

Strength on Stage, Strength in the Gym: Unveiling High School Cheerleaders' Views on Strength Training

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Abstract

Dancer-specific strength training targets both major muscle groups and core stability to improve power, injury resilience, and overall dance performance. The purpose of this study is to describe the level of strength training of dancers. This study used a quantitative research method with a descriptive-comparative approach to measure the degree of strength training for dancers among high school students. A total of 30 high school cheerleaders in one of the private schools in Calinan, Davao City were the respondents. An adapted and modified survey questionnaire was used in collecting the data and passed through a reliability test through PSPP software which resulted in .78 Cronbach's Alpha. Through the use of mean, the findings revealed that students perceived all indicators as high with health benefits as the most significant component, followed by injury prevention, participation, and performance. Through the use of the ANOVA test, it appears that age, sex, year level, and years of dancing were not significant. While a study found high school cheerleaders perceive strength training as beneficial for overall health and performance, further research is needed to determine the effectiveness of specific strength training programs for dancers. Given the potential benefits of dancer-specific strength training, future studies should move beyond self-reported data to objectively assess training regimens and their impact on performance and injury rates.

Keywords: Strength training; participation; performance; injury prevention; health benefits

1. Introduction

Dance is a sport that requires significant skill and higher levels of fitness (Kayla, Major). Strength training for dancers builds power and stability for jumps, lifts, and intricate movements. Improving the body's strength is crucial when improper or less knowledge of doing the training happens. Koutedakis et al (2009) said that poor aerobic capabilities, high ectomorphy ratings with low percent body fat values, and the biomechanics of different dance techniques have also been identified as underlying sources of injury in dancers.

In Portugal, the physical demands placed on dancers put them at significant risk for injury, with rates similar to ones sustained by athletes in sports at the same level of performance. In general, physical conditioning is a key principle for lowering injury risk, and muscle strength and strength-related components such as muscle power and muscular endurance are major physical conditioning elements required for both

health and performance (Moita et.al, 2017). Moreover, according to Guifang, (2023), judging from the training of Chinese sports dance players in recent years, many coaches and athletes do not know enough about the importance of special strength training, and have little knowledge of the principles and methods, in the minds of some sports dance players, including high-level players, there is not even a concept of special strength training (which is unthinkable in other competitive sports).

In the Philippines, Physical educators face the challenge of adapting how their classes are perceived to address student health and physical inactivity (Bantayan, 2023). Significantly, strength or resistance training is more effective in enhancing muscular strength. However, many lack the motivation to do so.

Locally, many aspirant dancers experienced improper ways of training that led them to undeveloped and incompetent performance. Improper strength training can lead to gaps in physical reserves for dancers, impacting performance despite technical progress (Guifang Sun, 2023). Supported by the study of Rosenthal et al (2021), improper strength training can lead to injury risk and hinder aesthetic appearance in dancers due to historic biases. Proper education on safe strength training practices is crucial for dancers' well-being.

It has been evident that the dancers lack strength in dancing resulting in them to perform less ability to show at their best. This study will help young enthusiastic dancers to enhance their ability in dancing more specifically in the need to strengthen the body to effectively produce a well-developed and more satisfying performance. The study of Eugen and Gabriel (2023) entitled Sport performance in dance – a systematic review of the methods used in physical conditioning training states that dancers are hesitant to engage in strength training because they are concerned about muscular hypertrophy and the potential effects it may have on dance aesthetics. However, this study will promote and encourage dancers to primarily engage in strength training as their primary concern in showing a better performance.

This study aimed to describe the level of strength training of dancers. Specifically, this study sought to answer the following:

1. What is the profile of respondents in terms of:
 - 1.1 age;
 - 1.2 year level;
 - 1.3 sex; and
 - 1.4 years of dancing?
2. What is the level of strength training of dancers in terms of:
 - 2.1 Participation
 - 2.2 Performance
 - 2.4 Injury Prevention
 - 2.4 Health Benefits
3. Is there a significant difference on the level of strength training when analyzed across the profile of the respondents?

