

A STUDY ON ANAEROBIC TRAINING AND CIRCUIT TRAINING ON PERFORMANCE ABILITIES AMONG GYMNASTS OF SPORTS ACADEMIES OF TELANGANA

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ABSTRACT:

The purpose of the study is to examine the effect of anaerobic training and circuit training on Performance abilities among gymnasts of telangana state. A sample of (n=40) Subjects was selected by Randomly. Who Are Taking Training From Two Different Sports Academies. Their Age Ranged Between 15-18 Years.The Protocol For The Performance abilities Information Was Collected By upstart For Testing Unevn bars, T-Test Was Used To Find Out The Significant Difference In Performance abilities Between The Two Sports Academies. The Level Of Significance Was Fixed At 0.05. After Examination, There Was No Significant Difference In unevn bars Sports Academies.

Keywords: Gymnastics, Performance abilities

1. INTRODUCTION

Gymnastics, as we know it today, was developed by Friedrich Ludwig John, a German educator, in the early 19th century. John founded the Turnverein movement, which aimed to promote physical fitness and national unity through gymnastics. He is often referred to as the "father of gymnastics" for his contributions to the development of the sport.

Modern gymnastics refers to the competitive sport of gymnastics that is recognized by the International Gymnastics Federation (FIG) and practiced around the world. It includes both artistic gymnastics and rhythmic gymnastics.

Modern gymnastics has also become more inclusive, with greater opportunities

for athletes of all ages, genders, and abilities to participate in the sport. The FIG has made efforts to promote diversity and inclusion, with initiatives such as the Women in Gymnastics Commission and the FIG Foundation for Solidarity.

Artistic gymnastics is a discipline that involves performing a variety of physical movements and routines on different apparatus such as the vault, uneven bars, balance beam, and floor exercise. It is a highly skilled and demanding sport that requires strength, flexibility, agility, coordination, and balance.

The main aim of this study is to effect these training to all the age groups among artistic women gymnasts of telangana. Because it is necessary to ensure the learning quality of gymnastic events and also it has the biggest influence on girls' performance of gymnastics elements.

2. Purpose of the study

The purpose of the study was to find out the “A Study on anaerobic training and circuit training on Performance abilities among gymnasts of Telangana state”.

3.METHODOLOGY

3.1. Selection of the Subjects:

The scholar had selected a total of 40 subjects randomly. The subjects were women gymnasts who have been undergoing training from sports academies i.e. Sports authority of Telangana (SAT, N=20), and Sports authority of India, (SAI, N=20) of Telangana. These women subjects were between the 15-18 years of age and participated voluntarily with informed consent for this study.

3.2. Selection of variables

The investigator reviewed the available scientific literature on the basis of discussion with experts, feasibility criteria, and availability of equipment's and relevance of the present

study variable. Performance abilities - Uneven bars. The selection of the for Uneven bars is upstarts of women gymnasts.

3.3. Experimental Design

The scholar has chosen a pre-post intervention research study. The total women gymnastic subjects were 40 and aged between 15-18 years.

These subjects were divided into two equal groups and selected randomly. The first group ‘A’ was the Anaerobic experimental group (N=20), the second ‘B’ experimental group was circuit training (N=20).

The protocol for the Uneven bars information was collected by Upstarts in seconds for testing. All tests were conducted with informed consent of the subjects and before performing tests the warm-up for 10 minutes is mandatory. 6 weeks of training will be given to experimental groups for 3 days/week with 35 min duration per day.

3.4 Statistical tools used for analysis

The raw data were arranged separately, tabulated and subjected for the descriptive statistical analysis by using SPSS. The statistical tool for analysing the data was independent T-Test to find the significant difference in mean between the two sports schools fitness abilities. The level of significance was fixed at 0.05. Results the research related data are presented in the following tables and graphs below:

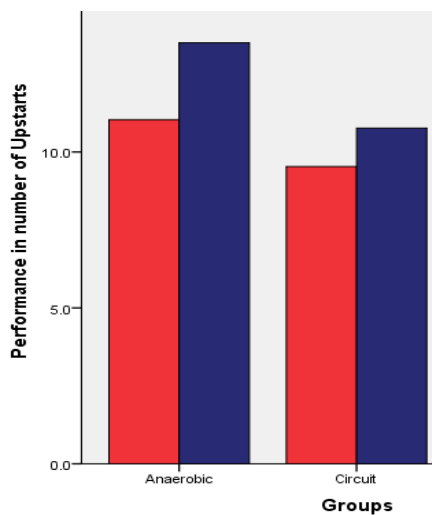
Table No.1 Performance Abilities mean differences between SAT and SAI

