



## School Resources for Cheerleading Programs and Injury Prevention Measures in a Selected University in Shandong Province, China

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**Abstract:** Cheerleading has evolved into a competitive athletic activity requiring considerable physical strength, coordination, and structured training. As universities implement cheerleading programs, it becomes essential to evaluate the adequacy of school resources and injury prevention measures. This study investigates the relationship between school resources and injury prevention strategies at Weifang University of Science and Technology, Shouguang City, Shandong Province, China. A descriptive-comparative-correlational research design was used, and data were gathered through a researcher-made questionnaire administered to cheerleading athletes using purposive sampling. Data were analyzed using SPSS software, applying descriptive statistics, t-tests, ANOVA, and Pearson's correlation. The findings aim to provide a foundation for implementing a cheerleading injury prevention and support program.

**Keywords:** cheerleading safety, injury prevention, training facilities, dedicated gymnasium, proper flooring

### Introduction

Cheerleading, known for its dynamic routines and physically demanding stunts, has witnessed a surge in popularity across educational institutions worldwide. At Weifang University of Science and Technology, located in Shouguang City, Shandong Province, China, cheerleading holds a significant position within the Physical Education curriculum. Due to the high-risk maneuvers involved, cheerleading requires sufficient institutional resources and well-structured injury prevention measures to ensure the safety and well-being of student-athletes <sup>[1]</sup>. Properly resourced programs have been shown to substantially reduce injury rates and foster a safer athletic environment.

The presence of qualified coaching is a fundamental factor in promoting safety within cheerleading programs. Studies have demonstrated that schools employing coaches with specialized training in cheerleading techniques and injury prevention report significantly lower injury rates <sup>[1]</sup>. Coaches equipped with expertise in safe training protocols play a vital role in minimizing the risk of accidents during both practices and performances.

In addition, the availability of proper equipment is essential for preventing injuries. Research indicates that institutions with access to high-quality mats, protective gear, and well-maintained practice facilities report fewer injury incidents among cheerleaders <sup>[2]</sup>. Investment in reliable and appropriate equipment allows athletes to perform complex routines with reduced risk.

Furthermore, comprehensive training programs that emphasize strength, flexibility, and conditioning are critical to injury prevention. Structured training approaches that incorporate these components have been associated with reduced injury rates, as they help athletes build the physical foundation necessary for executing stunts safely and effectively <sup>[3]</sup>. These findings emphasize the importance of integrating multifaceted training and resource strategies in cheerleading programs to promote athlete safety and performance.

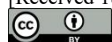
### Statement of the Problem

This study investigates how school resources for cheerleading programs relate to injury prevention measures among student-athletes at Weifang University of Science and Technology. The research seeks to answer:

- What are the demographic characteristics of cheerleading athlete respondents (sex, age, years of experience)?
- How do athletes assess their school's cheerleading resources (facilities, coaching, funding, events, wellness, administrative support)?
- Are there significant differences in these assessments based on demographic variables?
- How do athletes assess injury prevention measures (training, equipment, medical support, policies, communication)?
- Are there significant differences in these assessments based on demographic profiles?

### Literature Review

Physical self-esteem refers to an individual's satisfaction or dissatisfaction with various aspects of their body that are subject to evaluation by others, including athletic ability, physical fitness, attractiveness, physical quality, and self-worth. This concept encompasses the psychological motivations and outcomes associated with participation in physical activity <sup>[4]</sup>. As living standards and cultural norms evolve, female college students have become increasingly conscious of their body image. This growing awareness is influenced by shifting aesthetic values, with physically healthy and attractive individuals often perceived as more socially accepted and competent <sup>[5]</sup>.



Studies have shown that female college students with higher levels of physical self-esteem tend to experience greater contentment, improved mental health, and enhanced self-respect [6]. In contrast, the social issue surrounding so-called "leftover women" is often linked to perceived deficiencies in physical attractiveness, underscoring the significance of positive body image and physical self-esteem in overall well-being. Unfortunately, many female students struggle with obesity, a consequence of poor dietary habits, lack of physical activity, and academic stress. These factors contribute to diminished body awareness and self-esteem. Moreover, societal pressures to conform to narrow beauty standards often result in unhealthy weight loss practices and harmful beliefs, which negatively affect both physical and psychological health. Therefore, addressing the emotional and physical well-being of female college students has become an important area of research.

