

# A Study on the Impact of Cheerleading on the Psychological Health of Female College Students

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**Abstract:** This study investigates the effects of technical cheerleading and dance cheerleading on the psychological health of female college students by utilizing the Symptom Checklist-90 (SCL-90), the Comprehensive Diagnostic Scale for Interpersonal Relationships, and the Social Adaptability Diagnostic Scale. The findings indicate the following: (1) Technical cheerleading has a highly significant impact on sensitivity in interpersonal relationships, paranoia, and psychoticism, and a significant effect on anxiety and hostility; dance cheerleading has a highly significant effect on paranoia; (2) Both technical and dance cheerleading have minimal impact on the overall score distribution of interpersonal relationships among female college students, but the dimensions of their effects differ; (3) The impact of technical cheerleading on the social adaptability of female college students is more pronounced than that of dance cheerleading.

**Keywords:** Technical cheerleading; Dance cheerleading; Female college students; Psychological health

**Online publication:** March 24, 2024

## 1. Introduction

This study investigates the intricate link between physical activity and psychological health, focusing on cheerleading—a sport that melds physical intensity, team dynamics, and performance stress—to assess its effects on the psychological well-being of female college students. By employing tools like the Symptom Checklist-90 (SCL-90), Comprehensive Diagnostic Scale for Interpersonal Relationships, and Social Adaptability Diagnostic Scale, it aims to thoroughly analyze how participation in technical and dance cheerleading influences various psychological dimensions. Highlighting the significance of exploring the psychological dimensions of college students, including stress, social support, and mental health, and their impact on academic and social success, this research builds on existing insights into anxiety, depression, and interpersonal sensitivity, as well as the role of social adaptability, to explore the potential benefits of cheerleading on psychological health.

## 2. Literature review

### 2.1. Overview of cheerleading

Cheerleading, as a physical activity that integrates dance, stunts, gymnastics, and team spirit, occupies a unique position in college athletics. It not only provides students with a platform to showcase their individual talents but also cultivates social skills, organizational skills, and leadership through teamwork. The research by Ю. В. Шушпанова underscored the importance of incorporating cheerleading into the physical education curriculum of higher education institutions, noting that this activity can enhance students' motivation for physical activity, optimize sports activities, and cultivate endurance, flexibility, and agility <sup>[1]</sup>. Furthermore, cheerleading is seen as an effective means to improve self-discipline, tolerance, social skills, and organizational skills, while also inspiring a long-term interest in a healthy lifestyle.

Cheerleading has significant potential benefits for physical and psychological development. It not only enhances physical fitness, such as strength, flexibility, and endurance but also has a positive impact on participants' psychological health. By engaging in cheerleading, students can build self-confidence, reduce stress, and improve self-efficacy through teamwork and competition <sup>[2]</sup>. As a team sport, cheerleading also promotes social interaction and team spirit, which are crucial for an individual's social development and psychological health <sup>[3]</sup>.

### 2.2. Current state of psychological health among female college students

A study by Ahmed and Julius highlighted the intricate relationship between academic performance and psychological health among women college students. The research indicated that psychological issues such as depression and stress significantly affect students' learning outcomes, emphasizing the necessity of a supportive environment to foster overall well-being <sup>[4]</sup>.

Research conducted by Hernández-Yépez *et al.* during the COVID-19 pandemic showed that 19.2%, 23.2%, and 17.2% of surveyed students experienced depression, anxiety, and stress, respectively. This study underscored the psychological impact of the pandemic on students, highlighting increased stress levels due to the shift in educational settings <sup>[5]</sup>.

A study by Gupta in Delhi found a significant prevalence of depression, anxiety, and stress among female college students, which was significantly correlated with disordered eating behaviors. This research emphasized the role of psychological health in influencing the dietary habits of young women <sup>[6]</sup>.

Matos and De Andrade explored how career adaptability, psychological capital, and psychological health indicators could predict occupational burnout among college preschool students. The findings suggested that stress and depression could lead to exhaustion, while perceptions of worry, anxiety, optimism, and resilience could prevent disengagement in the academic environment <sup>[7]</sup>.

