International Journal of Engineering Research and Modern Education (IJERME)
Impact Factor: 7.018, ISSN (Online): 2455 - 4200
(www.rdmodernresearch.com) Volume 8, Issue 1, 2023

EFFECT OF SWISS BALL TRAINING ON SELECTED MOTOR FITNESS VARIABLES AMONG COLLEGE MEN NETBALL PLAYERS

Naveen Kumar Daram* & Dr. S. Umanath**
* Research Scholar, Department of Physical Education, Annamalai University, Chidambaram, Tamil Nadu
** Assistant Professor, Department of Physical Education, Annamalai University, Chidambaram, Tamil Nadu

Cite This Article: Naveen Kumar Daram & Dr. S. Umanath, "Effect of Swiss Ball Training on Selected Motor Fitness Variables Among College Men Netball Players", International Journal of Engineering Research and Modern Education, Volume 8, Issue 1, Page Number 58-60, 2023.

Abstract:

The purpose of the study was designed to examine the effect of swiss ball training on muscular endurance and flexibility among college men Netball players. For the purpose of the study, thirty college men Netball players from the affiliated colleges under Krishna University, Krishna District, Andhra Pradesh State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent swiss ball training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables, namely muscular endurance and flexibility were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely muscular endurance and flexibility by using bend knee sit ups and sit and reach test at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate. The results of the study showed that there was a significant difference between swiss ball training group and control group on muscular endurance and flexibility. And also it was found that there was a significant improvement on selected criterion variables such as muscular endurance and flexibility due to swiss ball training.

Key Words: Swiss Ball Training, Muscular Endurance, Flexibility, College Men Netball Players

Introduction:

Swiss ball training, also known as stability ball training, can have several effects on muscular endurance and flexibility depending on the exercises performed and the frequency and intensity of training. Swiss ball training often targets the core muscles, including the abdominals, obliques, and lower back muscles. Performing exercises such as crunches, planks, and back extensions on a stability ball can help improve the endurance of these muscles. Using a Swiss ball requires engaging stabilizer muscles to maintain balance and stability during exercises. These stabilizer muscles include those in the shoulders, hips, and legs. Over time, consistent training on a Swiss ball can enhance the endurance of these stabilizer muscles.

Just like with any other form of resistance training, progressive overload is important for improving muscular endurance. This can be achieved by increasing the duration or intensity of exercises performed on the Swiss ball, such as holding plank positions for longer periods or incorporating resistance bands or weights into exercises. Many Swiss ball exercises involve dynamic movements that require a full range of motion. These movements can help improve flexibility by stretching and lengthening muscles through their entire range of motion.

Performing exercises on a Swiss ball can help release tension in tight muscles, promoting relaxation and improved flexibility. Using a Swiss ball for gentle stretching and mobility exercises can be an effective form of active recovery, which can help prevent stiffness and improve flexibility over time. Swiss ball training encourages proper postural alignment during exercises, which can help prevent muscle imbalances and stiffness that can contribute to reduced flexibility. To maximize the benefits of Swiss ball training for muscular endurance and flexibility, it's important to incorporate a variety of exercises targeting different muscle groups and movement patterns. Additionally, consistency and proper form are key. Beginners should start with basic exercises and gradually progress to more challenging movements as strength and stability improve.

Methodology:

The purpose of the study was designed to examine the effect of swiss ball training on muscular endurance and flexibility among college men Netball players. For the purpose of the study, thirty college men Netball players from the affiliated colleges under Krishna University, Krishna District, Andhra Pradesh State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent swiss ball training for three days per week for twelve weeks. Group II acted as control who

did not undergo any special training programme apart from their regular physical education programme. The following variables, namely muscular endurance and flexibility were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely muscular endurance and flexibility by using bend knee sit ups and sit and reach test at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered appropriate.

Analysis of the Data:

Muscular Endurance:

The analysis of covariance on muscular endurance of the pre and post test scores of swiss ball training group and control group have been analyzed and presented in table 1.