Adequate sleep is another essential factor in maintaining mental health. Poor sleep quality has been associated with increased levels of anger, anxiety, and depression [7]. Physical activity, particularly in the form of cheerleading, has been shown to improve sleep quality by enhancing oxygen utilization, blood circulation, muscle development, and energy expenditure [8]. Participation in cheerleading not only promotes better sleep but also helps regulate mood, reduce anxiety, and stimulate appetite.

In addition to its physical benefits, cheerleading has a significant positive impact on mental health. It has been found to alleviate various psychological issues such as somatization, depression, and paranoia [9]. Through team-based engagement and social interaction, cheerleading fosters a sense of community and belonging, thereby reducing feelings of isolation and loneliness [10]. Given the interrelated nature of psychological symptoms, improvements in one area often have a cascading effect on others. Overall, cheerleading contributes substantially to the enhancement of mental health and psychological well-being among female college students.

### **Scope and Delimitation of the Study**

This study will be conducted at Weifang University of Science and Technology, located in Shouguang City, Shandong Province, China. It aims to examine the relationship between cheerleading athletes' assessments of school resources for cheerleading programs and the corresponding injury prevention measures implemented within their teams. The research will focus on the perceptions of cheerleading athletes currently enrolled at the university. Key profile variables to be considered include the athletes' sex, age, and number of years of experience in cheerleading. The study is delimited to these demographic factors, excluding other possible influences such as socioeconomic background or academic performance.

The cheerleading athletes' assessment of school resources will be categorized into six key areas: training facilities and equipment, coaching and instruction, financial support, competitions and events, health and wellness provisions, and administrative and organizational support. These factors will be correlated with the athletes' evaluation of injury prevention measures, which include aspects such as training and technique, equipment and facilities, health and medical support, training programs, administrative policies, and team dynamics and communication. The study will employ descriptive statistics and correlational analysis, including one-way ANOVA and post hoc analysis, to analyze the relationship between the athletes' demographic characteristics and their assessments, providing a deeper understanding of how institutional support impacts safety and performance in collegiate cheerleading.

### **Theoretical Framework**

This study adopts Urie Bronfenbrenner's Ecological Systems Theory as its theoretical framework. This theory offers a comprehensive lens through which to examine the dynamic interaction between individuals and their surrounding environments. It is particularly suitable for exploring how varying levels of environmental influence—ranging from direct interpersonal settings to broader societal structures—affect the availability and effectiveness of school resources in cheerleading programs, especially in the context of injury prevention.

Ecological Systems Theory posits that human behavior and development are shaped by five interrelated environmental systems: the microsystem, mesosystem, exosystem, macrosystem, and chronosystem. Each system represents a level of influence that collectively impacts the individual. In this study, these systems serve to contextualize the multifaceted factors contributing to injury prevention in cheerleading programs.

At the microsystem level, the immediate environment—including qualified coaches, access to appropriate safety equipment, and on-site medical or physical therapy support—directly affects cheerleaders' physical well-being. The presence of well-trained staff and properly maintained facilities plays a vital role in minimizing injury risks. Research has shown that cheerleading programs with adequate training infrastructure and access to medical care are more successful in reducing injury incidence.

The mesosystem reflects the interactions between components of the microsystem, such as collaboration between coaches and school administrators. Effective communication and institutional alignment on safety priorities enhance the implementation of injury prevention protocols. For example, administrative support in the form of regular safety audits, training workshops, and program funding significantly increases the overall efficacy of injury management efforts.

At the exosystem level, broader community and institutional structures—such as educational policies, resource allocation strategies, and external funding—indirectly influence the quality of cheerleading programs. Schools operating within supportive community frameworks and guided by athlete-centered policies are generally better equipped to implement injury prevention measures [1].

