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A study to infer the impact of swiss ball exercise programme intervention on fitness of school girls

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Abstract

Swiss ball exercise has been used for various purposes at present. It has been for improvement of physical fitness, concentration ability, balancing ability, health-related physical fitness. It is accepted that Swiss ball exercise have differences with others physical exercise. At the same time Swiss ball has been included in multi gym. Considering the nature of equipment and benefits girls are getting interested with ball exercises. An exercise ball, also known as a Swiss ball, is a ball constructed of soft elastic with a diameter of approximately 35 to 85 centimeters (14 to 34 inches) and filled with air. It is most often used in physical therapy, athletic training and exercise. Balls are cheaper equipment, easy to handle, easy to maintain, and soothing to exercise with. Considering the above benefits the equipment could be very much suitable for women or girls, but very few studies have been conducted in this area and so the problem was designed in such a manner just to infer the "The impact of Swiss ball exercise programme on fitness of school girls". For the present study 30 school girls aged between 15-25, who were selected randomly from Madanpur Panchayat area as subjects. From data analysis it is clear that the performance of the girls with regard to the fitness variables developed significantly due the training.

Keywords: Swiss ball, intervention

Introduction

Swiss ball exercise has been used for various purposes at present. It has been for improvement of physical fitness, concentration ability, balancing ability, health-related physical fitness. It is accepted that Swiss ball exercise have differences with others physical exercise. At the same time Swiss ball has been included in multi gym. Considering the nature of equipment and benefits girls are getting interested with ball exercises. To assess the impact of ball exercises on girls or females the author planned to conduct this study.

Background: An exercise ball, also known as a Swiss ball, is a ball constructed of soft elastic with a diameter of approximately 35 to 85 centimeters (14 to 34 inches) and filled with air. The air pressure is changed by removing a valve stem and either filling with air or letting the ball deflate. It is most often used in physical therapy, athletic training and exercise. Balls are cheaper equipment, easy to handle, easy to maintain, and soothing to exercise with. Considering the above benefits the equipment could be very much suitable for women or girls, but very few studies have been conducted in this area and so the problem was designed in such a manner just to infer the impact of Swiss ball exercise programme on fitness of school girls.

Purpose

The sole purpose of the study was to infer the impact of ball exercises on the improvement of fitness variables of school girls.

Significance

The findings of the study will make clear the benefits of Swiss Ball exercise protocol on fitness of girls.

Draw attention towards an unconventional area of exercise.

Help the fitness experts with literary materials

Design of study: The research was conducted with single group pre-test post-test design

Methodology

The Subjects

The subjects for the present study were 30 school girls aged between 15-25, who were selected randomly from Madanpur Panchayat area.

The Variables: speed, Leg explosive strength, Muscular strength of arms, abdominal muscular endurance, Static Balance

The pretest post-test design was used for collection of data.

As personal data the age height and body weight were recorded.

Warming up of the subjects

Subjects performing flexed arm hang

The exercise protocol

1. Ball Push up - Feet Up, 2. Ball Sit-Up 3. Ball Squat - One-Legged (leg power) 4. Ball Arm-Leg Extension – Alternating (Flexibility), 5. Ball Jackknife, 6. Ball Triceps Extension, 7. Ball Squat - One-Legged (strength of lower limbs) 8. Ball Table Top (Strength of upper body part) 9. Ball Squeeze –Lying (Upper back) 10. Ball Rear Deltoid

Row (Upper arm)

Training schedule: The key focus of the training programme was to train the untrained females with as much care as possible. The girls were engaged in orientation for one week for getting acquainted with the equipment Ball and getting accustomed with the various exercises, mentioned above.

Training schedule: In the first week all the 10 exercises mentioned above were performed with 1 set 10 repetitions. In the second week all the 10 exercises were performed with 2 sets 10 repetitions. In the third week all the 10 exercises were performed with 3 sets 10 repetitions. In the fourth week all the 10 exercises were performed with 3 sets 15 repetitions. In the fifth week all the 10 exercises were performed with 3 sets 20 repetitions. In the sixth week all the 10 exercises were performed with 3 sets 25 repetitions. Every session was accompanied with a warm up and cooling down bout of 10 minutes each.

