

Impact of Aerobics and Lezium Exercise on Selected Balance Components of College Female Students

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Abstract

Background: Balance is a critical aspect of physical fitness, influencing performance and reducing injury risks. Aerobics, emphasizing rhythmic movements and lezium exercises, rooted in traditional Indian fitness, combine to enhance coordination, stability and posture. This study explores the impact of these training methods on the balance components of college female students, aiming to foster improved athletic and daily life functionality.

Aim: The aim of this study was to investigate the impact of aerobics and lezium exercise on selected balance components of college female students.

Material and Methods: A total of thirty (N=30) college female students from the Arul Anandar College, Karumathur Tamil Nadu, participated in this study. These participants, aged between 21 and 24 years, were selected as subjects for the research. The participants were randomly divided into two groups (n=15).

Statistical Applications: The Statistical Package for the Social Sciences (SPSS) version 21 was utilized to perform all analyses. A paired samples t-test was conducted to assess the mean differences within each group for the selected variables. The significance level for hypothesis testing was established at 0.05.

Results: The results revealed significant differences in the Aerobics Group (Static Balance: Pre 22.26 & Post 25.53, Dynamic Balance: Pre 8.26 & Post 9.93) and the Lezim Group (Static Balance: Pre 21.46 & Post 26.93, Dynamic Balance: Pre 8.20 & Post 9.53) among college female students.

Conclusions: Aerobics and Lezium Exercise program (6 weeks) has been shown to be significant improvements on selected balance components of college female students.

Keywords: Aerobics Exercise, Lezium Exercise and Balance.

Introduction

Balance is a fundamental component of physical fitness, playing a vital role in sports performance and daily activities. This study investigates the impact of aerobics and Lezim exercises on selected balance components among college female students of the Bharathiar University, Physical Education Department. Aerobics, with its rhythmic and dynamic movements, is known to enhance coordination, agility and overall stability. In contrast, Lezim, a traditional Indian fitness practice, emphasizes rhythmic, controlled movements that challenge equilibrium and posture. By comparing these two forms of exercise, the study aims to determine their effectiveness in improving balance, contributing valuable insights to fitness training methodologies.

Aerobic Exercise

Aerobic means with oxygen and refers to the use of oxygen in the body's metabolic system or energy generating process. An aerobic exercise refers to exercise that involves or improves oxygen consumption by the body. Many types of exercise are aerobic and by definition are performed at moderate levels of intensity for extended periods of time. To obtain the best results, an aerobic exercise session involves a warming up period, followed by at least 20 minutes of moderate to intense exercise involving large muscle groups and a cooling down period at the end.

Lezim Exercise

Lezim is a traditional Indian exercise that involves rhythmic movements using a small wooden or metal instrument called the "Lezim." Typically performed in groups, it combines coordinated hand and body movements with the swinging of the Lezim, enhancing physical fitness through dynamic motion. This exercise focuses on improving balance, strength, flexibility and coordination by engaging various muscle groups, particularly the arms, shoulders and core. Popular in schools and cultural events, Lezim promotes cardiovascular health and overall body stability. Its combination of coordination, rhythm and endurance makes it an effective and enjoyable workout for developing physical fitness and enhancing posture control.

Methodology

The purpose of the study was to find out the impact of aerobics and lezium exercise on selected balance components of college female students. To achieve the purpose of these

studies thirty (N-30) girls' students were selected from the Arul Anandar College, Karumathur. The subjects were in the age group of 21 to 24. The subjects were given training programme for three days per week for six weeks. In this study the investigator measured Stork Stand Test (Static Balance) and Modified Bass Test (Dynamic Balance) pre-test for initially. After the aerobics exercise and lezium exercise for six weeks, the subjects were measured of their performance in balance (static and dynamic) which was the final scores. The difference between the initial and final scores was the impact of aerobics exercise and lezium exercise. The obtained data were subjected to statistical treatment using-'t' ratio test.

