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The Impact of the Different Types of Dance Cheerleading on the Physical Aspect, Adaptive Ability and Level of Resilience of Middle School Students

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Abstract: The purpose of this study is to compare the effects of different types of dance cheerleading on the physical fitness and health level of junior high school students in Kaili City, and to explore the relationship between its effects on physical fitness, adaptive ability and level of resistance to frustration. The subjects of the investigation included students in the Street Dance Cheerleading group, Jazz Cheerleading group and Flower Ball Cheerleading group, participating in the "Physical Education and Health" course. Through the research design of description-comparison-correlation, the data were collected by questionnaire method and analyzed using mathematical statistics software. The results showed that different types of cheerleading had a significant effect on secondary school students' physical ability, adaptability and level of resistance to frustration. It is recommended that schools and educational organizations should strengthen the promotion of cheerleading activities while paying attention to the differences in gender and types of cheerleading in order to improve the overall physical fitness of students and develop their teamwork spirit.

Keywords: Dance Cheerleading; Physical Fitness; Secondary School Students; Influencing Factors; Adaptability; Teamwork.

1. Introduction

In modern society, secondary school students are faced with more and more pressure in their studies and life, and the issue of their physical and mental health has attracted widespread attention. Physical fitness, adaptability and resilience level is one of the most important indicators for evaluating a person's physical and mental health. Dance cheerleading has become increasingly popular in many schools as a recreational activity and competitive sport.

The purpose of this study was to investigate the effects of different types of dance and cheerleading on secondary school students' physical fitness, adaptability and resilience. The focus on dance and cheerleading is due to the fact that it is an energetic, elemental sport that incorporates aerobic exercise, strength training, coordination, and artistic expression. By examining how participation in this sport affects students' physical and mental fitness, this study attempts to contribute to the ongoing discussion about effective strategies to promote the holistic development of youth.

Previous research has shown that physical activity has numerous health benefits for adolescents, including improvements in cardiovascular fitness, muscle strength, flexibility, and mental health outcomes such as reduced stress and anxiety. However, there is limited research specifically investigating the effects of dance cheerleading on adolescents' physical and mental health, particularly on their adaptive capacity and resilience. Understanding how participation in dance cheerleading activities affects adolescents' physical fitness, adaptability, and resilience is critical to the development of educational policies and practices aimed at promoting holistic development. By elucidating the potential benefits of these activities, better development of dance cheerleading re-school sports is promoted.

In conclusion, this study endeavors to fill a gap in the existing literature by examining the effects of different types of dance and cheerleading routines on secondary school students' physical fitness, adaptability and resilience. By elucidating the multifaceted effects of these activities, this study aims to contribute valuable insights to the fields of education, public health, and adolescent development, ultimately promoting the holistic development of adolescents in educational settings.

2. Statement of the Problem

This study compares different types of dance cheerleading to determine which type of dance cheerleading has the greatest impact on the physical fitness of secondary school students.

Specifically, this study answered the following research questions:

what is the status of the surveyed students with respect to the following?

1.1 sex,
1.2 type of cheerleading dancer,
1.3 grade level,
1.4 body mass index (BMI)?

2. Is there a significant difference in the physical aspects of cheerleading as rated by different types of dance cheerleading respondents?

3. Is there a significant difference between the different types of dance cheerleading respondents' assessment of the adaptive aspects of cheerleading?

4. Is there a significant difference in the assessment of resilience between different types of cheerleading?

4.1 goal focus,
4.2 emotional control,
4.3 positive cognition,
4.4 interpersonal assistance,
4.5 family support?

3. Hypotheses

The following null hypotheses were tested in this study:

Hypothesis 1: There will be no significant difference between the different types of cheerleading teams on the evaluation of physical aspects?

Hypothesis 2: There will be no significant difference between different types of cheerleaders' assessment of adaptability?

Hypothesis 3: There will be no significant difference in the assessment of resilience level between different types of cheerleading teams?

4. Scope and Delimitation of the Study

The aim of this study was to compare the effects of different types of dance cheerleading on the physical fitness level of junior high school students in Kaili city. The subjects of the study were divided into Street Dance Cheerleading, Jazz Cheerleading and Flower Ball Cheerleading groups, which participated in the "Physical Education and Health" course. The main objective of the study was to scientifically quantify the effect of different types of dance cheerleading on the physical fitness level of secondary school students and to further improve their physical fitness level through the development of dance cheerleading.

Respondents were limited in terms of grade level, gender, and dance cheerleading group. Although representative samples were selected from as many grade levels and genders as possible, these limitations may affect the generality and generalizability of the results.

This study used a questionnaire method to collect information on students' health status, which has limitations such as questionnaire return rate and subjectivity of the questionnaire. Although the electronic distribution and collection of questionnaires through the Internet increased efficiency, there may still be some bias. The study was conducted over a three-month period and only covered the respondents' time spent on physical education courses. This may not fully reflect the long-term effects of dance cheerleading on the physical fitness level of secondary school students.

5. Research Design

This study adopts a descriptive-comparative-correlational research design method to collect data through questionnaires and analyses the data using mathematical and statistical software to gain a more comprehensive understanding.

