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Based on Artificial Intelligence Technology and the "National Physical Fitness Assessment Standard (2023 Revised Edition): Empirical Study on the Impact of Aerobics Dance on the Physical Fitness of College Students

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SUMMARY: *Under the background that artificial intelligence (AI) is rising and the National Physical Fitness Assessment Standard (2023 Revised Version) is put in force, this research makes use of smart fitness testing instruments to investigate the influences that aerobic dance brings to the physical fitness of college students. One hundred students in total have been undergone the testing procedure. In this group, 50 students are the majors of aerobic dance, and 50 are the non-art majors. The experiments have covered many aspects, which include body mass index (BMI), body fat proportion, vital capacity, heart-lung endurance, power, flexibility, equilibrium, and reaction time. The results show that students who take aerobic dance as their major have got obviously higher marks in body shape, body function, and whole body fitness level ($p < 0.001$). The professional training of aerobic dancing is able to effectively promote the promotion of strength, endurance, flexibility and coordination ability.Based on these findings, it is recommended that colleges broaden the scope of aerobic dance courses and enhance intelligent physical fitness monitoring to facilitate the all - around development of students.*

KEYWORDS: *Artificial Intelligence Technology; Aerobics Dance; Physical Fitness; Aerobics Dance Major Students; Non-Art Students; Physical Fitness Testing.*

1 Introduction

In today's era of increasing public health consciousness, the impact of sports on physical well - being has garnered extensive attention. The officially updated National Physical Fitness Assessment Standard (2023 Revised Version) presents more scientific and all - encompassing fitness evaluation criteria. This offers a novel research angle for investigating the impact of aerobic exercise on physical fitness. Aerobic exercise is an all - in - one sport that combines music, dance, and gymnastics, and it has been demonstrated to have a beneficial impact on enhancing physical condition [1-4]. Nonetheless, existing research on the impact of aerobic exercise on the physical well - being of university students remains somewhat limited. Specifically, there is a dearth of comparative investigations between students who specialize in aerobic exercise and ordinary non - art students.

In the past several years, the rapid development of artificial intelligence has led to the extensive use of smart fitness evaluation devices. By integrating high - precision sensors, data manipulation algorithms, and machine learning frameworks, this kind of equipment can

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conduct physical fitness evaluations in an efficient and precise manner[5]. It boasts remarkable advantages in real - time surveillance, data scrutiny, the creation of personalized training plans, health forecasting, and remote administration.Nevertheless, the current research still meets problems in guaranteeing the accuracy and stability of testing, processing big quantities of complex data, and improving the human-machine interaction interfaces. Along with technology's ceaseless development, intelligent fitness testing equipment will possess more broad application prospects within the domains of sports and health.

1.1 Research

The current study examines the impacts of aerobic exercise training on the physical fitness of university students in accordance with the national fitness standard adjusted in 2023, thereby validating its positive enhancement value. Employing the prospective cohort approach, this research selects aerobics majors and regular college students as the study participants. Sophisticated professional equipment is utilized to conduct tests on multiple crucial fitness metrics for both groups. These metrics encompass body mass index, body fat percentage, lung capacity, handgrip strength, flexibility, balance, and reaction time.

Through the comparison of test data, this research carries out the analysis of the correlation between aerobic training and body fitness level. The outcome of the study displays that students whose major is aerobics possess much superior comprehensive body quality, body function and body figure when compared with common students. Long-term regular oxygen-inhaling exercise according to fixed rules systematically promotes enhancement of strength, endurance, flexibility and balance, and also assists in forming elegant body pose that accords with professional beauty demands.

This research carries out quantitative analysis on body constitution differences between the two groups, makes clear the inner mechanism that aerobics training uses to enhance body health, and thus provides effective reference materials for the physical education of colleges. The scientific oxygen-using training can greatly promote the body healthy condition of students, therefore it gives support to their professional study and long-term occupation development. Colleges ought to pay high attention to aerobics courses and give standardized exercise directions, while all college students should actively take part in aerobic exercise to achieve all-round physical and mental growth.