Sl.No	Name of the Group		Upstarts		M I	t value	Sig
			Pre-Test	Post-Test			
1	Anaerobic Experimental	Mean	11.03	13.50	22.39 %	11.29	.000
		SD	3.01	3.36			
2	Circuit experimental	Mean	9.53	10.77	13.01 %	-5.28	.000
		SD	2.30	2.74			

Table shows the comparison of Uneven Bars performance ability in upstarts test in three groups between pretest and post-test means as well as magnitude of

increase. The anaerobic experimental group mean difference was higher than other groups with 22.39% magnitude of increase between pre-test and post-test and the second position was in the circuit group with 13.01% while the control group was in negative -8.77%. In the anaerobic group the Uneven Bars performance ability in upstarts test means difference between pre-test and post-test mean=-2.466 and SD=1.195 with $t_{(0.05)}(29)= 11.298$ and $p=.000(2\text{-tailed})$, circuit group difference between pre-test and post-test mean=-1.233 and SD=1.278 with $t_{(0.05)}(29)=-5.286$ and $p=.000(2\text{-tailed})$ and the control group difference between pre-test and post-test mean=.500 and SD=.731 with $t_{(0.05)}(29)=3.746$ and $p=.001(2\text{-tailed})$. Hence these results demonstrated that the Uneven Bars performance ability in upstarts test was statistically significant difference.

Graph No.1 Comparisons of Uneven bars. efficiency among two groups



Above graph shows the comparison of Uneven Bars performance ability in upstarts test among three groups between pre-test and post-test means. The red color bar indicates the pretest and blue color bar indicates the post-test results and Y axis represents the performance in number of upstarts. Anaerobic experimental group cardiovascular endurance showed higher improvement than other groups. The circuit training group was in second position while the control group Uneven Bars performance ability decreased.

Table No.2 ANOVA test Uneven bars results between groups and within the groups

Performance ability in Uneven bars		Sum of Squares	df	Mean Square	F	Sig.
Upstarts test_pre	Between Groups	453.889	2	226.944	40.234	.000
	Within Groups	490.733	87	5.641		
	Total	944.622	89			
Upstarts test_post	Between Groups	1073.489	2	536.744	73.002	.000
	Within Groups	639.667	87	7.352		
	Total	1713.156	89			

The table shows the statistical ANOVA results about Uneven Bars performance ability as one of the performance ability variables among two experimental and one control groups. After post-test the in upstarts test of the one-way ANOVA revealed a statistically significant effect of treatment on Uneven Bars performance ability $F_{(0.05)}(2,87)=73.002, (.000)p < 0.05$. Hence the above results revealed that there was a significant difference between groups and within groups.

3. DISCUSSIONS

The Uneven bars performance ability was tested by Upstarts test on uneven bars. The results showed that magnitude of increase (22.39%) in anaerobic experimental group was higher than circuit training and this was statistically proved by differentiate between pre-test and post-test mean=-2.466 and SD=1.195, $t_{(0.05)}(29)=-11.298, p=.000(2-tailed)$ was statistically significant. The circuit training groups upstarts ability M.I (13.01%)also improved but lesser than other anaerobic experiment group with statistical results between pre-test and post-test mean=-1.233 and SD=1.278, $t_{(0.05)}(29)=-5.286, p=.000(2-tailed)$ was statistically significant. The scholar's remarks are joined to those of Michael Hiley et al.(2023) studied biomechanically on technical understanding and manipulation to succeed the task. Nicole Schmid et al.(2019) experimented on 8 novice gymnastics upstart abilities and found their difficulty hence intervention of 4 months of training they successfully improved their upstart ability. ANOVA results $F_{(0.05)}(2,87)=73.002, (.000)p < 0.05$

explained that there was a significant difference between groups and within groups. Tukey's post hoc test described that the uneven bars performance ability in anaerobic group had significantly different with that of circuit and control groups.

4. CONCLUSIONS

The upstart technique is a gold standard technique to know the fundamental uneven bars technique with optimum coordination as well as becoming expert as learning progresses. As training progressed technique and coordination became more like the expert gymnast

According to the present study, it can be assumed that there was a certain a study on performance abilities through anaerobic and circuit training could help on one of the artistic gymnastic events i.e. upstart ability on uneven bars for women artistic gymnasts of Telangan. The findings clearly showed that there was an improvement in upstart abilities after 6 weeks of training.

5. RECOMMENDATIONS

1. A similar study may be conducted on male gymnasts performance abilities, so that the results of this study would be more authenticated.
2. More studies should be conducted on cognitive abilities and physical fitness variables which could have an impact on performance of women gymnasts.
- 3 A similar study may be conducted on female gymnasts Vaulting house, balance beam performance abilities, so that the results of this study would be more authenticated.

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