2. Methodology

2.1. Research Design

This study utilizes a quantitative research design with a descriptive-comparative approach that involves numerical data that encompasses the results through surveys that are analyzed statistically. According to Watson 2015), quantitative research encompasses a range of methods concerned with the systematic investigation of social phenomena, using statistical or numerical data. Therefore, this research design will analyze situations statistically. Furthermore, descriptive-comparative research involves comparing cases, variables, and units of analysis a priori (juxtaposition logic) or examining processes influenced by actors and meanings over time (tracing logic) (Bartlett and Vavrus 2020).

2.2. Research Locale

This study was conducted in one of the private high school institutions in Calinan, Davao City. This school is considered the biggest private institution in the said area.

2.3. Research Respondents

The respondents of this study were the thirty high school Davao Association of Catholic Schools cheerleaders who are officially enrolled in the current academic year.

2.4. Research Instrument

This study adapted and modified the questionnaire on Perceptions of Strength Training for Dancers at a Midwestern University (Boenig-Dombek, 2022) in collecting the data and passed the reliability test using Cronbach's Alpha containing a total of 8 questions. Each item was answered and scored through a Likert scale (1 = very low, 2 = low, 3 = moderate, 4 = high, 5 = very high) questionnaire that determined the level of respondents' strength training. The demographic profile of the respondents covered in the first part of the survey contains their age, year level, sex, and years of dancing followed by the second part that measures the students' participation with 2 questions, followed by the second indicator measures the performance with 4 questions, and third and fourth indicators measures the injury prevention and health benefits with 1 question each. The Likert scale below will be used to analyze the result.

The data was collected through an online survey. The chosen respondents were initially asked about the study and gave their approval to participate before the researcher provided the link that contains the survey questionnaire. The respondents assessed each item based on the choices provided, which related to their responses. The respondents were given no less than 10 minutes to complete the survey. Once all of the respondents had finished the survey, the data and computation were analyzed together. Above all, the researcher followed the research protocols for conducting the survey, including the ethical concerns required for this study.

3. Results and Discussion

This chapter presents a discussion of the results and analysis of data. To investigate the problems raised in this study, the acquired data were analyzed using statistical tools. The discussion was presented categorically based on the sequence of the statement of the problem. Relevant related literature was used to discuss and support the findings.

3.1. Profile of the respondents

This section presents the profile of the respondents in terms of age and gender. Table 1 presents the respondent's profile, frequency, and percentage. In terms of age, the result shows that 15 to 16 years old obtained the highest percentage of 43, while the lowest percentage was garnered by 11 to 12 and 21 to 22 years old with 3.3%. It means that almost half of the respondents are around 15 to 16 years old. The next variable is sex. It is categorized as male and female. The result shows that 23.3 percent of the respondents are male and 76.7 percent are female. It means that a higher number of the respondents surveyed are female. The next profile variable is the year level of the respondents. Grade 7 is 3.3%, Grade 8 is 16.7%, Grade 9 is 40%,

Grade 10 is 23.3%, Grade 11 is 6.7% and Grade 12 is 10% which equals to 100 percent. Furthermore, the respondents tally a total of 30. The last variable is the years of dancing of the respondents. The result shows that 1 to 4 years of dancing obtained the highest percentage of 30, while the lowest was garnered by 13 to 16 years of dancing with 16.7 percent.

Table 1. Demographic Profile of High School Students

Profile	Frequency	Percent
1.1 Age		
11-12	1	3.3%
13-14	9	30.0%
15-16	13	43.3%
17-18	3	10.0%
19-20	3	10.0%
21-22	1	3.3%
Total	30	100.0%
1.2 Sex		
Male	7	23.3%
Female	23	76.7%
Total	30	100.0%
1.3 Year Level		
Grade 7	1	3.3%
Grade 8	5	16.7%
Grade 9	12	40.0%
Grade 10	7	23.3%
Grade 11	2	6.7%
Grade 12	3	10.0%
Total	30	100.0%
1.4 Years of Dancing		
1-4 years	9	30.0%
5-8 years	8	26.7%
9-12 years	8	26.7%
13-16 years	5	16.7%
Total	30	100.0%