2 Study Subjects and Methods

2.1 Experimental Subjects and Grouping

The research chose students whose academic disciplines were outside the art domain to form the control group. Altogether, there were 50 participants. Out of these, 25 were male and 25 were female, and these two groups of 25 students made up the male and female subsets of the control group respectively. The ages of these students ranged from 20 to 21 years. When they took part in the study, they did not suffer from any serious illnesses or other mental or physical health problems that could potentially disrupt the outcomes of the physical fitness assessment.

The experimental group was composed of 50 students who were focusing on aerobics. This group was then divided into two smaller groups according to gender. One subgroup had 25 male students, and the other had 25 female students. The ages of the students fell between 20 and 21 years, and they had received 2 to 3 years of specialized aerobics training.All the students in the experimental cohort had to fulfill a set of shared requirements. In particular, they had to be free from any significant diseases or other physical problems that might have an effect on the results of the physical ability evaluation.

The selection of participants was implemented through the use of strict inclusion and exclusion criteria. The including standards cover 20–21-year-old formal aerobics major students who have 2–3 years of professional training, they voluntarily take part and have signed informed consent. The people who have chronic diseases, severe sicknesses, fresh wounds or other body situations that influence fitness tests are gotten rid of. These standards guarantee that samples have consistency, enhance the dependability of research, and lay a firm foundation for the exploration of the influences that aerobics exerts upon the physical health of college students.

Through carrying out categorization on the research objects, it is therefore guaranteed that uniformity can be obtained in the aspects of age, health condition, and basic physical characteristics. This identical character is what guarantees the reliability and mutual comparison of the follow-up results of this experiment.

2.2 Experimental Method

This research has employed an experimental method. During the process of the experiment, professional checkers employed a group of intelligent body fitness testing instruments to conduct a comprehensive body fitness assessment of the experimental group (students whose major is aerobics) and the control group (non-art students). Each piece of related data was carefully recorded by people in the test process in order to ensure the accuracy and reliability of the analysis that comes later. For the guarantee that the test results have standardization and comparability, the research workers followed the "National Physical Fitness Measurement Standard (2023 Amended Version)" to carry out data collection and record [7-9]. This standard offered a unified framework for evaluating the results, thereby ensuring the standardization and reliability of the research data. By implementing this standardized approach, the research can objectively compare the disparities in physical fitness between students majoring in aerobics and those not studying art. Consequently, it has provided scientific data support and references for education, teaching, and sports training.The unified examination flow and intellectualized apparatuses reduce man-made mistakes and increase data correctness, hence guaranteeing the standardization and scientific characteristic of the experiment.

2.3 Testing Indicators

This research precisely devises testing indicators in accordance with the National Physical Fitness Assessment Standard (2023 Revised Edition). It integrates the research goals and professional traits of aerobic dance.The chosen indices encompass physical form, physical function, and comprehensive physical qualities. These can comprehensively mirror students' physical fitness conditions and the training outcomes of aerobic dance. Appropriate intelligent testing devices are employed to ensure the accuracy of the tests. This way, it can scientifically investigate the impact of aerobic dance on college students' physical fitness and offer reliable backing for related teaching and training.

Table 1: Testing Indicators.