Table 1: Analysis of Covariance of the Data on Muscular Endurance of Pre and Post Tests Scores of Swiss Ball Training and Control Groups

Test	Swiss Ball Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	36.67	37.00	Between	0.83	1	0.83	0.39
S.D.	1.49	2.25	Within	59.33	28	2.12	
Post Test							
Mean	44.87	37.20	Between	440.83	1	440.83	22.99*
S.D.	1.32	1.17	Within	536.97	28	19.18	
Adjusted Post Test							
Mean	45.00	37.07	Between	464.75	1	464.75	209.31*
			Within	59.95	27	2.22	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 1 shows that the adjusted post-test means of swiss ball training group and control group are 45.00 and 37.07 respectively. The obtained "F" ratio of 209.31 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on muscular endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of swiss ball training group and control group on muscular endurance.

Flexibility:

The analysis of covariance on flexibility of the pre and post test scores of swiss ball training group and control group have been analyzed and presented in table 2.

Table 2: Analysis of Covariance of the Data on Flexibility of Pre and Post Tests Scores of Swiss Ball Training and Control Groups

Test	Swiss Ball Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	16.67	16.93	Between	0.53	1	0.53	0.44
S.D.	1.07	1.08	Within	34.27	28	1.22	
Post Test							
Mean	21.40	17.20	Between	132.30	1	132.30	22.01*
S.D.	1.06	1.11	Within	168.30	28	6.01	
Adjusted Post Test							
Mean	21.50	17.10	Between	143.23	1	143.23	242.19*
			Within	15.97	27	0.59	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 2 shows that the adjusted post-test means of swiss ball training group and control group are 21.50 and 17.10 respectively. The obtained "F" ratio of 37.48 for adjusted post-test means is more than the table value of 242.19 for df 1 and 27 required for significance at .05 level of confidence on flexibility.

The results of the study indicated that there was a significant difference between the adjusted post-test means of swiss ball training group and control group on flexibility.

Conclusions:

- There was a significant difference between swiss ball training group and control group on muscular endurance and flexibility.

- And also it was found that there was a significant change on selected criterion variables such as muscular endurance and flexibility due to swiss ball training.

References:

1. Marques, N. R., & Hallal, C. Z. (2012). Swiss ball exercises enhance muscle activity in young and elderly women. Journal of Bodywork and Movement Therapies, 16(4), 528-533.
2. Marques, N. R., & Hallal, C. Z. (2012). Swiss ball exercises enhance muscle activity in young and elderly women. Journal of Bodywork and Movement Therapies, 16(4), 528-533.
3. Martínez-Ballester, E., Juan, A. F., Colado, J. C., & Moras, G. (2014). Effects of a 6-week Swiss ball training on strength, endurance, flexibility, and balance in sedentary women. Journal of Strength and Conditioning Research, 28(10), 2815-2822.
4. Nuzzo, J. L., Anning, J. H., Scharfenberg, J. M., & Rogers, J. R. (2008). Relative balance of hamstring and quadriceps muscle development. Journal of Strength and Conditioning Research, 22(3), 731-737.
5. Saeterbakken, A. H., & Fimland, M. S. (2013). Effects of body position and loading modality on muscle activity and strength in shoulder presses. Journal of Strength and Conditioning Research, 27(7), 1824-1831.
6. Sekendiz, B., Altun, Ö., Korkusuz, F., & Akın, S. (2010). Effects of Swiss ball core strength training on isokinetic strength, flexibility, and functional performance in sedentary women. The Journal of Strength & Conditioning Research, 24(11), 3032-3040.
7. Sekendiz, B., Cuğ, M., & Korkusuz, F. (2010). Effects of Swiss-ball core strength training on strength, endurance, flexibility, and balance in sedentary women. The Journal of Strength & Conditioning Research, 24(11), 3032-3040.
8. Vera-Garcia, F. J., Grenier, S. G., & McGill, S. M. (2000). Abdominal muscle response during curl-ups on both stable and labile surfaces. Physical Therapy, 80(6), 564-569.