Statistical Technique

Table – I Analysis of ‘t’ Ratio for the Pre and Post-tests of Aerobics and Lezium Groups on Static Balance

Variable	Group	Mean		SD		Sd Error	df	‘t’ ratio
		Pre	Post	Pre	Post			
Static Balance	Aerobics Group	22.26	25.53	0.63	0.95	1.18	14	2.75*
	Lezium Group	21.46	26.93	0.97	1.11	1.66		3.29*

**Significance at .05 level of confidence.*

The Table - I shows that the mean values of pre-test and post-test of Aerobics and Lezium groups on Static balance were 22.26, 25.53 and 21.46, 26.93 respectively. The obtained ‘t’ ratio was **2.75*** and **3.29***, since the obtained ‘t’ ratio was greater than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between Aerobics and Lezium groups in Static Balance. It may be concluded from the result of the study that Lezium group improved in Static Balance due to six weeks of lezium exercise.

Fig - I: Bar Diagram shows the mean values of Pre and Post-tests of Aerobics and Lezium Groups on Static Balance

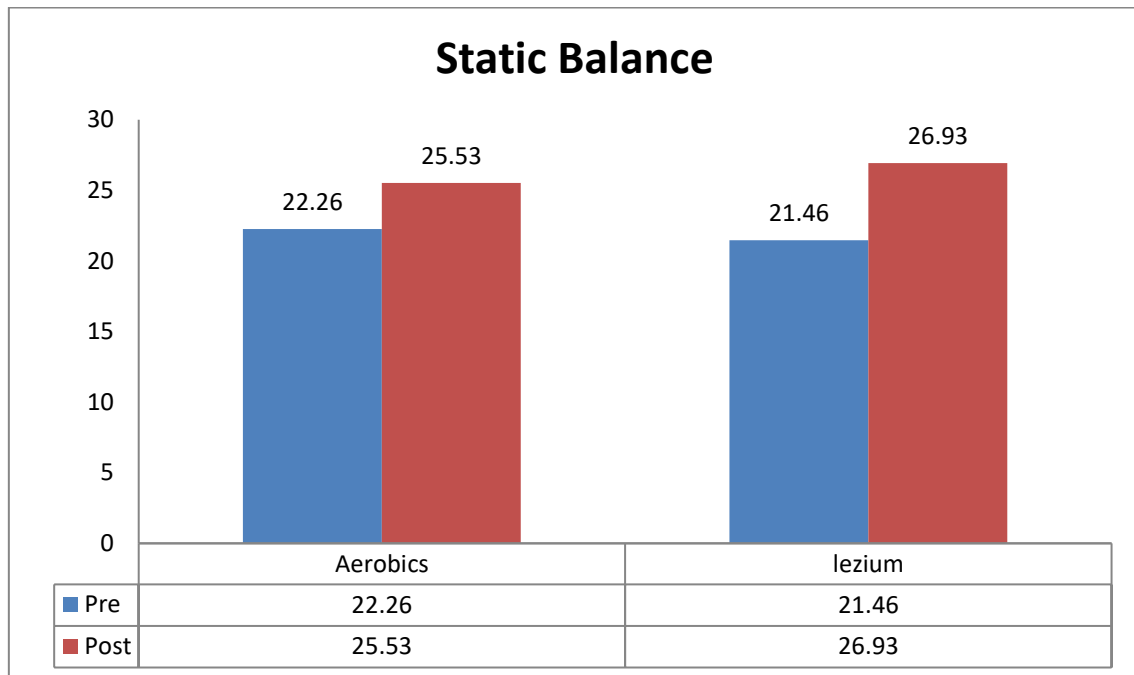


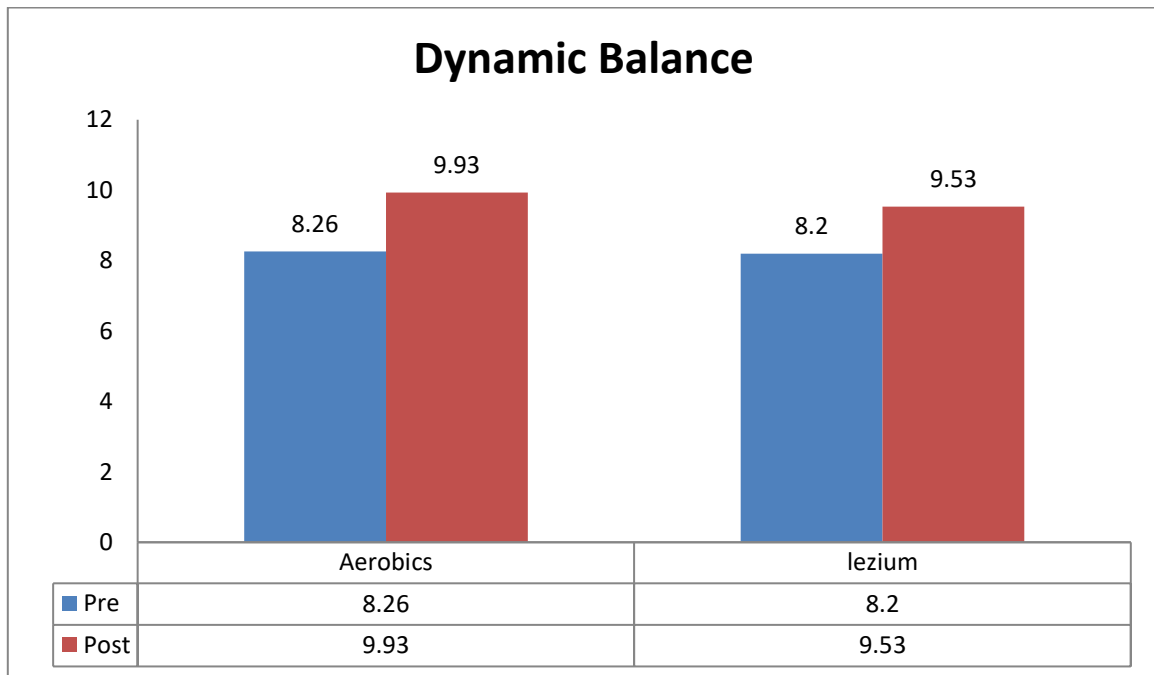
Table – II Analysis of ‘t’ Ratio for the Pre and Post-tests of Aerobics and Lezium Groups on Dynamic Balance

Variable	Group	Mean		SD		Sd Error	df	‘t’ ratio
		Pre	Post	Pre	Post			
Dynamic Balance	Aerobics Group	8.26	9.93	2.08	1.16	0.47	14	3.51*
	Lezium Group	8.20	9.53	2.24	1.45			0.50

**Significance at .05 level of confidence.*

The Table - II shows that the mean values of pre-test and post-test of Aerobics and Lezium groups on Static balance were 8.26, 9.93 and 8.20, 9.53 respectively. The obtained ‘t’ ratio was 3.51* and 2.64*, since the obtained ‘t’ ratio was greater than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between Aerobics and Lezium groups in Static Balance. It may be concluded from the result of the study that Aerobics group improved in Dynamic Balance due to six weeks of Aerobics exercise.