Test Content	Test Indicator	Test Instrument	Notes
Physical Form	Height	Height Measurement Device	Standard anatomical posture, barefoot, unit: centimeters.
	Weight	Weight Measurement Device	Standard anatomical posture, barefoot, unit: kilograms.
	Body Fat Percentage	Body Fat Measurement Device	Barefoot, maintain a fixed posture.
Physical Function	Vital Capacity	Vital Capacity Measurement Device	Continuous measurement twice, automatically taking the maximum value, unit: milliliters.
	Power Bike Secondary Load Test	Cardiopulmonary Endurance Measurement Device	If the subject encounters any negative reactions, the test will be halted right away. The unit of measurement is milliliters per kilogram per minute.
Physical Fitness	Grip Strength	Grip Strength Measurement Device	Perform the measurement twice in a continuous manner. The maximum value will be automatically documented. It is necessary to conduct the test on both hands. The unit of measurement is kilograms.
	Vertical Jump	Vertical Jump Measurement Device	Vertical Jump Measurement Device Continuous measurement twice to take the maximum value, unit: centimeters.
	Push-ups (Male)/Knee Push-ups (Female)	Push-up/Knee Push-up Measurement Device	Measurement unit: times.
	One-minute Sit-ups	Sit-up Measurement Device	Measurement unit: times.
	Seated Forward Bend	Seated Forward Bend Measurement Device	Barefoot, unit: centimeters.
	Standing on One Leg with Eyes Closed	Standing on One Leg with Eyes Closed Measurement Device	Barefoot, closed eyes, both legs need to be tested, unit: seconds.
	Choice Reaction Time	Choice Reaction Time Measurement Device	Measurement unit: seconds.

Note: The indicators have been chosen from the adult part of the "2023 Revised Edition of the National Physical Fitness Assessment Standard".

2.4 Data Processing

In this research, the SPSS 26.0 statistical software was employed for data analysis. To summarize the fundamental characteristics of the data, descriptive statistical techniques were utilized. Moreover, independent sample t - tests were carried out to compare the fitness indicators between the two groups.To confirm the differences between the groups, the statistical significance level was set at $p < 0.05$. This standardized approach to analysis guarantees the strictness and reliability of the experimental statistical outcomes.

3 Results

3.1 Comparison of Physical Form Test Results

Based on the data that is shown in Tables 2 and 3, an analysis may be carried out in relation to the body fitness of students majoring in aerobics dance and students who are not art majors, with a split that is done according to gender.Within the male participants, the average Body Mass Index (BMI) of the experimental group, which consists of students majoring in aerobic dance, is 19.46, and the average body fat proportion is 15.23. On the other hand, the average BMI of the control group, made up of non - art students, is 22.62, and the average body fat proportion amounts to 19.53.Regarding the female participants, the mean BMI of the experimental cohort (students majoring in aerobic dance) is 18.73, and the mean body fat percentage is 16.58. At the same time, the mean BMI of the control group (non - art students) is 21.57, and the mean body fat percentage is 23.72.

Students majoring in aerobics exhibit more favorable average body mass index (BMI) and body fat percentage compared to non - art students. The differences between these two groups are highly significant ($p < 0.001$).In these two metrics, aerobics majors attain perfect scores, completely fulfilling the nation's top - tier fitness evaluation criteria for BMI and body fat ratio. This clearly shows that engaging in long - term professional aerobics training enables students to maintain a well - proportioned, healthy, and excellent body physique.

The research indicates that aerobic dance training has the following primary impacts on physical appearance metrics. Firstly, engaging in aerobic dance training can elevate students' Body Mass Index (BMI) levels, enabling them to more closely meet the criteria for a healthy weight. Secondly, this type of training can lower the body fat percentage of students, helping them better align with the standards for a healthy body fat ratio. Thirdly, aerobic dance training can enhance students' physical appearance, making it more in line with the aesthetic criteria of artistic fields [10-12]. Even for students not majoring in art, they should also focus on their physical appearance, keeping a good body shape and a healthy body fat percentage.

To sum up, students who take aerobic dance as their major show better body shape. This phenomenon can thus be ascribed to the requirements of physical form which are inherent in aerobic dance training. Educational organizations, which include schools, should put emphasis on the physical fitness development of students who major in aerobic dance. Through the provision of necessary help and direction, they are able to promote the comprehensive growth of such students. At the same time, students who do not take arts as their major also ought to put stress on the development of their body health. They also have the requirement to get the needed support and direction to push their all-round development forward.

