individuals with very healthy or relatively unhealthy mental health states observed post-experiment, indicating a significant shift. Overall, the 120-day sports dance art education and learning intervention facilitated rapid advancements in the standard indicators of mental health among college students, yielding noteworthy outcomes meriting dissemination and promotion (Stubbe et al., 2021).

art education, the immersive experience of executing sports dance movements in harmony with the captivating rhythm of dance music gradually fosters the integration of students' cognitive processes and physical behaviours. Consequently, this integration contributes to mitigating the manifestation of psychological abnormalities among college students (Akpınar, 2021).

Moreover, the average "normal development intelligence" index data post-experiment showed a modest improvement of 0.27 points compared to pre-experiment (F=1.37, P=0.183>0.05), albeit without statistical significance. This suggests that while sports dance art education may yield some enhancement in intelligence, particularly in memory recall, the intricacies of intelligence factors, coupled with the standardized nature of college entrance examinations, render significant improvements challenging.

In contrast, the "healthy personality" index data exhibited a marked improvement post-experiment, with an average enhancement of 0.77 points compared to pre-experiment ($F=4.55$, $P=0.000<0.01$), indicating a highly significant difference. This suggests that sports dance art education instils students with a positive outlook, fostering hope for the future, adept management of interpersonal and social relationships, and a harmonious alignment of cognition, emotion, and behaviour, thereby enhancing overall personality well-being. Similarly, the "abundant energy" index data revealed a significant average improvement of 0.54 points post-experiment compared to pre-experiment ($F=2.67$, $P=0.013<0.05$). This underscores the role of sports dance art education in enhancing students' physical fitness and energy levels, thereby facilitating optimal engagement in academic and social endeavours (Le et al., 2021).

Lastly, the "rich emotional life" index data exhibited a notable average improvement of 0.54 points post-experiment compared to pre-experiment ($F=4.24$, $P=0.000<0.01$), indicating a highly significant difference. This suggests that the immersive experience of music and rhythm inherent in sports dance art education stimulates emotional depth among college students, fostering enriching interpersonal interactions and a sense of fulfilment in daily life.

In essence, sports dance art education serves as a multifaceted tool for enhancing the psychological well-being of college students, facilitating improvements in various dimensions of mental health and overall quality of

life (Abraham et al., 2020).

Table 3 demonstrates that following the experiment, the average score of the five indicators surpasses 3.5, nearing 4, indicative of a relatively healthy psychological state. This underscores the significant enhancement in the psychological well-being of college students attributed to 120 days of sports dance art education. However, college students represent the nation's future and are integral to its advancement. To serve the nation diligently in pivotal roles, continual improvement in their mental health is imperative. The descending order of T-values, ranging from 4.55 to 1.37, corresponds to the indicators of healthy personality, rich emotional life, abundant energy, absence of psychological abnormalities, and normally developed intelligence, respectively. Higher T-values signify greater changes observed before and after the experiment among college students, indicating a steeper improvement curve. Throughout the 120-day sports dance art education, students actively engage in communication with peers and educators, participate ardently in learning endeavours, and partake in meaningful activities, culminating in the cultivation of robust personality traits and emotionally enriched lives. Furthermore, the study of sports dance art education fosters significant improvements in physical and mental health, thereby enhancing physiological functions, sustaining sound sleep patterns, facilitating rational thinking, and fortifying resilience against psychological irregularities (Dyakov & Hong, 2021).