The macrosystem encompasses cultural norms, societal attitudes, and national safety regulations. Public perceptions of cheerleading as a legitimate and high-risk sport, combined with institutional emphasis on student-athlete welfare, shape

policy decisions and the prioritization of resources. Cultural values surrounding health, education, and athletic performance thus influence how injury prevention is approached at both school and systemic levels. Lastly, the chronosystem introduces the dimension of time, accounting for historical developments and evolving practices in cheerleading safety. This includes shifts in training standards, the introduction of new technologies in injury prevention, and longitudinal changes in institutional attitudes towards cheerleading. Such temporal factors influence the adaptation and continuous improvement of injury prevention strategies over time.

### Conceptual Framework

Figure 1 shows the research paradigm on the assessing the relationship between the cheerleading athlete respondents' assessment of the cheerleading athlete respondents of the resources for cheerleading programs of their and the injury prevention measures of their cheerleading program in Weifang University of Science and Technology, Shouguang City, Shandong Province, China. It will likewise present the correlation between school resources for cheerleading programs and injury prevention measures.

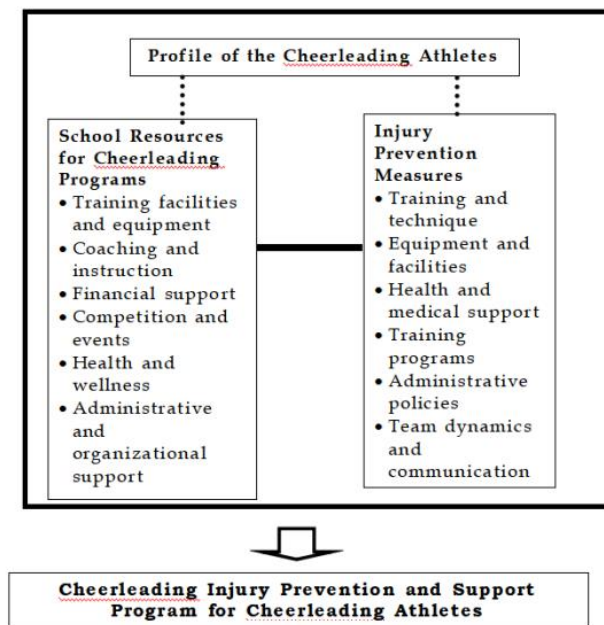


Figure 1. Research Paradigm

Figure 1 indicates the research paradigm of the study. It presents the intervening variables, specifically the cheerleading athletes' demographic data. It also presents the cheerleading athlete respondents' assessment of the resources for cheerleading programs of their school and their assessment of the injury prevention measures of their cheerleading program. Finally, it shows the relationship between school resources for cheerleading programs and injury prevention measures.

It shows the expected output of the study, which is the cheerleading injury prevention and support program for cheerleading athletes.

### Methodology

This study employed a descriptive-comparative-correlational research design, which allows for a systematic examination of existing conditions to identify patterns, relationships, and variations

among variables. Descriptive research focuses on assessing phenomena as they naturally occur, aiming to construct detailed profiles and gain a deeper understanding of participant attributes, behaviors, and attitudes. As Tan explains, such research excels in providing precise definitions, rigorous documentation, and contextually grounded interpretations, particularly in educational and social environments [11].

By combining comparative and correlational techniques, this study not only captures the current state of cheerleading programs at Weifang University of Science and Technology but also examines differences across demographic groups and explores the relationships between school resources and injury prevention practices.

The research was conducted at Weifang University of Science and Technology, located in Shouguang City, Shandong Province, China. The university is a full-time, application-oriented undergraduate institution approved by the Ministry of Education of the People's Republic of China. It is recognized as a pilot university in several national education initiatives, including the Weifang National Vocational Education Innovation and Development Pilot Zone, targeted training for non-commissioned officers, and the reform of agricultural and forestry talent training.

### Participants and Sampling

The study focused on cheerleading athletes currently enrolled at Weifang University of Science and Technology. Purposive sampling was used to select participants based on specific inclusion criteria:

The athlete must have at least one year of experience in cheerleading.

The athlete must be currently enrolled in a university program.

The athlete must have participated in at least one official cheerleading activity, such as a presentation, competition, or exhibition.

The exact number of athletes currently meeting these criteria will be determined during data collection.