Table 2: Comparison of Physical Form Test Results for Male Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
BMI	Experimental Group (Male)	19.46±1.53	4.979	0.000	100	18.5≤BMI<24.0
	Control Group (Male)	22.62±2.78			100	
Body Fat Percentage	Experimental Group (Male)	15.23±2.17	5.467	0.000	100	10.3-17.2
	Control Group (Male)	19.53±3.28			60	

Table 3: Comparison of Physical Form Test Results for Female Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
BMI	Experimental Group (Female)	18.73±1.92	4.350	0.000	100	18.5≤BMI<24.0
	Control Group (Female)	21.57±2.64			100	
Body Fat Percentage	Experimental Group (Female)	16.58±1.86	9.296	0.000	100	10.3-17.2
	Control Group (Female)	23.72±3.36			100	

3.2 Comparison of Physical Function Test Results

Drawing on the data presented in Table 4 and Table 5, this research undertakes a gender - based comparison of physical fitness between students majoring in aerobics and non - art students.Among male students, those majoring in aerobics achieve higher mean scores in the power bike secondary load test and vital capacity compared to non - art students. A similar notable disparity is also evident among female students. In this case, aerobics majors outdo the control group in both of these two metrics.

The average vital capacity and the scores obtained from the power bike secondary load test are significantly greater for students majoring in aerobics than for non - art students. This indicates that aerobics majors possess superior physical cardiopulmonary capabilities, which can be attributed to the long - term functional training provided by professional aerobics courses.There are highly significant statistical disparities in these two indicators between the two groups ($p < 0.001$). This further validates the distinct advantages of aerobics majors in terms of physical function.Aerobics majors achieve a score of 85 points in the vital capacity test and 80 points in the power bike secondary load test. These scores meet the high - level criteria of the national fitness assessment. Their corresponding measured values completely satisfy the highest evaluation benchmarks of the official standard. This strongly demonstrates that systematic aerobics training can effectively enhance students' cardiopulmonary endurance and overall physical function.

The findings of the research suggest that aerobic dance instruction has the following major effects on measures of physical function. First and foremost, aerobic dance training has the ability to enhance students' aerobic stamina, enabling them to achieve better results in the power bike secondary load evaluation. Moreover, it can expand students' lung capacity, leading to more positive performance in the lung capacity test. Thirdly, aerobic dance training can improve students' physical capabilities, including cardiovascular and pulmonary function, muscle strength, and endurance [13-16]. Even students who are not majoring in art should pay attention to their physical functions and maintain good cardiovascular and pulmonary function as well as muscle strength.

To conclude, students majoring in aerobic dance demonstrate superior physical function, which likely stems from the physical function demands of aerobic dance training. Educational institutions, including schools, ought to focus on the physical fitness growth of aerobic dance majors. They should offer essential assistance and direction to foster the all - around development of these students.Concurrently, students not majoring in the arts should also take notice of their own physical fitness development. They as well need to get the necessary support and guidance for promoting their all-round development.

Table 4: Comparison of Physical Function Test Results for Male Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
Power Bike Secondary Load Test	Experimental Group (Male)	48.79±3.26	9.363	0.000	80	≥63.9
	Control Group (Male)	38.73±4.27			60	
Vital Capacity	Experimental Group (Male)	4284.75±386.62	6.294	0.000	85	≥5127
	Control Group (Male)	3567.48±418.59			65	

Table 5: Comparison of Physical Function Test Results for Female Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
Power Bike Secondary Load Test	Experimental Group (Female)	45.58±3.83	8.744	0.000	75	≥58.8
	Control Group (Female)	36.60±3.42			55	
Vital Capacity	Experimental Group (Female)	3073.25±342.54	3.963	0.000	85	≥3559
	Control Group (Female)	2658.61±395.46			75	

3.3 Comparison of Physical Fitness Test Results

Through examining the data which is shown in Tables 6 and 7, we can carry out an analysis of the body fitness levels of students who major in aerobic dance and non-art students, making differentiation between males and females. Let us at first place put focus on the group of male persons. For the experimental group, which consists of aerobic dance majors, the mean grip strength is 46.86. In terms of physical quality indicators, male aerobics majors achieve higher average values in grip strength, vertical jump, push-ups, sit-ups, flexibility, balance and reaction time than ordinary non-art male students.For female students, female aerobics majors also outperform the control group in grip strength, vertical jump, kneeling push-ups, sit-ups, sit-and-reach, single-leg standing balance and reaction speed.Across all the above physical fitness indexes, both male and female aerobics majors obtain obviously better average results than non-art students of the same gender, showing comprehensive advantages in muscle strength, explosive power, core endurance, flexibility, balance and sensory reaction ability.