### 2.3. Impacts of physical exercise on the psychological health of female college students

A study by Herbert discussed the potential of physical activity and exercise interventions in promoting the mental health of college students. The research emphasized that interventions focusing on low to moderate-intensity aerobic exercise could significantly alleviate symptoms of depression and anxiety, reduce perceived stress, and enhance overall well-being. This evidence highlights the importance of incorporating physical activities into the daily lives of college students to support their mental health <sup>[8]</sup>.

Malagodi *et al.* conducted a service mapping study to explore physical activity interventions aimed at improving the mental health and well-being of university students in the United Kingdom. The study revealed that only a minority of United Kingdom universities offer physical activity interventions for students, highlighting a gap in the provision of such programs. The existing interventions focused on enhancing students'

physical activity capabilities and opportunities, suggesting that universities need to offer more comprehensive physical activity programs to support students' mental health <sup>[9]</sup>.

El Ansari and Salam examined the relationship between physical activity and depressive symptoms among students at the University of Turku in Finland. The study found that adherence to guidelines for muscle-strengthening physical activities was significantly negatively correlated with depressive symptoms, indicating that specific types of physical activity might be particularly effective in improving the mental health of college students <sup>[10]</sup>.

These studies provide a theoretical foundation for this paper. While the psychological health issues of college students have received attention from various sectors of society, and physical activities have gradually been applied in activities for psychological health guidance, the impact of cheerleading on students' psychological health has not yet been confirmed. This study will explore this angle, offering valuable references for the formulation of strategies to promote mental health in higher education institutions.

### **3. Methods**

#### **3.1. Research subjects**

The study selected 80 students from the 2021 cohort of the Physical Education–Cheerleading elective course at Qilu Normal University, including 40 students from the technical cheerleading elective class and 40 from the dance cheerleading elective class.

#### **3.2. Measurement tools**

- (1) Symptom Checklist-90 (SCL-90): This checklist, compiled by Derogatis, consists of 90 items covering 10 factors, including somatization, obsessive-compulsive symptoms, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia, psychoticism, and others. It employs a 5-point Likert scoring method.
- (2) Comprehensive Diagnostic Scale for Interpersonal Relationships: Compiled by Richang Zheng *et al.*, this scale covers four dimensions (conversation, social interaction, interpersonal skills, and interactions with the opposite sex), totaling 28 items. There are “yes” and “no” options, with “yes” scoring 1 point and “no” scoring 0 points. A higher total score indicates more disharmony in interpersonal relationships. The total score ranges from 1–28, with 1–8 points indicating “good,” 9–14 points indicating “some trouble,” and 15–28 points indicating “serious trouble.” Individual dimension scores of 0–2 points indicate “good,” 3–5 points indicate “some trouble,” and 6 points or above indicate “serious trouble.”
- (3) Social Adaptability Diagnostic Scale: Compiled by Richang Zheng *et al.*, this scale consists of 20 items with three options (“yes,” “uncertain,” and “no”). Odd-numbered items are scored -2, 0, and 2 points, respectively, while even-numbered items are scored 2, 0, and -2 points, respectively. A higher total score indicates stronger adaptability. The total score ranges from 35–40 points indicating “very strong social adaptability,” 29–34 points indicating “strong,” 17–28 points indicating “average,” 6–16 points indicating “poor,” to 5 points or below indicating “very poor.”

#### **3.3. Survey distribution and data processing**

The questionnaire survey, including the SCL-90, Comprehensive Diagnostic Scale for Interpersonal Relationships, and Social Adaptability Diagnostic Scale, was conducted at the end of the semester (week 16), with 80 questionnaires distributed and 77 collected, yielding an effective recovery rate of 96.25%. All data were processed using SPSS software version 24.0.

