



ISSN Print: 2664-7281
ISSN Online: 2664-729X
Impact Factor: RJIF 8
IJSEPE 2024; 6(1): 24-27
<https://www.sportsjournals.net>
Received: 02-12-2023
Accepted: 11-01-2024

Dr. G Radhakrishnan
Director, Department of
Physical Education, Sir
Theagaraya College, Chennai,
Affiliated to the University of
Madras, Chennai, Tamil Nadu,
India

Effect of own body exercise with specific recreational activities on selected strength variables among volleyball players

Dr. G Radhakrishnan

DOI: <https://doi.org/10.33545/26647281.2024.v6.i1a.69>

Abstract

Background: The purpose of the study was to find out the effect of Own Body Exercise with Specific Recreational Activities (OBEWSRA) on selected strength variables among volleyball players.

Methods: Data were analysed from thirty collegiate volleyball players (VB) who were selected from Chennai, Tamil Nadu. The age of the selected subjects was between 17 to 25 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent own body exercise training with specific recreation activities (OBEWSRA) thrice in a week for six weeks, and each session lasted for 45 minutes and the Group - II - that was a control group (CG) did not undergo any special training apart from the regular exercises. The explosive strength and strength endurance were measured and tested for both the group members before and after the training session. The Analysis of variance (ANOVA) which has a set value of $p < 0.05$ was performed to find out the significant mean differences.

Results: The study revealed that the selected criterion variables of explosive strength and strength endurance significantly improved in the six weeks duration of OBEWSRA among volleyball players.

Concluded: It was concluded that OBEWSRA significantly increased explosive strength and strength endurance among volleyball players.

Keywords: Own body exercise, specific recreational activities, explosive strength, and strength endurance

Introduction

Bodyweight exercises are crucial for volleyball players as they contribute to functional strength, balance, and stability essential for movements like jumping, spiking, and blocking (Bompa, & Carrera, 2003) ^[7]. These exercises promote flexibility, improving the range of motion necessary for reaching, diving, and performing various on-court actions, ultimately aiding in injury prevention (Chow, 2019) ^[8]. The adaptability and accessibility of bodyweight exercises make them practical for players to incorporate into their training routines, both on and off the court. Moreover, these exercises enhance explosive power through plyometrics and quick-twitch muscle fiber development, contributing to effective movements (Santos, 2021) ^[9]. Core strength, another vital aspect for stability and power, is targeted through bodyweight exercises like planks and leg raises. Additionally, bodyweight exercises can improve cardiovascular endurance, helping players sustain their performance during demanding volleyball matches. Overall, incorporating bodyweight exercises into a well-rounded training program is essential for the comprehensive development of a volleyball player's physical capabilities, contributing to their success on the court (Bonder, & Shim, 2023) ^[10].

Volleyball players can benefit from a diverse range of recreational activities to enhance their overall well-being and performance (Mack, 2011) ^[11]. Engaging in activities such as hiking, cycling, or swimming provides cardiovascular exercise and cross-training opportunities. Yoga and Pilates contribute to flexibility and core strength, supporting injury prevention. Team sports like soccer or basketball offer a chance for players to improve agility and cardiovascular fitness while enjoying a break from volleyball-specific skills. For more volleyball-centric recreation, beach volleyball or Spikeball can be both enjoyable and skill-refining.

Corresponding Author:
Dr. G Radhakrishnan
Director, Department of
Physical Education, Sir
Theagaraya College, Chennai,
Affiliated to the University of
Madras, Chennai, Tamil Nadu,
India

Participating in volleyball camps, pick-up games, or recreational tournaments allows players to maintain their connection to the sport in various social and competitive settings. Striking a balance between these recreational pursuits and volleyball training not only fosters a well-rounded athleticism but also ensures a more enjoyable and sustainable approach to the game (Aquino *et al.*, 2022) ^[12].

