



ISSN: 2456-0057
IJPNPE 2018; 3(2): 142-144
© 2018 IJPNPE
www.journalofsports.com
Received: 07-05-2018
Accepted: 08-06-2018

Dr. S Blessy Selva Arasan
HOD- Department of Physical
Education, Kalasalingam
Academy of Research and
Education (Deemed to be
University), Krishnankoil,
Tamil Nadu, India

Consequence of Swiss ball training on core strength, stability and flexibility of university male players

Dr. S Blessy Selva Arasan

Abstract

The purpose of the study was to assess the result of Swiss ball training on core strength and stability and flexibility of university male players. Thirty (N=30) male university players were selected randomly as subjects, their age ranged from 19 to 23 years from Kalasalingam academy of research and education (Deemed to be university), Krishnankoil, Virudhunagar, Tamil Nadu, India. The selected players were divided into two groups of fifteen each. The group - I was control group (CG) and group - II was the Swiss ball training group (SBTG). The Swiss ball training group was underwent Swiss ball exercise programme for five days in a week for 12 weeks from 6.30am to 7.30am. The selected dependent variables are core strength, stability and flexibility. Swiss ball exercises are seated circles, reverse twist, normal sit-ups, hip rolls, bridging, normal oblique, reverse back extension, leg roll, reverse crunch, abdominal ball. The control group did not take part in any special training programmes. The core strength and stability was tested by core strength and stability test and the flexibility was tested with sit and reach test. The collected data from the CG and SBTG group prior to and immediate after the training programme on selected criterion variables were statistically analyzed with analysis of covariance (ANCOVA). The result indicates that the SBTG was compared to the CG, it was much improvement on core strength, stability and flexibility.

Keywords: Core strength, stability, flexibility, Swiss ball, abdominal strength

Introduction

Core stability relates to the bodily region bounded by the abdominal wall, the pelvis, the lower back and the diaphragm and its ability to stabilize the body during movement. The main muscles involved include the transverses abdominals, the internal and external oblique, the quadrates labarum and the diaphragm. The diaphragm is the main muscle of breathing in the human and so breathing is important in providing the necessary core stability for moving and lifting. All movement, even of the arms and legs, begins in the body's core, and any imbalances or malfunctions in the core will lead to problems in the extremities due to incorrect use of the body to accomplish movement. To ensure a strong and centered movement pattern (acceleration, deceleration, and dynamic stabilization) the core muscles must stabilize before the extremities properly activate. Core stability is required to stand up straight, to kick a ball, to throw a ball to, to walk, run, jump, and climb stairs. And also it is more important to sports performance! "Core training" is a phrase on the lips of every fitness professional, fitness magazine writer, and even everyday gym rat. But how many people really understand what "core training" means or even where "the core" is on their body? Currently there is limited and conflicting evidence that improving core stability or core muscle strength improves athletic performance or prevents injury. Perhaps the lack of agreement on the definition and measurement of core strength and stability contributes to the lack of hard scientific evidence and conflicting evidence. Functional strength, stability and flexibility training are all built on the foundation of a strong and stable core. So the researcher interested to make an attempt on impact of Swiss ball training on core Strength and stability and flexibility variables.

Methodology

Selection of Subjects: To achieve the purpose of this study thirty (N=30) university male players were selected randomly as subjects from Kalasalingam academy of research and education (Deemed to be university), Krishnankoil, Virudhunagar, Tamil Nadu, India.

Correspondence

Dr. S Blessy Selva Arasan
HOD- Department of Physical
Education, Kalasalingam
Academy of Research and
Education (Deemed to be
University), Krishnankoil,
Tamil Nadu, India

The age of the subjects ranged from 19 to 23 years. The selected subjects were divided into two groups of fifteen each. The group - I was named as control group (CG) and group - II was the Swiss ball training group (SBTG). All subjects in the experimental group were given Swiss ball training programme for five days in a week for 12 weeks duration in addition to the regular activities of the college as per the curriculum.

Selection of Variable: To find out the significant improvement by through Swiss ball training, core strength, stability and flexibility were the dependent variables selected for this study.