### Research Instrument

Data were gathered using a researcher-made structured questionnaire, administered face-to-face on campus. The questionnaire was designed to assess both school resources and injury prevention measures from the perspective of student-athletes.

The instrument includes three sections:

Part 1: Demographic profile of the respondents (sex, age, and years of cheerleading experience);

Part 2: Assessment of school resources for cheerleading programs (training facilities and equipment, coaching, financial support, events, health, and administrative support);

Part 3: Evaluation of injury prevention measures (training techniques, medical support, safety policies, and team communication).

<b><u>School Resources for Cheerleading Programs</u></b>	
<b>Scale</b>	<b>Verbal Interpretation</b>
3.51 - 4.00	<b>Very Accessible</b>
<i>If the statements are very true of their school, 76%-100% level of accessibility.</i>	
2.51 -3.50	<b>Accessible</b>
<i>If the statements are true of their school, 51%-75% level of accessibility.</i>	
1.51 -2.50	<b>Slightly Accessible</b>
<i>If the statements are slightly true of their school, 26%-50% level of accessibility.</i>	
1.00-1.50	<b>Not Accessible</b>
<i>If the statements are not true of their school, 1%-25% level of accessibility.</i>	
<b><u>Injury Prevention Measures of the Cheerleading Program</u></b>	
<b>Scale</b>	<b>Verbal Interpretation</b>
3.51 - 4.00	<b>Very Effective</b>
<i>If the statements are very true of cheerleading program, 76%-100% level of effectiveness.</i>	
2.51 -3.50	<b>Effective</b>
<i>If the statements are true of cheerleading program, 51%-75% level of effectiveness.</i>	
1.51 -2.50	<b>Slightly Effective</b>
<i>If the statements are slightly true of cheerleading program, 26%-50% level of effectiveness.</i>	
1.00-1.50	<b>Not Effective</b>
<i>If the statements are not true of cheerleading program, 1%-25% level of effectiveness.</i>	

Table 1.School Resources for Cheerleading Programs

The responses to the survey questionnaire will be tallied using the SPSS, and then they will be tabulated and organized accordingly. The data will be presented, analyzed, and interpreted using frequency, percentage, mean, standard deviation, independent samples t-test, one-way ANOVA, and Pearson's r correlation.

#### **Data Gathering Procedure**

The researcher will get permission from the office of the principal of Weifang University of Science and Technology, Shouguang City, Shandong Province, China.

When the permission is approved, the researcher will ask permission from the coaches by distributing a letter of consent form to the athlete respondents, which will be signed by them and will be returned to the researcher.

After, the purpose of the study and instructions on how the items on the survey should be answered will be explained to the cheerleading athlete respondents. Then, the survey will be administered using the face to face and they will be given enough time to answer the survey.

After completing the survey, the researcher will collect the questionnaires from the cheerleading athlete respondents. The data will be gathered, tallied, and processed with Statistical Package for Social Science (SPSS). The processed data will be interpreted and analyzed, and the results will be used to propose a cheerleading injury prevention and support program for cheerleading athletes.

Finally, the interpretation and analysis of data will be done. Summary of findings, conclusions, and recommendations will be formulated.

### Statistical Treatment of the Data

The responses to the survey questionnaire will be tallied using the SPSS, and then they will be tabulated and organized accordingly. The data will be presented, analyzed, and interpreted using frequency, percentage, mean, standard deviation, independent samples t-test, one-way ANOVA, and Pearson's r correlation.

1. For research question no. 1, descriptive statistics such as frequency counts and percentages will be used to treat responses in the demographic profile of the cheerleading athlete respondents.

2. For research question nos. 2 and 4, weighted means will be utilized to treat the assessment of the cheerleading athlete respondents of the resources for cheerleading programs of their school in terms of training facilities and equipment, coaching and instruction, financial support, competition and events, health and wellness, and administrative and organizational support.