Result and Discussion

In this part of the thesis the results of the investigation have been presented in tabular form and related discussion has been made.

Table 1: Mean and SD of Personal data

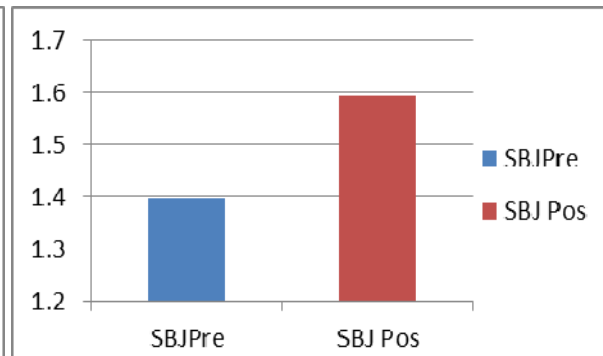
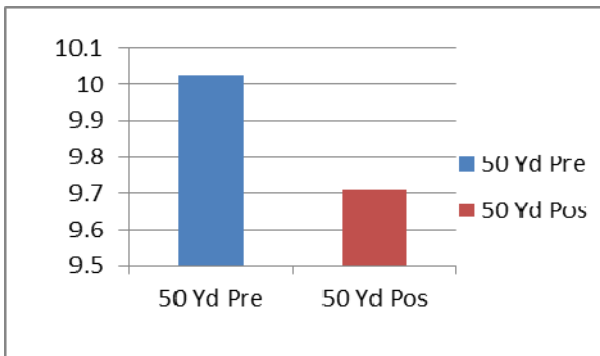
Personal Data	N	Minimum	Maximum	Mean	Std. Deviation
Age Yrs	30	15	23	17.73	2.243
Weight kgs	30	38	67	49.23	7.899
Height cms	30	1.45	1.74	1.5557	.06061
Valid N (listwise)	30				

From table No.1 it is clear that the mean Age of the subjects is 17.73 yrs. and their SD is 2.243. The mean weight of the

subjects is 49.43 kgs and their SD is 7.899. The mean height of the subjects is 1.5557cms and their SD is .060 respectively.

Table 2: Mean and SD of fitness variables during Pre Test

	N	Minimum	Maximum	Mean	Std. Deviation
50 Yd Dash secs.	30	7.8000	13.6100	10.0256	1.07491
SBJ cms.	30	1.0000	1.7500	1.39566	.200889
Sit up Nos.	30	5	38	16.96	7.014
FA Hang Secs.	30	2.0000	46.1900	13.9926	11.3480
SS Test	30	1.6000	15.0900	5.9966	3.36695
Reaction Time mm	30	3.2000	18.4000	10.2866	3.96803
Valid N (listwise)	30				



From Table No. 2 it is clear that the mean and SD of the fitness variables during their Pre Test are: For 50 yd dash mean and SD are 10.025 and 1.074. Mean and SD of SBJ are 1.395 and .200.

The mean and SD of sit ups are 16.96 and 7.01. The mean and SD of Flex arm Hang are 13.992 and 11.348. The mean and SD of reaction time are 10.28 and 3.96 respectively.

Table 3: Mean and SD of Fitness Variables during post test

	N	Minimum	Maximum	Mean	Std. Deviation
50 yd Dash secs	30	8.64	11.20	9.7080	.59388
SBJ cms	30	1.30	1.95	1.5927	.18586
Sit Up nos	30	12	45	21.57	6.442
FA Hang secs	30	4.20	55.88	21.8513	14.08124
SS Test	30	4.27	58.12	16.7043	12.08365
Reaction Time mms	30	1.76	22.30	12.7107	3.84521
Valid N (listwise)	30				