Training Schedule: The Experimental group underwent their respective training for five consecutive days per week for twelve weeks from 6.30am to 7.30am. All the subjects involved in this study were carefully monitored throughout the training programme. The Swiss Ball Training Group (SBTG) underwent Swiss ball exercises are Seated Circles (15 Deep Circles in each direction), Chest Press (2 Sets of 12 - 15 lifts each side - with 20 seconds rest), Reverse Twist (2 Sets of 10 - 15 turns each side with 20 seconds between sets),

Normal Sit – Ups (3 Sets of 10 slow lifts. Hold for 3 - 5 seconds in upward phase), Hip Rolls (12 Slow rolls each side for 2 sets - 20 seconds rest between sets), Bridging (2 Sets of 12 - 15 lifts with 20 seconds rest between sets), Normal Plank (2 Sets of 45 seconds lift with 20 seconds rest between sets), Normal Oblique (2 Sets of 15 slow lifts with 20 seconds rest between sets), Reverse Back Extension (15 Slow lifts aim for 3 - 5 seconds per exercise), Superman’s (2 Sets of 12 - 15 lifts each hand, with 20 seconds rest between sets), Leg Roll (heel dig) (2 sets of 15 repetition with 20 seconds rest between sets) Reverse crunch (2 sets of 15 repetition with 20 seconds rest between sets), Abdominal ball rotation (2 Sets of 12 - 15 lifts each side - with 20 seconds rest). The control group did not take part in any special training programmes.

Test Administration: The present study was to find out the effect of Swiss ball training on core Strength, stability and flexibility of university male players. From the availability and feasibility of literature the following standardized tests were used to collect relevant data on the selected variables and they are presented in the following table -I.

Table 1

S. No	Dependent Variables	Test Items	Unit of Measurements
1.	Core Strength & Stability	Core Strength & Stability Test	In Points
2.	Flexibility	Sit and Reach Test	In Centimeters

Collection of Data: The Pre-test data were collected two days before the training programme and post-test data were collected two days after the training programme. In both cases, the data were collected in two consecutive days.

statistically analyzed with analysis of covariance (ANCOVA) to find out the significant difference between control and experimental. In all the cases 0.05 level of significance was fixed to test the hypotheses.

Statistical Technique: The collected data from the control and experimental groups prior to and immediate after the training programme on selected criterion variables were

Analysis of Data
The influence of Swiss ball training on each dependent variable were analyzed and is presented the below table -II.

Table 2: Analysis of Covariance on Flexibility, Core Strength and Stability of Control Group and Swiss ball Training Group

Dependent Variables	Test	CG	SBTG	“F”-ratio
Core Strength & Stability	Pre Test	35.53	46.33	7.26*
	Post Test	37.93	64.66	
	Adjusted Post Test	36.23	57.49	
Flexibility	Pre Test	18.60	19.00	5.48*
	Post Test	19.00	26.00	
	Adjusted Post Test	19.00	23.45	

*Significant At .05 Level of Confidence.

(The table value required for significance at .05 level with df 1 and 27 is 4.21).

The above table shows that the obtained pre-test and post-test and adjusted post-test means of core strength and stability of control group are 35.53 points, 37.93 points and 36.23, the Swiss ball training group are 46.33 points, 64.66 points and 57.49 points. The obtained F-ratio value is 7.26* which is greater than the table value 4.21 with df 1 and 27 required for significance at .05 level. The result indicates that there is a significant improvement among the groups in the performance of Core strength and stability. The obtained pre-test, post-test and adjusted post-test means of flexibility of control group are 18.60 cm, 19.00 cm and 19.00 cm, Swiss ball training group are 19.00 cm, 26.00 cm and 23.45 cm respectively. The obtained F-ratio value is 5.48*, which is higher than the table value 4.21 with df 1 and 27 required for significance at .05 level. The result shows that there is significant difference exist among the groups in improving the

flexibility.

Conclusions

From the analysis of the data, the following conclusions were drawn,

1. The Swiss ball training group achieved significant improvement on core strength and stability and flexibility.
2. The Swiss ball training group was compared to the control group; it was much improvement on core strength and stability.
3. The Swiss ball training group compared with the control group there was changes on flexibility.

Recommendations

In the present study, it was concluded that Swiss ball training were improved core strength and stability and flexibility,

hence it is recommended that all level of players can implemented the Swiss ball exercise training in their training schedule it will improve the core strength and stability and flexibility.

References

1. Stanton R. The effect of short-term Swiss ball training on core stability and running economy. *The journal of strength and conditioning research*. 2004; 18(3):522-528.
2. Players Thomas W. The relationship between core strength and performance in division in female soccer, *Journal of exercise physiology*, online. 2009; 12:2.
3. Marshall PW, Murphy BA. Core stability exercises on and off a Swiss ball.
4. Michael Duncan. Muscle activity of the upper and lower rectus abdominals during exercises performed on and off a Swiss ball. *Journal of bodywork and movement therapies*. 2009; 13(4):364-367.
5. Keogh JW. Can common measures of core stability distinguish performance in a shoulder pressing task under stable and unstable conditions? *Journal of strength conditioning res*. 2010; 24(2):422-9.
6. Escamilla RF. Core muscle activation during Swiss ball and traditional abdominal exercises, *Journal orthopedic sports and physiotherapy*. 2010; 40(5):265-76.
7. Marshall. Increased deltoid and abdominal muscle activity during Swiss ball bench press. *The journal of strength & conditioning research*. 2006; 20:4.