Level of Strength Training of Dancers of Junior High School Students

Table 2 below provides an overview of the Strength Training of Students of Junior High School Students. The findings revealed an overall mean rating of 4.38 perceived as High which indicates students' strength training is often evident. In terms of the first indicator participation, the rating of 4.35 is perceived as high which indicates that the student's participation is often evident. In terms of the second indicator performance, the rating of 4.17 is perceived as high which indicates that the student's performance is often evident. In terms of the third indicator injury prevention, a rating of 4.37 is perceived as high which indicates that the student's injury prevention is often evident. Lastly, for indicator health benefits with a result of 4.63 is perceived as very high which that the student's health benefits is always evident. With the overall mean in the level of strength training perceived as high, the data is in line to support the claim of Yueqing (2019) that good strength quality can not only avoid the injuries of dancers in sports and prolong their sports life, but also promote dancers to learn faster, master correct dance techniques and give full play to their technical level in the competition.

Table 2. Summary Level of Strength Training of Dancers of High School Students

Indicator	SD	Mean	Descriptive Level
Participation	1.43	4.35	High
Performance	2.72	4.17	High
Injury Prevention	.61	4.37	High
Health Benefits	.49	4.63	Very High
Overall Mean	1.31	4.38	High

Table 2.1 as shown below, the overall mean of the level of strength training in terms of participation is 4.33 perceived as high which indicates student participation is often evident. This means that students' strength training in terms of participation shows that men should participate. Men should participate in strength training for dancers. The data is in line to support the claim of Major (2017) that male dancers are commonly involved in partner lifts, which may encourage a heightened perception of the need to complete resistance training.

Table 2.1. Summary of Level of Strength Training of Dancers of High School Students I participation.

Participation	SD	Mean	Descriptive Level
1. Women should participate in ST.	.71	4.33	High
2. Men should participate in ST.	.72	4.37	High
Overall Mean	.72	4.35	High

In table 2.2 below, the overall mean of the level of strength training in terms of performance is 4.17 perceived as high which indicates students' strength training in terms of performance is often evident. This means that students during strength training in terms of performance think that it has beneficial effects. Strength training has many benefits to dancers and their performances. The data is in line to support the claim of Major (2017) that strength training benefits dancers by reducing injury risk, improving health, and enhancing body image. It is crucial for physical fitness and overall well-being in collegiate dancers.

Table 2.2. Summary of Level of Strength Training of Dancers of High School Students in Performance.

Performance	SD	Mean	Descriptive Level
1. I typically dance during performance season/term time every week.	.71	3.90	High
2. If the school does not have class/rehearsal/performance every day, I still dance on my own on the spare days.	.83	3.93	High
3. ST has beneficial effects on my dance performance.	.57	4.47	High
4. My ST techniques are adequate to help me improve my performance.	.61	4.37	High
Overall Mean	.68	4.17	High

In Table 2.3 below, the overall mean of the level of strength training of dancers of high school students in injury prevention is 4.37 perceived as high which indicates students' strength training in terms of injury prevention is often evident. This means that students during strength training think that they can avoid injury from strength training. Strength training plays a crucial role in injury prevention for dancers. The data is in line with the claim of Yanan et al (2022) that strength training for dancers can aid in injury prevention by improving physical fitness, reducing injury rates, pain intensity, severity, and missed dance activities, as shown in the systematic review.

Table 2.3. Summary of Level of Strength Training of Dancers of High School Students in Injury Prevention.

Injury Prevention	SD	Mean	Descriptive Level
1. My ST techniques are adequate so that I can avoid injury from ST.	.61	4.37	High
Overall Mean	.61	4.37	High

In Table 2.4 below, the overall mean of the level of strength training of dancers of high school students in health benefits is 4.63 perceived as very high which indicates students' strength training is always evident. This means that students during strength training in terms of health benefits think that strength training has significant health benefits. Having proper strength training will give significant health benefits to the dancers. The data is in line to support the claim of Emidio et al (2021) that strength training for dancers enhances muscular strength, power, coordination, and stability without compromising flexibility.