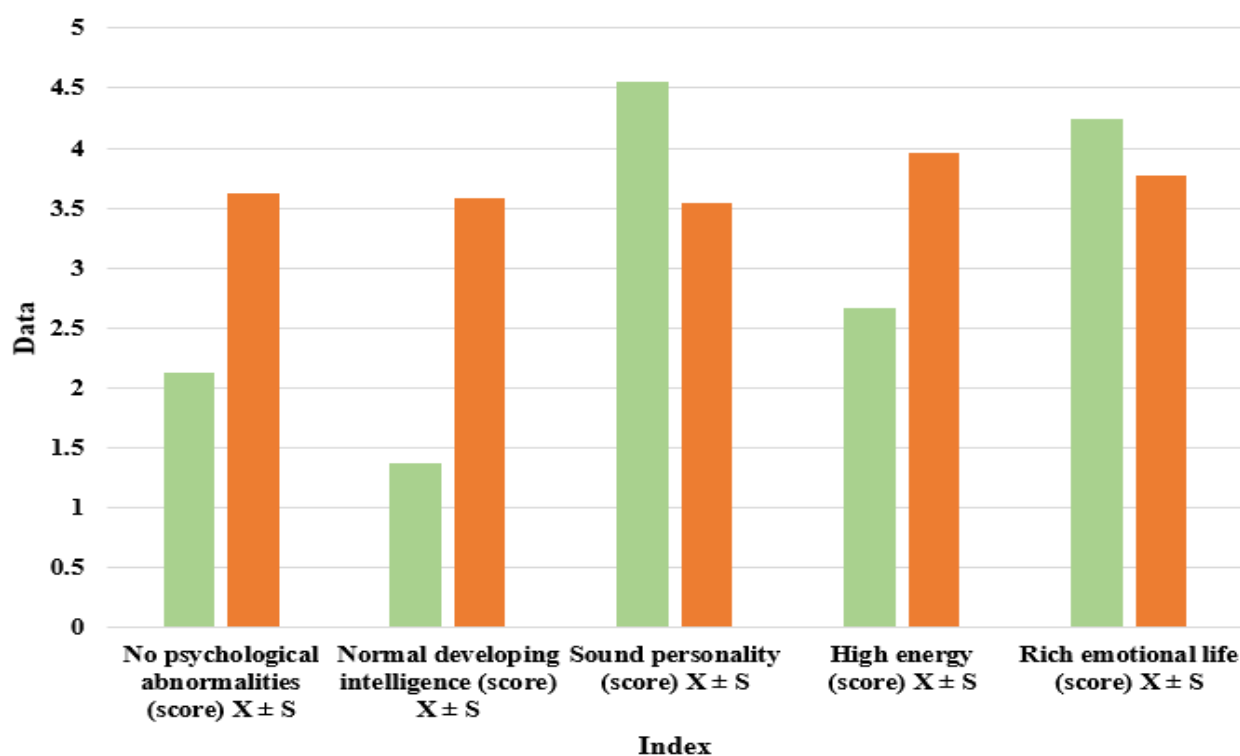


Figure 1: Comparison of T Values of the Mental Health Standard Indicators of College Students Before and After the Experiment.

Table 3

Comparison of Mental Health Standard Indicators of College Students After and Before the Experiment (n=25)

| Index | Before the Experiment | After the Experiment | D-Value |
|--|-----------------------|----------------------|---------|
| No Psychological Abnormalities (score) $X \pm S$ | 3.46±0.76 | 3.62±0.75 | -0.15 |
| Normal Developing Intelligence (score) $X \pm S$ | 3.31±0.73 | 3.58±0.70 | -0.27 |
| Sound Personality (score) $X \pm S$ | 2.77±0.65 | 3.54±0.81 | -0.77 |
| High Energy (score) $X \pm S$ | 3.42±0.81 | 3.96±0.72 | -0.54 |
| Rich Emotional Life (score) $X \pm S$ | 3.23±0.65 | 3.77±0.95 | -0.54 |

Discussion

Engaging in regular exercises such as rhythmic gymnastics and aerobics accelerates bodily movements and enhances fundamental activity capabilities, facilitating comprehensive muscle engagement and joint flexibility. Furthermore, these exercises cultivate an elegant body posture, rhythmic sensibility, and equilibrium proficiency among college students, while also augmenting their musical aptitude and expressive skills. Consequently, rhythmic gymnastics and aerobics are highly favoured by female college students and esteemed as pivotal components in the pursuit of physical fitness (Lin et al., 2022).

Sports dance, being a popular amalgamation of athletics and artistic expression, aligns with the objectives of contemporary educational reforms and serves to galvanize students' enthusiasm within physical education curricula. Additionally, sports dance contributes positively to the enhancement of students' physical and psychological attributes (Wang, 2023). As an embodiment of human movement artistry, sports dance assumes a distinctive role within physical education pedagogy, imparting invaluable educational insights. By juxtaposing the psychological and emotional dimensions of individuals with their bodily postures, sports dance accentuates the gracefulness of human movement, lines, and poise. Boasting a diverse repertoire of movements, sports dance demands a multifaceted skill set and imposes rigorous requirements on practitioners. For instance, it necessitates seamless movement coordination and swift transitions, fostering the enhancement of neural flexibility through consistent practice (Hua & Yu, 2022). Moreover, the intricate synchronization between dance sequences and musical accompaniment necessitates a heightened proprioceptive acuity. Regular practice significantly enhances overall bodily coordination, while sustained engagement fosters improved aerobic endurance and energy supply capacity. From a sociocultural perspective of sports, classes involving sports dance, aerobics, and rhythmic gymnastics serve as highly conducive environments for individuals to exchange ideas, convey emotions, overcome barriers, and engage in interpersonal communication. Enhanced by the

melodic backdrop of music, these settings effectively mitigate feelings of social isolation, fostering a harmonious and graceful ambiance that cultivates a heightened sense of interpersonal awareness and communication proclivity among participants. Consequently, the instruction of these courses not only enriches students' cultural experiences but also augments their interpersonal competencies, facilitating holistic physical and mental development. Furthermore, such instruction underscores the profound impact of these activities on individuals' fitness and mental well-being (Cai, 2022).