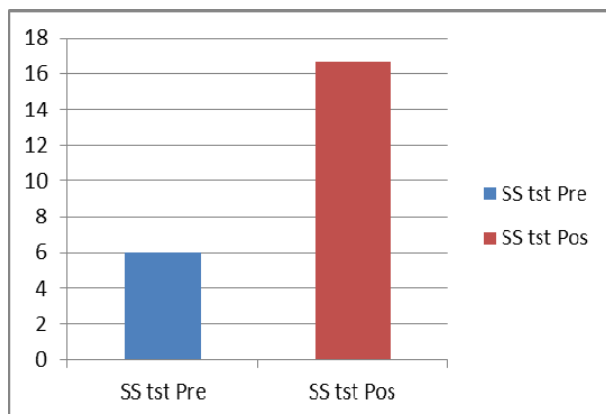
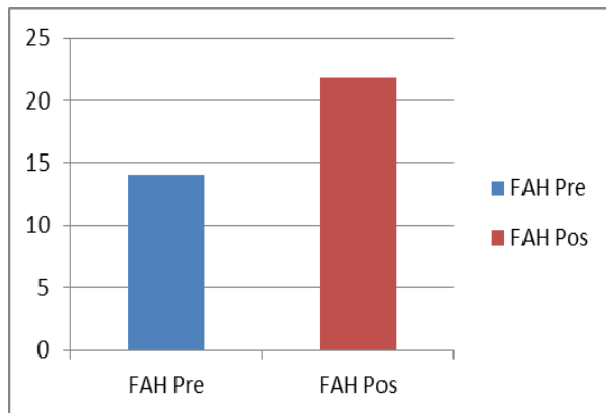
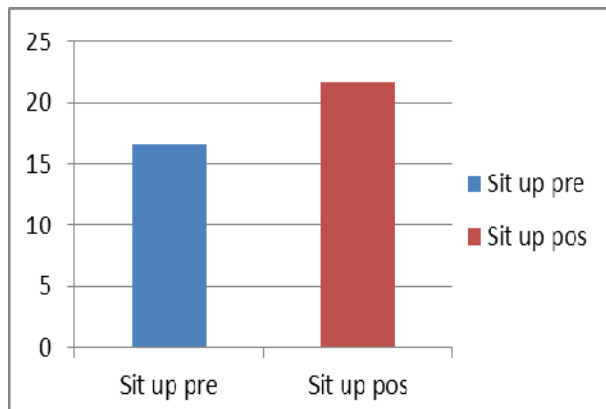
From table No 3 it is clear that the mean and SD of the fitness variables during their Post Test are: Mean and SD of 50 yd dash are 9.7080 and .59388. Mean and SD of SBJ are 1.5927 and .1858. Mean and SD of Sit Ups are 21.57 and 6.442. Mean and SD of FA Hang are 21.8513 and 14.08124. Mean and SD of SS Test are 16.7043 and 12.08365. Mean and SD of Reaction Time are 12.7107 and 3.84521.

As the means of the fitness variables are different during the pre and the post tests Paired samples test was computed to ascertain the degree between the means.

Difference of mean between pre and post-test for Flex arm Hang

Table 4: paired samples t test of fitness variables during the Pre and Post tests

	Fitness variables	N	Correlation	Sig.
Pair 1	50 yds dash sec & 50 Yds Post	30	.624	.000
Pair 2	SBJ Pre & SBJ Post	30	.721	.000
Pair 3	Sit up pre & Sit up Post	30	.751	.000
Pair 4	FAH Pre & FAH Post	30	.470	.009
Pair 5	SS Test Pre & SS Test Post	30	.040	.836



From table no. 4 it is clear that in case of 50 yds dash the subjects showed a significant change, the change was significant in case of Standing Broad Jump, the subjects also shown a significant development in case of sit ups as well as flex Arm Hang, only with the exception in case of SS test. As a whole the subjects exhibited significant development in most of the fitness variables.

Conclusion

Performance of the school girls with respect to 50 yds. dash developed significantly due to the Swiss Ball Exercise Program. Performance of the school girls with respect to Standing Broad Jump developed significantly due to the Swiss Ball Exercise Program. Performance of the school girls with respect to Flex Arm Hang developed significantly due to the Swiss Ball Exercise Program.

Recommendations

From the above findings it is clear that ball exercises play an important role in promotion or development of Physical Fitness, which stand in favour of the findings of the present study.

Moreover it is somehow clear that ball exercise is a new concept in the exercise regimen and the equipment is cheap as well as easy to handle hence this exercise protocol may prove to be effective in overall fitness development of women.

Exercise with ball may be performed indoor and with greater exhaustion of the body parts which may easily attract the female community.

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