Table 2.4. Summary of Level of Strength Training of Dancers of High School Students in Health Benefits.

Health Benefits	SD	Mean	Descriptive Level
1. ST has significant health benefits.	.49	4.63	Very High
Overall Mean	.49	4.63	Very High

Test of Difference on the Level of Strength Training When Analyzed Across the Profile of the Respondents.

Table 3 below represents the test of difference in the level of flexibility of high school students when analyzed across the profile of the respondents.

Table 3. Test of Difference in the level of Flexibility training of high school students when analyzed across the profile of the respondents.

Profile	F/t-value	p-value	Decision on Ho	Interpretation
Age	.65	.78	Failed to reject Ho	Not Significant
Sex	1.41	.25	Failed to reject Ho	Not Significant
Year Level	.99	.50	Failed to reject Ho	Not significant
Years of Dancing	.92	.56	Failed to reject Ho	Not significant

In terms of age, as shown in Table 3, it garners an F-value of .65 with a p-value of .78 which is greater than 0.05 in the level of significance, indicating that there is no significant difference. The null hypotheses cannot be rejected, indicating that the level of strength training of dancers of high school students does not vary significantly across different age groups.

In terms of sex, as shown in Table 3, it garners an f/t-value of 1.41 with a p-value of .25 which is greater than 0.05 in the level of significance, indicating that there is no significant difference. The decision is

not to reject the null hypotheses. Moreover, this indicates that the level of strength training of dancers of high school students is similar between males and females.

In terms of year level, as shown in Table 3, it garners an f/t -value of .99 with a p -value of .50 which is greater than 0.05 in the level of significance, indicating that there is no significant difference. It fails to reject the null hypotheses indicating that the level of strength training of dancers of high school students does not vary significantly across year levels.

In terms of years of dancing, as shown in table 3, it garners an f/t -value of .92 with a p -value of .56 which is greater than 0.05 in the level of significance, indicating that there is no significant difference. It fails to reject the null hypotheses indicating that the level of strength training of dancers of high school students does not vary significantly across year levels.

These findings indicate that the factors of age, sex, year level, and years of dancing do have a significant impact on the level of strength training of dancers among high school students. It suggests that the students' overall strength training is consistent across these demographic factors. It is important to consider other factors or variables that may influence the students' strength training and interventions to promote their overall strength training effectively. The result supports the findings of Major (2017) that the importance of resistance training for dancers, indicating that gender, dance genre, and year in college were factors influencing dancers' perceived importance of resistance training.

4. Conclusion

This study investigated the self-reported strength training practices of high school cheerleaders. While all participants perceived strength training as beneficial for various aspects of dance, including health, participation, performance, and injury prevention, no significant differences were found based on age, sex, year level, or years of dancing experience.

5. Recommendation

This study provides valuable insight into the self-reported perceptions of high school cheerleaders regarding strength training. While the findings suggest a generally positive attitude towards strength training's benefits for participation, performance, injury prevention, and health, the reliance on self-reported data limits the study's scope.

Here's a recommendation for moving forward:

Move beyond self-reported data: Future research should incorporate objective measures of strength training regimens employed by dancers. This could involve collecting data on actual training routines, exercise selection, intensity, and frequency. Assess the effectiveness of training programs: Studies should evaluate the impact of specific strength training programs on dancer performance, injury rates, and overall well-being. This would provide more concrete evidence for the role of strength training in dance. Expand the sample population: Including dancers from various disciplines beyond cheerleading would broaden the generalizability of the findings. Consider a qualitative approach: In-depth interviews with dancers and coaches could provide valuable insights into their perceptions, motivations, and challenges related to strength training.

By incorporating these suggestions, future research can build upon this initial study and provide a more comprehensive understanding of the relationship between dancer-specific strength training and its impact on various aspects of dance performance and health.

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