Incorporating own body exercises into a volleyball player's routine, along with specific recreational activities, holds significant importance for their overall performance, injury prevention, and enjoyment of the sport. Bodyweight exercises like squats, lunges, and planks contribute to functional strength, agility, and core stability, enhancing key aspects of volleyball performance. Combining these exercises with recreational activities provides players with opportunities to apply their skills in a more relaxed setting, promoting a holistic approach to fitness. These activities not only offer a change of pace but also challenge different aspects of their athleticism, including lateral movements and quick reactions. Moreover, engaging in activities like hiking or cycling helps maintain cardiovascular fitness and endurance, essential for sustained performance during volleyball matches. The inclusion of bodyweight exercises and specific recreational activities thus creates a well-rounded training regimen, fostering a balance between strength, agility, and overall physical enjoyment that contributes to the overall development and longevity of volleyball players in their sport (Landry, 2012) ^[13].

In the dynamic and physically demanding sport of volleyball, the importance of explosive power and strength endurance cannot be overstated. Explosive power is vital for executing dynamic movements like jumping for spikes or blocks, enabling players to reach greater heights and move swiftly across the court. It is particularly critical for offensive plays, contributing to powerful serves and spikes. Additionally, quick lateral movements and reactions demand explosive power, enhancing overall agility. Meanwhile, strength endurance is essential for sustaining high-intensity performance throughout a match. As volleyball matches can be prolonged and physically taxing, strength endurance ensures that players maintain their effectiveness in actions such as digging, blocking, and serving, reducing the risk of fatigue-related errors and

injuries. The combination of explosive power and strength endurance results in a well-rounded athlete, capable of excelling in various facets of the game, providing a competitive advantage in critical moments and contributing to overall athletic prowess on the volleyball court (Arthur-Banning, 2018) ^[14]

Materials and Methods

Data were analysed from thirty collegiate volleyball players who were selected from Chennai, Tamil Nadu. The age of the selected subjects was between 17 to 25 years. Further they were classified at random in two equal groups of 15 (n=15) subjects each. Group - I (Experimental Group) underwent own body exercise training with specific recreation activities (OBEWSRA) thrice in a week for six weeks, and each section lasted for 45minutes and the Group - II - that was a control group (CG) did not undergo any special training apart from the regular exercises.

Training Programme

During the own body exercise with specific recreational activities period, a six-week of own body exercise was undertaken by the experimental group on Mondays, Tuesdays and Wednesdays along with their routine exercises. Every day the training lasted for one hour in the morning. The subsequent exercise was monitored in the training session, the schedule consisted of 10min warm up which includes jogging and dynamic stretches. After this, the subjects carried out own body exercises. The ended the training session with cool down and stretches routine for 15min.

Statistical Procedure

The Analysis of Co-Variance (ANCOVA) which has a set value of $p < 0.05$ was performed to find out the significant mean differences.

Results and Discussion

The data collected prior and after the experimental period on explosive strength (ES) and strength endurance (SE) of Own body Exercise with Specific recreational Activities Group and Control Group (CG) is analysed and presented in table – I and II.

Table 1: Ancova for pre and post data on explosive strength (Scores in Centimetres)

Test	EX- G	CG	SV	SS	DF	MS	F
Pre-mean	78.46	78.66	B	0.30	1	0.30	0.02*
			W	411.07	28	14.68	
Post-mean	83.46	78.60	B	177.63	1	177.63	14.74*
			W	337.33	28	12.04	
Adjusted mean	83.55	78.51	B	189.98	1	189.98	110.19*
			W	46.55	27	1.72	

The Pre-Test: The calculated "F" value was 0.02 correspondingly lower and indicates no significant changes. The post-test the obtained "F" value was 14.74 correspondingly higher than the required value and affirmed

significant changes. The adjusted post-test: The obtained "F" value was 110.19 correspondingly higher than the required value and affirmed significant changes.