The comparative statistics indicate that students majoring in aerobics achieve notably higher average scores across all core physical fitness metrics compared to non-art students. The primary cause of their overall superior physical condition is long - term, standardized professional aerobics training.The outcomes of the independent sample t - test reveal highly significant statistical disparities in grip strength, vertical leap, muscle stamina, flexibility, balance, and reaction velocity between the two groups ($p < 0.001$). This serves to further verify the distinct physical fitness benefits enjoyed by aerobics majors.In the national fitness evaluation, aerobics majors meet high - scoring criteria of 80 to 90 points in relevant physical indicators. This conclusively demonstrates that scientific and systematic aerobics training can comprehensively and effectively enhance the overall physical fitness of college students. The national physical fitness test establishes the following top - tier criteria: grip strength should be at least 56.7, vertical jump should be at least 52.9, the number of push - ups should be at least 45, the number of one - minute sit - ups should be at least 43, the sit - and - reach distance should be at least 21.3, the duration of one - legged standing with eyes closed should be at least 86 seconds, and the choice reaction time should be at least 0.42 seconds. Students majoring in aerobic dance meet these more exacting standards across every physical fitness parameter, thus further validating their outstanding physical fitness performance.

This research discovers that aerobic dance training brings the following main influences on body fitness indexes: Firstly, aerobic dance training is able to promote students' handgrip strength, thus allowing them to gain better outcomes in handgrip strength examinations. Secondly, it can promote students' vertical jump capacity, thus leading to better results in vertical jump examinations. Thirdly, the training of aerobic dancing can promote students' push-up ability, hence it brings about better results in push-up assessments.Fourthly, it can enhance students' one - minute sit - up capability, leading to improved performance in one - minute sit - up tests. Fifth, engaging in aerobic dance training can enhance students' flexibility in the sit - and - reach exercise. This improvement enables them to achieve better results in sit

- and - reach assessments.Sixth, aerobic dance training has the potential to bolster students' capacity to stand on a single leg with their eyes shut. As a consequence, they are likely to perform more effectively in one - legged standing with eyes closed evaluations.Seventh, aerobic dance training can reduce students' reaction time when making choices. This reduction leads to superior performance in choice reaction time tests [17-22]. Even non - art students should place emphasis on their physical fitness, striving to maintain good muscle strength and endurance.

To conclude, students majoring in aerobic dance demonstrate superior physical fitness levels. This could be attributed to the physical fitness demands of aerobic dance training. Educational institutions, including schools, ought to focus on the physical fitness progress of aerobic dance majors. They should offer essential assistance and direction to foster the all - around development of these students.At the same time, students who do not take arts as their major also ought to pay attention to the development of their own body health. They themselves also need to obtain the necessary support and guidance to promote their all-round development.

Table 6: Comparison of Physical Fitness Test Results for Male Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
Grip Strength	Experimental Group (Male)	46.86±3.48	5.924	0.000	80	≥56.7
	Control Group (Male)	40.37±4.23			65	
Vertical Jump	Experimental Group (Male)	42.73±4.16	6.956	0.000	80	≥52.9
	Control Group (Male)	33.83±4.86			65	
Push-ups (Male)/Knee Push-ups (Female)	Experimental Group (Male)	30.12±3.28	5.168	0.000	85	≥45
	Control Group (Male)	25.34±3.26			75	
One-minute Sit-ups	Experimental Group (Male)	38.26±3.24	8.727	0.000	90	≥43
	Control Group (Male)	29.37±3.93			75	
Seated Forward Bend	Experimental Group (Male)	20.63±2.36	9.722	0.000	95	≥21.3
	Control Group (Male)	12.39±3.52			80	
Standing on One Leg with Eyes Closed	Experimental Group (Male)	50.65±7.33	9.770	0.000	90	≥86
	Control Group (Male)	31.48±6.52			80	
Choice Reaction Time	Experimental Group (Male)	0.46±0.06	3.201	0.002	90	≥0.42
	Control Group (Male)	0.51±0.05			75	