Weighted means will also be used to compute for the assessment of cheerleading athlete respondents of the injury prevention measures of their cheerleading program in terms of training and technique, equipment and facilities, health and medical support, training programs, administrative policies, and team dynamics and communication

The following will be used to interpret the WM of the athletes' responses:

Mean Range	Verbal Description
3.51 - 4.00	Very True of My School/ Very True of Our Cheerleading Program
2.51 - 3.50	True of My School/ True of Our Cheerleading Program
1.51 - 2.50	Slightly True of My School/ Slightly True of Our Cheerleading Program
1.00 - 1.50	Not True of My School/ Not True of Our Cheerleading Program

3. For research question nos. 3 and 5, one way ANOVA with post-hoc analysis (Scheffe) will be used to find out the significant difference in the assessment of the cheerleading athlete respondents of the school resources for cheerleading programs and injury prevention measures.

4. For research question no. 6, Pearson's r correlation analysis will be utilized to determine the significant relationship between the cheerleading athlete respondents' of the school resources for cheerleading programs and injury prevention measures.

### Results and Discussion

#### Profile of the Respondents

In terms of age, the majority of the respondents are within the age group of 26 to 30 years old. This may be taken to mean that the respondents have accumulated considerable experience given their age.

In terms of sex, the majority of the cheerleading athlete respondents are males in terms of sex. This may be taken to mean that there are more male cheerleading athletes than female cheerleading athletes.

In terms of number of years as a cheerleader, the majority of the cheerleading athletes respondents have been cheerleaders for 1 year. This may mean that the students are relatively new to the discipline of cheerleading.

Assessment of the Cheerleading Athlete Respondents of the Resources for Cheerleading Programs of their School

#### Training Facilities and Equipment

The highest assessment among the items is "My school ensures that training equipment is up-to-date and functional," which has a mean of 2.35 and a standard deviation of 1.07. Despite being the highest-rated item, it still falls under the "Disagree" category, indicating that while this aspect is slightly more satisfactory compared to others, it still does not fully meet the respondents' expectations.

The lowest assessment is for the item "My school provides well-maintained facilities for cheerleading practice," which has a mean of 1.93 and a standard deviation of .94. This low rating, which is interpreted as "Slightly True of My School," indicates a significant concern among the respondents regarding the maintenance of their practice facilities.

The composite mean of 2.11 with a standard deviation of .38 reflects a general sense of discontent with the overall training facilities and equipment provided by the school. The consistent ranking of all items under the "Disagree" category suggests that the respondents perceive a systemic issue with the resources allocated to cheerleading.

#### Coaching and Instruction

The highest-rated item in this category is "Instructional methods used by coaches are effective in enhancing skills," with a mean of 3.04 and a standard deviation of 1.37. This rating reflects a strong belief among the respondents that the instructional approaches employed by their coaches are effective in developing their cheerleading skills.

The lowest-rated item, "My school provides access to qualified and experienced cheerleading coaches," has a mean of 2.82 and a standard deviation of 1.51. Although this item still falls under the "Agree" category, its ranking as the lowest indicates that, while respondents generally feel that the coaching staff is qualified and experienced, there may be some reservations.

The composite mean of 2.96, with a standard deviation of .52, underscores a general consensus of satisfaction among the cheerleading athletes with the coaching and instruction they receive. The narrow standard deviation indicates that this sentiment is fairly consistent among the respondents, suggesting that the school has succeeded in providing a relatively uniform level of coaching quality.

#### **Financial Support**

The highest-rated item, "My school provides financial assistance for travel to cheerleading events," has a mean of 2.59 and a standard deviation of 1.38. Despite being the highest-rated aspect of financial support, it still falls under the "Agree" category, indicating that the respondents feel that while some financial assistance is provided for travel, it may not be adequate or consistent.

The lowest-rated item, "My school allocates adequate funds for cheerleading uniforms and gear," has a mean of 2.31 and a standard deviation of 1.30. This low rating, interpreted as "Slightly True of My School," indicates a significant concern among the respondents regarding the financial support for uniforms and gear.

The composite mean of 2.43, with a standard deviation of .48, reflects an overarching sense of inadequacy in the financial support provided for cheerleading programs. The overall "Disagree" rating indicates that, on average, the respondents believe that the financial resources available are not sufficient to fully support their cheerleading activities.

#### **Competition and Events**

The highest-rated item, "My school provides opportunities to participate in a variety of cheerleading competitions," has a mean of 3.00 and a standard deviation of 1.31. This rating, falling within the "Agree" category, highlights that the respondents feel their school offers ample opportunities for them to engage in a diverse range of cheerleading competitions.