## 4. Results

### 4.1. Impact of cheerleading on the psychological health of female college students

As shown in **Table 1**, to examine the impact of different activities on psychological health, the post-experiment scores of students on the SCL-90 scale were compared with the national norm for college students. The results showed that there were highly significant differences in the interpersonal sensitivity, paranoia, and psychoticism factors for the technical cheerleading group ( $P < 0.01$ ); significant differences were observed in the anxiety and hostility factors ( $P < 0.05$ ); and highly significant differences were noted in the paranoia factor for the dance cheerleading group.

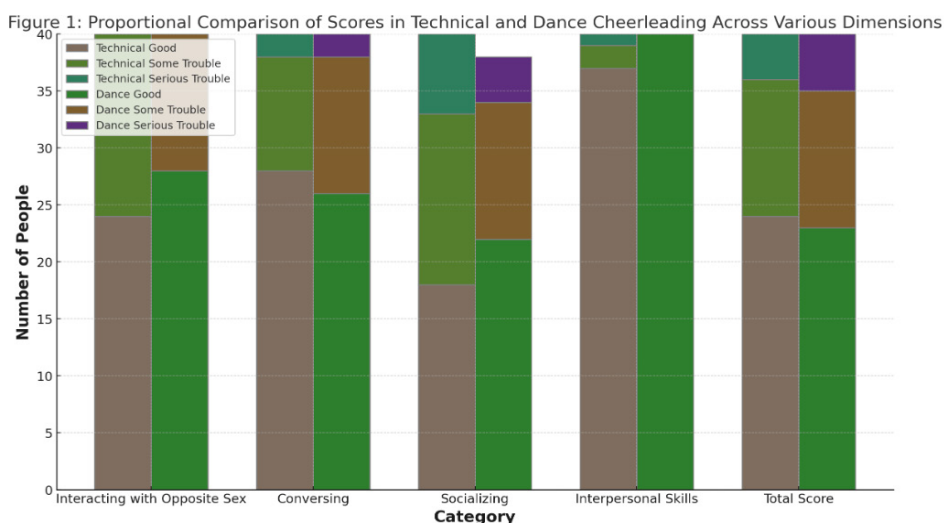
**Table 1.** Post-experiment SCL-90 scores compared with the national norm for college students for technical and dance cheerleading class factors

Factor	Technical cheerleading (n = 40)	<i>t</i>	<i>P</i>	Dance cheerleading (n = 40)	<i>t</i>	<i>P</i>	National norm (n = 5973)
Obsessive-compulsive	1.76 ± 0.49	0.58	0.54	1.83 ± 0.51	1.01	0.28	1.87 ± 0.62
Interpersonal sensitivity	1.41 ± 0.50	2.89	0.00**	1.62 ± 0.46	0.65	0.45	1.79 ± 0.59
Depression	1.51 ± 0.32	1.44	0.12	1.69 ± 0.49	0.25	0.77	1.67 ± 0.62
Anxiety	1.31 ± 0.23	2.47	0.012*	1.51 ± 0.41	0.22	0.81	1.55 ± 0.54
Hostility	1.38 ± 0.38	2.14	0.02*	1.41 ± 0.37	1.76	0.07	1.58 ± 0.59
Phobic anxiety	1.36 ± 0.27	1.28	0.16	1.36 ± 0.33	0.23	0.81	1.40 ± 0.51
Paranoia	1.35 ± 0.35	2.87	0.00**	1.34 ± 0.24	2.86	0.00**	1.63 ± 0.57
Psychoticism	1.30 ± 0.30	3.05	0.00**	1.44 ± 0.35	0.96	0.33	1.50 ± 0.42

\*\*Significant at the 0.01 level; \*Significant at the 0.05 level

### 4.2. Impact of cheerleading on the overall interpersonal relationship scores and various factors for female college students