Table 7: Comparison of Physical Fitness Test Results for Female Students.(N=50)

Indicator	Group	MEAN±S	T	P	Score	100 Points
Grip Strength	Experimental Group (Female)	30.74±3.58	7.435	0.000	85	≥35.8
	Control Group (Female)	23.58±3.22			60	
Vertical Jump	Experimental Group (Female)	27.65±3.66	3.540	0.001	80	≥35.5
	Control Group (Female)	23.56±4.47			65	
Push-ups (Male)/Knee Push-ups (Female)	Experimental Group (Female)	27.50±4.62	4.967	0.000	85	≥38
	Control Group (Female)	20.47±5.36			75	
One-minute Sit-ups	Experimental Group (Female)	31.22±3.85	5.406	0.000	90	≥37
	Control Group (Female)	24.66±4.69			80	
Seated Forward Bend	Experimental Group (Female)	21.89±2.25	9.422	0.000	95	≥24.5
	Control Group (Female)	15.18±2.76			80	
Standing on One Leg with Eyes Closed	Experimental Group (Female)	56.73±6.64	14.000	0.000	90	≥90
	Control Group (Female)	32.75±5.41			80	
Choice Reaction Time	Experimental Group (Female)	0.45±0.04	3.467	0.001	90	≥0.45
	Control Group (Female)	0.51±0.05			75	

3.4 Comparison of Comprehensive Physical Fitness Assessment Scores

According to the data which is shown in Table 8, an analysis on the body condition of students who learn aerobic dance as their major and students who are not in art majors can be carried out, with a division made for the two genders. Among the male students, the whole body quality assessment score of the experiment group, which is composed of aerobic dance major students, is 87.75, it shows an excellent level of body quality.Conversely, the total physical fitness assessment score of the control group, composed of non - art students, stands at 70.5, which satisfies the passing criteria. Regarding female students, the total physical fitness assessment score of the experimental group (students majoring in aerobic dance) is 87.5, achieving an outstanding level. At the same time, the total physical fitness assessment score of the control group (non - art students) is 75, reaching a satisfactory level [7-9].

The scores clearly show that students majoring in aerobic dance outperform non-art students in the overall physical fitness assessment scores. This implies that aerobic dance majors have better physical fitness, which might be linked to the physical fitness requirements of aerobic dance training.In terms of performance levels, aerobic dance majors reach excellent levels in the overall physical fitness assessment scores, whereas non-art students attain either qualified or good levels. This further validates that aerobic dance majors have superior physical fitness.According to the national physical fitness test calculation criteria, for adults aged 20 - 49, the overall physical fitness assessment score 'a' is regarded as excellent when $a \geq 83$, good when $75 \leq a < 83$, qualified when $60 \leq a < 75$, and unqualified when $a < 60$ [7-9]. The fact that aerobic dance majors achieve excellent levels in the overall physical fitness assessment scores demonstrates their outstanding physical fitness performance.

To conclude, students majoring in aerobic dance tend to achieve higher scores in comprehensive physical fitness evaluations. This phenomenon might be attributed to the physical fitness demands imposed by aerobic dance training. Schools and educational establishments ought to focus on the physical fitness growth of aerobic dance majors and offer essential support and direction to foster the all - around development of these students.In the meantime, students whose majors are not in the arts should also pay attention to the advancement of their own physical well - being. They, as well, require the essential support and direction to foster their all - around development.

Table 8: Comparison of Comprehensive Physical Fitness Assessment Scores.