Quantitative data were collected through questionnaires covering physical aspects, psychological development and adaptability of different types of dance cheerleading students. Descriptive statistics, correlation analysis and other statistical analyses were used to explore the relationship between the effects of different types of dance cheerleading on secondary school students' physical fitness, adaptability and level of frustration resistance.

In this study, random sampling method was used to select secondary school students in Kerry Secondary School as the survey sample.

A structured questionnaire was used to collect data for this study. The questionnaire included physical aspects, adaptability and frustration resistance of secondary school students.

Quantitative data were analyzed using statistical software such as SPSS, including descriptive statistics and correlation analysis.

6. ANALYSIS AND INTERPRETATION OF DATA

6.1. Basic Information

Table 1. Profile of the Student-Respondents.

Profile	Categories	Quantity	Percentage
Sex	Male	45	50
	Female	45	50
	Total	90	100
Type of Cheerleading Dancer	Flower ball Cheerleading	30	33.33
	Jazz Cheerleading	30	33.33
	Hip-Hop Cheerleading	30	33.33
	Total	90	100
Grade Level	7	30	33.33
	8	30	33.33
	9	30	33.33
	Total	90	100
Body Mass Index	Normal	73	81
	Low Weight	8	9
	Overweight	9	10
	Obesity	0	0
	Total	90	100

Table 1 provides detailed demographic characteristics of the respondent students who participated in the survey. It categorizes students by gender, category, grade and body mass index, providing a quantitative indication of the composition of the participants.

The table shows that 45 secondary school student respondents were selected for each gender. This equal gender distribution ensured a balanced representation of male and female students in the survey.

For each type of cheerleading dance, there were 15 middle school student respondents of each gender. This equal distribution ensured that the different types of cheerleading dances in the survey were balanced and that each type was adequately investigated.

There were four types of body mass index (BMI); 81% (73students) of the students had normal BMI; 10% (9students) of the students were overweight; 9% (8students) of the students had low BMI, and 0 student were of the obese type. This indicates that there is no obesity among secondary school students in cheerleading.

The total number of respondents for each demographic

profile was 90, indicating full participation in the survey for each category of the respondent profile

6.2. Type-Physical Aspects

Table 2. Assessment of different types of cheerleading and physical aspects

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.20	0.20	F= 9.92	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.06	0.19			
	Hip-hop Cheerleading	3.13	0.19			

Among the types of cheerleading dances in terms of physical fitness. The mean value of Flower Ball Cheerleading was 3.20 with a standard deviation of 0.20; this indicates that they agreed with the items in the questionnaire; Jazz Cheerleading had a mean value of 3.06 with a standard deviation of 0.19; this indicates that they agreed with the items. The mean for Hip Hop Cheerleading was 3.13 with a standard deviation of 0.19; this indicates that they agreed. The value of the F-statistic was 9.92 with a P-value of 0.000, which is much less than the level of significance of 0.05.The P-value, therefore, provides strong evidence against the hypothesis. There is a significant difference between different types of cheerleading dances such as Flower ball, Hip-hop and Jazz. Hence, the null hypothesis is rejected.

6.3. Type---Adaptive ability

Table 3. Assessment of different types of cheerleading and Adaptive ability

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.16	0.30	F= 10.45	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.02	0.28			
	Hip-hop Cheerleading	3.02	0.20			

In the cheerleading dance type group. Flower ball cheerleading had a mean of 3.16 with a standard deviation of 0.30, jazz cheerleading had a mean of 3.02 with a standard deviation of 0.28, and street dance cheerleading had a mean of 3.02 with a standard deviation of 0.20, which implies that they responded consistently with the items in the questionnaire. The value of the F statistic was 10.45, with a p-value of 0.0001, which is much less than the level of significance, 0.05.Thus, the P value provides strong evidence against the hypothesis. There is a significant difference between different types of cheerleading dances such as ballroom, street and jazz. Therefore, the null hypothesis is rejected.

6.4. Type--Level of Resilience

6.4.1. Goal Focus

Table 4. Assessment of different types of cheerleading and Goal Focus

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.23	0.06	F= 21.68	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.09	0.08			
	Hip-hop Cheerleading	3.09	0.08			

In terms of the type of cheerleading, the mean value of Flower ball cheerleading is 3.23 with a standard deviation of 0.06, the mean value of Jazz cheerleading is 3.09 with a standard deviation of 0.08, and the mean value of Hip-hop cheerleading is 3.09 with a standard deviation of 0.08, which indicates that the respondents agree with the indicators in the questionnaire. The F-value is 21.68, and the p-value shows 0.000, which is less than the significance level of 0.05, thus, the null hypothesis (H02) is rejected confirming that there is a significant difference between different types of Dance Cheerleading such as Flower Ball, Street Dance and Jazz in terms of goal focusing.