The lowest-rated item, "The school supports the cheerleading program's participation in regional and national events," has a mean of 2.82 and a standard deviation of 1.36. Despite being the lowest-ranked, it still falls under the "Agree" category, indicating that respondents feel the school does provide some level of support for regional and national competitions.

The composite mean of 2.89, with a standard deviation of .54, reflects a general sense of satisfaction among the respondents regarding their school's efforts in supporting competition and event participation. The "Agree" rating across the board suggests that, on average, the athletes believe their school provides adequate resources and support for cheerleading competitions and events.

#### **Health and Wellness**

The highest-rated item, "My school ensures that mental health support is available for cheerleading athletes," has a mean of 2.73 and a standard deviation of 1.37. This falls under the "Agree" category, indicating that respondents acknowledge the availability of mental health support within the school. This relatively higher rating reflects a positive aspect of the school's wellness resources, emphasizing the importance of mental health in the demanding and high-pressure environment of cheerleading.

The lowest-rated item, "Regular health screenings are conducted to monitor athlete well-being," has a mean of 2.28 and a standard deviation of 1.32. The low mean score, interpreted as "Slightly True of My School," indicates that respondents feel their school is not adequately conducting regular health screenings for cheerleading athletes.

The composite mean of 2.47, with a standard deviation of .57, reflects an overall perception that the school's health and wellness resources are lacking. The "Disagree" rating indicates that the respondents feel these resources are only slightly true of their school, implying that while some support exists, it is insufficient or inconsistently provided.

#### **Administrative and Organizational Support**

The highest-rated item, "My school provides the necessary paperwork and administrative assistance for cheerleading events," has a mean of 3.08 and a standard deviation of 1.36. This falls under the "Agree" category, suggesting that respondents are satisfied with the administrative support they receive for managing the bureaucratic aspects of cheerleading events, such as obtaining necessary approvals, completing documentation, and ensuring compliance with regulations.

The lowest-rated item, "The cheerleading program receives adequate attention and priority from school administrators," has a mean of 2.87 and a standard deviation of 1.43. Although this is the lowest-ranked item, it still falls under the "Agree" category, indicating that respondents generally believe their program receives attention from the school's administration.

The composite mean of 2.97, with a standard deviation of .53, reflects an overall positive sentiment regarding the administrative and organizational support provided to the cheerleading program. The "Agree" rating across all items suggests that the athletes feel their school's administrative framework is generally effective in managing the various aspects of the cheerleading program, from communication and logistics to policies and procedures.

#### **Significant Differences in the Assessment of the Cheerleading Athlete Respondents of the Resources for Cheerleading Programs of their School**

The analysis reveals that age does not significantly affect perceptions of the various resources within the cheerleading program. For training facilities and equipment, coaching and instruction, financial support, competition and events, health and wellness, and administrative and organizational support, there are no statistically significant differences across different age groups. Mean scores for these areas are relatively consistent, with only minor variations noted. For instance, while there is a slight trend towards higher mean scores with increasing age, these differences are not significant, indicating that age does not play a substantial role in how athletes evaluate these resources. This uniformity suggests that perceptions of the program's resources are similar regardless of age.

Gender also does not significantly influence perceptions of the cheerleading program's resources. Evaluations of training facilities and equipment, coaching and instruction, financial support, competition and events, and health and wellness are similar for both male and female athletes. The mean scores across these areas are close, indicating that both genders perceive these resources in a comparable manner. The assessment of administrative and organizational support shows a near-significant trend where males report slightly higher mean scores than females. However, this difference is not statistically significant. Overall, the findings suggest an equitable experience for both male and female athletes in terms of their perceptions of the cheerleading program's resources.

The length of time a cheerleader has been involved in the program does not significantly impact their perceptions of the program's resources. Evaluations of training facilities and equipment, coaching and instruction, financial support, competition and events, health and wellness, and administrative and organizational support show no significant differences based on the number of years of experience. Mean scores across all experience levels are quite similar, indicating that perceptions of these resources remain consistent regardless of how long a cheerleader has participated in the program. This uniformity implies that tenure in the program does not influence the perceived quality or adequacy of the resources provided.