Group	Score	Level
Experimental Group (Male)	87.75	Excellent
Control Group (Male)	70.50	Qualified
Experimental Group (Female)	87.50	Excellent
Control Group (Female)	75.00	Good

It is important to point out that for adults aged between 20 and 49, the comprehensive physical fitness evaluation score, referred to as "a", is calculated in the following manner: a = Body Mass Index (BMI) multiplied by 0.05 plus Body Fat Percentage multiplied by 0.10 plus Vital Capacity multiplied by 0.10 plus Power Bike Secondary Load Test result multiplied by 0.15 plus Grip Strength multiplied by 0.1 plus Vertical Jump height multiplied by 0.10 plus Push - ups (for men) or Kneeling Push - ups (for women) count multiplied by 0.05 plus One - minute Sit - ups count multiplied by 0.05 plus Sit - and - Reach distance multiplied by 0.10 plus One - legged Standing with Eyes Closed duration multiplied by 0.10 plus Choice Reaction Time value multiplied by 0.10.For adults within the 20 - 49 age bracket, if the score a is greater than or equal to 83, it is regarded as outstanding. When the score falls within the range where 75 is

less than or equal to a and a is less than 83, it is considered satisfactory. A score where 60 is less than or equal to a and a is less than 75 is judged as meeting the requirements. And if the score a is less than 60, it is classified as not meeting the standard.

4 Results

A thorough examination is carried out regarding the physical fitness condition of students specializing in aerobic dance. This research takes into account not only the current national physical fitness assessment criteria but also performs a comprehensive comparative analysis of previous criteria. Previously, physical fitness assessment criteria might have laid more stress on conventional indicators like body mass index (BMI), body fat proportion, and vital capacity. Although these indicators offer some insights into physical fitness, they frequently fail to completely disclose the students' real physical fitness levels [7-9, 23, 24]. On the contrary, the current physical fitness assessment criteria are more all - encompassing. They cover crucial indicators such as the power bike secondary load test, handgrip strength, and vertical jump. This change indicates the continuous enhancement and renewal of physical fitness assessment criteria in line with social development and the growing awareness of health [7-9, 23, 24].

Past physical fitness assessment criteria had shortcomings in comprehensively evaluating students' physical well - being. For instance, when solely basing the evaluation on Body Mass Index (BMI) and body fat percentage, one can only gain insights into students' weight and body fat proportion. However, this approach fails to account for other important physical attributes such as muscle strength, endurance, and flexibility.On the other hand, the current assessment standards are more all - encompassing. They can with more accuracy measure the situation of students' body health. This lets students obtain a more perspicuous cognition of their own bodily abilities and thus work out more custom-made training projects and amendments. The goal of promoting physical fitness examination norms is to more sufficiently assess students' body situation. It enables students to obtain a more overall comprehension of their own body fitness, and thus carry out more pointed training and adjustment works. Furthermore, the promotion of these standards also has the contribution to the promotion of students' physical health and advances their all-round development. In other words, by means of more scientific body quality assessments, we can more effectively guide students to carry out pointed exercises and make suitable nourishment selections to raise their body quality levels.

The outcomes indicate that students majoring in aerobics obtain higher comprehensive fitness marks than common students, hence this results from the strict body demands that the professional training brings. Aerobics training has the systematic function of improving students’ strength, endurance, flexibility and balance, therefore it also assists in shaping graceful body postures that conform to artistic aesthetic standards. Existing related research has also confirmed that aerobic exercise training can overall promote body quality, thus having obvious functions on enhancing physique and molding body figure.

Drawing upon the outcomes of this research and the data from existing scholarly works, it can be deduced that the physical fitness condition of students majoring in aerobic dance surpasses that of non-art students. This disparity might be associated with the exacting demands of aerobic dance training on physical fitness [25-29]. Aerobic dance training places emphasis on cultivating strength, stamina, suppleness, and equilibrium. This, in turn, aids in elevating the physical fitness levels of students. Moreover, engaging in aerobic dance training enables students to achieve an appealing physique, thereby meeting the aesthetic criteria of art - related disciplines.