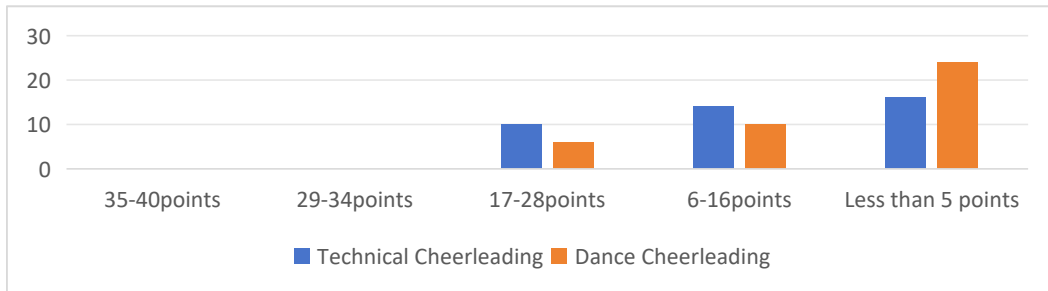
After the experiment, a comparison of the overall scores for interpersonal relationships showed little difference between technical cheerleading and dance cheerleading. However, as illustrated in **Figure 1**, in terms of the statistical analysis of various factors, technical cheerleading performed better in conversation aspects; whereas dance cheerleading excelled in social interaction, interpersonal skills, and interaction with the opposite sex, with a particularly noticeable advantage in interpersonal skills.



**Figure 1.** Proportional comparison of scores in technical and dance cheerleading across various dimensions

### 4.3. Impact of cheerleading on social adaptability

Based on **Figure 2**, a comparison of the total scores for social adaptability reveals that technical cheerleading slightly outperformed dance cheerleading. Specifically, within the score range of 17–28, indicating “average” social adaptability, the percentage of participants in technical cheerleading was slightly higher. Conversely, in the score range below 5, indicating “very poor” social adaptability, the percentage of participants in dance cheerleading was slightly higher.



**Figure 2.** Comparison of social adaptability diagnostic scores among groups

## 5. Discussion

Technical cheerleading, incorporating elements like pyramids, tosses, lifts, chants, dance, and technical moves into a single team activity, often requires dividing students into small groups of 4–5 for cooperative practice during teaching. This helps alleviate negative emotions such as anxiety, hostility, interpersonal sensitivity, paranoia, and psychoticism among female college students. Dance cheerleading, with more emphasis on individual execution of turns, jumps, and tumbling, focuses more on self-expression and has a positive effect on adjusting and improving paranoia.

Due to the significant physical risks involved in technical cheerleading, including numerous lifting and tossing actions, there is a higher demand for trust, coordination, teamwork, and concentration among students. This necessitates more communication and consideration from different perspectives when cooperating with partners. Dance cheerleading, which evolved from activities designed to cheer and boost morale at American football games, carries the mission of energizing and enhancing the atmosphere, demanding higher personal performance and the ability to influence the audience. Studies show that after practicing dance cheerleading, interpersonal affinity and self-respect dimensions were better compared to other sports.

Technical cheerleading performance requires adaptation to partners and spatial orientation, especially the changes in the landing spots of top students’ tossing actions, which aids in improving social adaptability. In contrast, dance cheerleading performance focuses more on the changes in the formation of the set movements, with less adaptation to the venue and interaction with others.

## 6. Conclusion

Both technical and dance cheerleading exert beneficial effects on psychological health, but the factors they affect differ. Technical cheerleading has a highly significant impact on factors such as interpersonal sensitivity, paranoia, and psychoticism, and a significant effect on anxiety and hostility factors; dance cheerleading has a highly significant effect on the paranoia factor.

The overall impact of technical and dance cheerleading on the total score of female college students’ interpersonal relationships is not significantly different. However, the dimensions of their impact vary, technical

cheerleading has a higher promoting effect on conversation; dance cheerleading promotes social interaction, interpersonal skills, and interaction with the opposite sex more effectively, especially notable in interpersonal skills.

Technical and dance cheerleading have different impacts on the social adaptability of female college students, with technical cheerleading showing a more pronounced effect compared to dance cheerleading.

## Disclosure statement

The authors declare no conflict of interest.

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