## **Conclusion**

This study examined the availability and effectiveness of school resources in cheerleading programs and their relationship to injury prevention measures, with a focus on a selected university in Shandong Province, China. The demographic profile of the cheerleading athlete respondents revealed that the majority were aged 26 to 30 years, predominantly male, and had been involved in cheerleading for approximately one year. These characteristics provide a useful context for understanding their perceptions of the institutional support available to them.

The analysis of school resources showed a mixed evaluation by the athletes. While respondents generally perceived coaching and instructional resources as adequate and supportive, they expressed concerns regarding the sufficiency of other key resources. Facilities and equipment were viewed as only slightly meeting their needs and expectations, and financial support was reported as insufficient, providing only partial coverage for cheerleading activities. Similarly, health and wellness resources were perceived as inadequate, suggesting a critical area requiring further investment. Nonetheless, the athletes acknowledged that the school provides relatively strong support in terms of organizing competitions and events and maintaining an administrative structure that facilitates program management.

In terms of injury prevention, athletes generally believed that their program incorporates preventive strategies effectively into training. They acknowledged the presence of various measures and appreciated the program's efforts to promote communication and collaboration in implementing these strategies. However, the perception remains that significant improvements are still needed, particularly in the provision of appropriate equipment, facilities, and health or medical support. These insights point to a partial alignment between athlete needs and institutional resource allocation in the area of injury prevention.

Importantly, the study found no significant differences in perceptions of most resource categories when analyzed across demographic variables such as age, gender, and experience. The only exception was observed in the evaluation of facilities and equipment, where a significant difference existed between male and female respondents. Additionally, while most school resources did not demonstrate a statistically significant influence on injury prevention, financial support emerged as a critical factor affecting the adequacy of health and medical services.

Overall, the findings suggest that while the cheerleading program benefits from some supportive elements—particularly in coaching, administration, and injury prevention awareness—there remains a notable gap in essential resources, particularly in the areas of funding, medical support, and facility adequacy. These gaps highlight the need for strategic improvements in school resource planning to better support athlete safety and performance.

## **Recommendations**

Based on the findings of the study, it is strongly recommended that Weifang University of Science and Technology increase its financial investment in health and medical support for cheerleading programs. The study established that financial resources have a significant impact on the availability and quality of health services. Therefore, budget allocations should be directed toward hiring qualified medical staff, procuring first-aid and emergency equipment, and conducting regular health screenings for athletes. Strengthening these areas will enhance the school's capacity to implement effective injury prevention strategies and ensure safer training and performance conditions for cheerleaders.

Although the data revealed no significant statistical relationship between general health and wellness programs and injury prevention, investing in such initiatives remains essential. A comprehensive wellness program—including physical conditioning, nutritional guidance, and mental health support—can contribute to athletes' overall well-being and indirectly reduce injury risks. Schools should consider integrating these elements into their athletic programs to cultivate a more holistic approach to student-athlete care. These initiatives not only support physical health but also build resilience and reduce stress, contributing to safer participation in cheerleading.

Even though the correlation between training facilities, coaching quality, and injury prevention measures was not statistically significant, these factors still require attention. Outdated or insufficient equipment may present safety hazards, so regular inspections, timely upgrades, and the provision of safety-specific gear—such as mats and protective padding—are recommended. Additionally, coaching staff should engage in ongoing professional development with a focus on injury

prevention techniques. Training in safe stunt progression, spotting, and emergency preparedness will equip coaches with the skills necessary to foster a safer environment during practices and performances.

Finally, the establishment of a comprehensive and collaborative injury prevention program is essential. While administrative support was not shown to directly influence injury prevention, leadership should still play a central role in creating a culture of safety. This includes developing and enforcing clear policies, allocating resources effectively, and promoting open communication among coaches, athletes, medical personnel, and administrators. Regular meetings, injury data tracking, and feedback collection from athletes and coaches will ensure that prevention strategies remain dynamic and responsive to current needs. Continuous monitoring and improvement of these measures are critical to the long-term health and safety of cheerleading participants.

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