Implications and Future Recommendations

The study yields several significant theoretical implications. For instance, active engagement in sports dance art activities may bolster individuals' self-esteem and self-confidence. Moreover, participation in dance endeavours may cultivate a positive body image and enhance physical fitness, thereby positively impacting mental well-being. Furthermore, involvement in sports dance art may nurture a sense of belonging and interpersonal connection, particularly as it often involves collaborative group or partner activities. This social integration can mitigate feelings of loneliness and isolation, commonly associated with mental health challenges. Engaging in sports, dance, and artistic expression enables individuals to artistically express themselves, thereby aiding in emotion regulation and stress relief, thus contributing to improved mental health. Additionally, the research may stimulate new avenues of inquiry or enrich existing literature.

The study also holds practical relevance in real-life contexts. Introducing sports, dance, and art activities into extracurricular or academic curricula can systematically enhance students' mental health. Educational institutions can establish dance workshops or programs accessible to all students, fostering a sense of community and support through the creation of dance clubs or teams. Collaborating with mental health professionals or counsellors, colleges can design programs tailored to address mental health concerns through sports dance art, equipping students with coping strategies to manage stress, enhance self-

esteem, and promote overall mental well-being. By integrating athletics, dance, and the arts, college environments can adopt a comprehensive approach to bolstering students' mental health. Additionally, the study may inform sports organizations about the mental health benefits of athletic dance, thus encouraging the implementation of similar initiatives for athletes.

In light of the study's findings and contributions, several actions are recommended to further enhance the impact of sports, dance, and art education on college students' mental health. Institutions should allocate additional funds and resources to establish dedicated dance studios or facilities equipped with necessary amenities, ensuring universal access for all students. Collaborating with professional dancers, choreographers, and mental health specialists, institutions can develop comprehensive dance programs emphasizing mental health promotion, integrating physical exercise, creative expression, and psychological counselling to address diverse student needs and objectives. Furthermore, future research could explore the application of these findings in different cultural contexts, enhancing the generalizability of the study's implications for other countries.

Conclusion

Viewed from the perspective of social value in sports, sports dance, aerobics, and rhythmic gymnastics classes represent highly effective platforms for individuals to exchange ideas, articulate emotions, break down barriers, and engage in interpersonal communication. Moreover, rhythmic gymnastics and aerobics serve to nurture college students' graceful body posture, rhythmic sensibilities, and balance capabilities, while enhancing their musical acumen and expressive faculties. Consequently, these activities hold particular appeal for female college students and are esteemed as essential avenues toward physical development.

The pre-experiment psychological health standards for college students undergoing sports dance art education did

not evoke optimism. However, post-experiment, there was a rapid increase in the values of these psychological health standards, with various indicators attaining relatively healthy levels, signifying significant effects worthy of promotion. Notably, substantial differences were observed post-experiment in healthy personality and rich emotional indicators among sports dance students compared to before the experiment, alongside significant disparities in abundant energy and the absence of psychological abnormalities indicators. Conversely, there were no notable differences in the indicators of normal development of intelligence.

Following the experiment, the standard indicators of mental health for sports dance students exhibited notable improvements, characterized by a pronounced elevation arc, encompassing healthy personality, rich emotional life, abundant energy, absence of psychological abnormalities, and normally developed intelligence. It is our contention that certain prerequisites should be established to attract exceptional talents while concurrently enhancing the comprehensive capabilities of existing sports dance instructors. As educators and facilitators of physical education endeavours in universities, instructors should inspire and guide students through their extensive knowledge and personal charisma.

Administrative bodies within various universities should explore diverse avenues and fortify the pedagogical training of sports dance instructors to optimize their efficacy. Specific measures entail providing augmented training opportunities for sports dance instructors and fostering communication and exchange through academic forums and discussions. This not only addresses teaching challenges but also broadens intellectual horizons. Additionally, considering the current shortage of sports dance instructors and coaches in Yunnan Province, expedited medium to short-term training and further education initiatives for instructors and coaches are imperative to rapidly elevate their professional theoretical knowledge. Establishing a long-term approach to instructor-coach training is essential to enhance technical skills and performance expertise.

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