6.4.2. Emotional Control

Table 5. Assessment of different types of cheerleading and Emotional Control

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.18	0.06	F= 16.11	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.06	0.07			
	Hip-hop Cheerleading	3.03	0.09			

In the grouping of cheerleading dance types, the mean of Flower ball cheerleading was 3.18; with a standard deviation of 0.06, the mean of Jazz cheerleading was 3.06 with a standard deviation of 0.07, the mean of Hip-hop cheerleading was 3.03 with a standard deviation of 0.09, the F-value was 16.11, and the P-value was 0.000, therefore, the rejection of the null hypothesis (H0) confirms that there is a significant difference in emotional control resilience between different types of dance cheerleading, such as Flower Ball, Hip-hop and Jazz have significant differences in emotional resilience.

6.4.3. Positive Cognition

Table 6. Assessment of different types of cheerleading and Positive Cognition

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.26	0.03	F= 43.57	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.14	0.03			
	Hip-hop Cheerleading	3.06	0.05			

Among the data of different types of cheerleading teams, the mean of Flower cheerleading is 3.26 with a standard deviation of 0.03, which means "strongly agree", while the mean of Jazz cheerleading and Hip-hop cheerleading are 3.14 and 3.06, respectively, and their standard deviations are 0.03 and 0.05, which means "Agree" in that order. The F-value is equal to 43.51 and the P-value is 0.000 less than 0.05 level of significance. Therefore, it rejects this hypothesis(H02). And it concludes that there is a significant difference in positive cognitive resilience between different types of cheerleading.

6.4.4. Interpersonal Assistance

Table 7. Assessment of different types of cheerleading and Interpersonal Assistance

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.28	0.04	F= 32.73	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.11	0.04			
	Hip-hop Cheerleading	3.13	0.04			

Looking at the data from different types of cheerleading teams. Flower ball cheerleading has a mean of 3.28 and a standard deviation of 0.04 which means "Strongly Agree". Hip-hop Cheerleading and Jazz Cheerleading had a mean of 3.13 and 3.11 respectively with a standard deviation of 0.04 indicating "agree". F-value equals 32.73 with a P-value of 0.000 which is less than the level of significance of 0.05. It rejects (H02) and concludes that there is a significant difference in the resilience to interpersonal assistance between the different types of cheerleading dances.

6.4.5. Family Support

Table 8. Assessment of different types of cheerleading and Family Support

Respondents' Profile	Category	Mean	SD	Stat. Value	P-Value	Interpretation/ Decision
Type	Flower Cheerleading	3.28	0.04	F= 32.73	0.000	Significant/ Reject H0
	Jazz Cheerleading	3.11	0.04			
	Hip-hop Cheerleading	3.13	0.04			

For the different types of cheerleading teams, the mean for Flower cheerleading is 3.19 with a standard deviation of 0.07, and the mean for Hip-hop cheerleading and Jazz cheerleading are both 3.07 with a standard deviation of 0.07 and 0.04, respectively, which means that the description is "Agree". F-value is equal to 18.12, with a P-value of 0.000, which is less than the significance level of 0.05. It rejects original hypothesis(H02) and concludes that there is a significant difference in interpersonal assistance resilience between different types of cheerleading dances.

7. Conclusion

1 The gender distribution of respondents in this study was balanced, contributing to the representativeness of the findings, and the average distribution across different cheerleading types ensured a diversity of perspectives. Respondents were evenly distributed across different middle school grades, suggesting a wide range of educational experiences and stages were reflected in the study. none of the BMI's were obese and the majority were normal, suggesting that the cheerleaders maintained a good level of physical fitness

2. there were significant differences between the different types of cheerleading in the development of the physical and mental aspects of cheerleading, with all cheerleading activities playing an important role in enhancing physical abilities. Respondents felt that participation in cheerleading activities helped students develop flexibility, balance, and coordination, which had a positive effect on their overall physical health.

3. There were significant differences between the different types of cheerleading in the development of cheerleading physical adaptability. In terms of adaptability, respondents felt that adaptive cheerleading could enhance overall teamwork and cohesion. Participation in adaptive cheerleading can develop students' sense of co-operation and team spirit, and improve team cohesion and collaboration.

4. Different types of cheerleading have a significant impact on the recovery of resilience levels. From the respondents' perspective, cheerleading training plays a positive role in enhancing goal focus, emotional control, positive cognition, interpersonal assistance and family support, which positively affects students' resilience levels.

8. Recommendations

1.Enhancing the promotion of cheerleading activities: Cheerleading activities play an important role in enhancing physical abilities and adaptability, and help develop teamwork and cohesion among students. Therefore, it is recommended that schools and educational organizations strengthen the support and promotion of cheerleading activities to promote students' overall physical fitness and develop teamwork.

2.Focus on gender and cheerleading type differences: The impact of gender and different types of cheerleading on physical ability and adaptability varies greatly, and it is

recommended that gender and cheerleading type differences be taken into account in cheerleading training, and that individualized training programmes be provided for different genders and types of students.

3.Emphasis on the positive impact of all aspects of cheerleading: Cheerleading training has a positive effect on improving goal focus, emotional control, positive cognition, interpersonal assistance, and family support, which can help to increase students' resilience levels. Therefore, it is suggested that schools and coaches can further optimize the training content and methods, and enhance the development of these aspects in teaching, in order to promote the overall development and adaptability of students, and maximize the comprehensive effects of cheerleading training.

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