Aerobic dance training has the capacity to comprehensively enhance students' physical capabilities in terms of strength, stamina, suppleness, and equilibrium. Additionally, it aids

students in attaining a well - proportioned body stance that aligns with the aesthetic criteria of art disciplines.Consistent and professional training significantly boosts students' physical well - being. This improvement allows them to more effectively engage in professional studies and adjust to long - term career progression.Educational institutions ought to place emphasis on physical fitness training for students majoring in aerobics. They should offer scientific training advice and professional assistance to foster the all - around growth of these students. Moreover, students not majoring in art can also draw on the findings of this research to engage in aerobic exercises. By doing so, they can actively enhance their physical condition and achieve a healthy state of physical and mental development. (Refer to Table 9)

Table 9: Improvement Plan for the Physical Fitness Development of Non-Art Students.

Classification	Specific Content
Physical Form	Create a scientifically - designed dietary regimen to guarantee that students ingest sufficient nutrients, particularly proteins and carbohydrates, which are essential for promoting muscle development and providing energy. Augment flexibility exercises, like yoga and Pilates. Engage in these activities 2 to 3 times per week, with each session spanning 30 to 45 minutes. Conduct routine evaluations of body proportions and muscle contours. Then, modify training regimens according to the outcomes of these assessments to attain an ideal physical appearance.
Physical Function	Augment aerobic endurance exercises, like running at a steady pace and skipping rope. These activities should be carried out three to four times per week, with each session spanning 30 to 45 minutes. Enhance muscle - building exercises, like weight - lifting and push - ups. These activities should be carried out two to three times per week, with each session spanning 30 to 45 minutes. Periodically evaluate the cardiopulmonary function and balance capacity. Then, modify the training programs according to the evaluation findings to attain the best possible physical performance.
Physical Fitness	Incorporate aerobic dance workouts, like cardiovascular exercises and dance steps, into your routine. These sessions should be carried out two to three times per week, with each instance spanning 30 to 45 minutes. Enhance the training of reaction speed. For example, engage in rapid - response games and dexterity training. This training should be carried out one or two times per week, and each session should have a duration of 15 to 20 minutes. Periodically evaluate physical well - being and modify training regimens according to the outcomes of the evaluation to attain the best possible physical condition.

5 Conclusion

The present research carries out a comparison on the body healthy condition of students who major in aerobics and students who are not art majors. The outcome indicates aerobics major students acquire higher overall comprehensive fitness scores, hence this is because of long-term specialized training that aims at strength, endurance, flexibility and balance. The students who major in aerobics show better BMI and body fat percentage, have more excellent body figure, higher lung capacity and better cardiopulmonary function. They also have better performance

than common students in grip strength, jumping ability, core strength, flexibility, balance and reaction speed in all fitness indices.

This present research has devised one physical body fitness promotion program for those students who do not major in art. This program includes training parts that are connected with body outward look, body working ability, and whole body healthy strength. The following comprehensive training content and schedule are presented: formulate a scientifically grounded dietary plan, intensify flexibility training, incorporate aerobic dance workouts, and boost reaction speed training. By implementing the above - mentioned training components and schedule, students without an art background can achieve a holistic improvement in their physical appearance, physical capabilities, and overall physical health. This will enable them to meet professional standards and establish a robust basis for their future career advancement.

To conclude, the physical fitness condition of students majoring in aerobic dance is better than that of non - art students. This phenomenon could be associated with the physical fitness demands of aerobic dance training. Through participation in aerobic dance training, pupils can improve their physical well - being and are more capable of dealing with academic pursuits and future career advancement. Educational institutions, including schools, should place emphasis on the physical health development of students. They must provide essential support and guidance to foster the holistic growth of learners. Meanwhile, students whose majors are not in the field of art ought to also take notice of their physical state and make improvements according to the suggestions put forward in this study.

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