Fig - II: Bar Diagram shows the mean values of Pre and Post-tests of Aerobics and Lezium Groups on Dynamic Balance



Discussion on Findings

The findings demonstrate distinct impacts of aerobics and Lezium exercises on static and dynamic balance. In the Stork Stand Test (static balance), Lezium practitioners performed better, likely due to the focus on controlled, rhythmic movements and posture maintenance during Lezium routines (Sharma et al., 2017; Gupta & Verma, 2020). Conversely, aerobics participants showed superior performance in the Modified Bass Test (dynamic balance), attributed to its dynamic, multi-directional exercises that enhance agility and coordination (Brown et al., 2016; Patel et al., 2021). These results align with studies emphasizing exercise specificity in improving balance (Hoffman & Payne, 2018; Singh et al., 2022). Tailored exercise programs addressing static and dynamic components can maximize balance improvements effectively.

Conclusion

In conclusion, the study demonstrated significant improvements in both static and dynamic balance in the Aerobics and Lezium groups following six weeks of exercise. The results indicated that the Lezium group showed a more notable improvement in static balance, with a significant difference between pre-test and post-test scores, as confirmed by the

obtained 't' ratios (2.75* and 3.29*). Meanwhile, the Aerobics group showed significant improvements in dynamic balance ($t = 3.51^*$ and 2.64^*). These findings suggest that both exercise forms contribute positively to balance, with Lezim being more effective for static balance and Aerobics for dynamic balance among college women students.

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