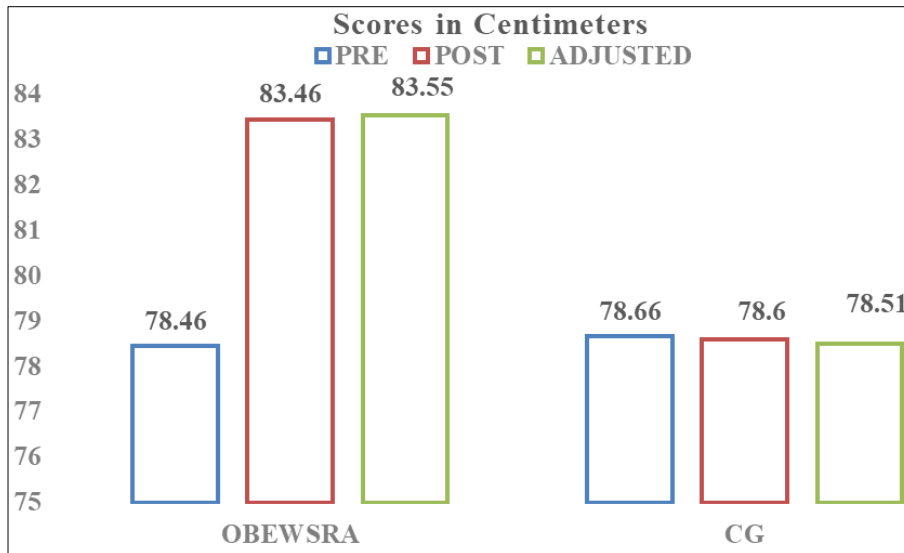


Fig 1: Test differences on explosive strength

Table 2: Ancova for pre and post data on strength endurance (Scores in Numbers)

Test	Ex- G	CG	SV	SS	DF	MS	F
Pre-mean	36.33	36.66	B	3.33	1	3.33	0.45
			W	203.33	28	7.26	
Post-mean	41.06	37.40	B	100.83	1	100.83	11.93*
			W	236.53	28	8.44	
Adjusted mean	41.39	37.06	B	138.21	1	138.21	102.18*
			W	36.52	27	1.35	

The Pre-Test: The calculated "F" value was 0.45 correspondingly lower and indicates no significant changes. The post-test The obtained "F" value was 11.93 correspondingly higher than the required value and affirmed

significant changes. The adjusted post-test: The obtained "F" value was 102.18 correspondingly higher than the required value and affirmed significant changes.

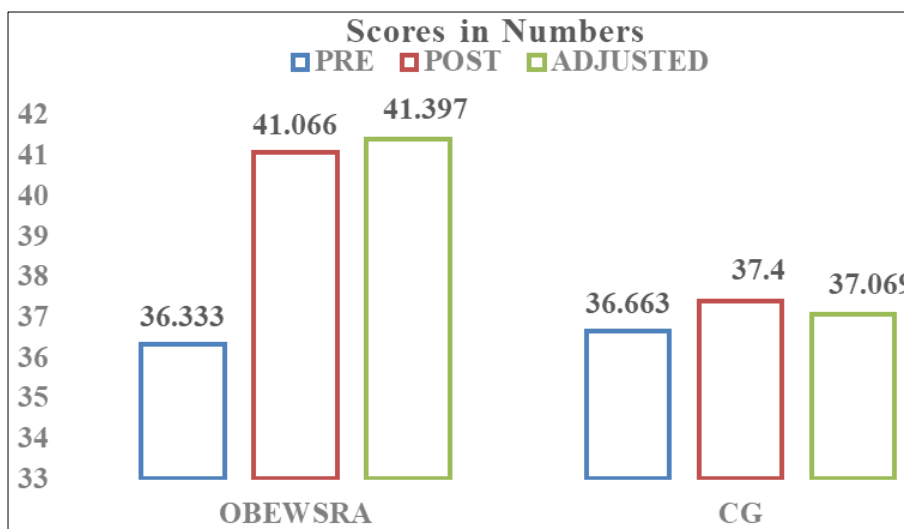


Fig 2: Test differences on strength endurance

Conversation on findings

Engaging in own body exercises, complemented by specific recreational activities, can significantly contribute to the improvement of explosive power and strength endurance for volleyball players. Bodyweight exercises like plyometrics, squat jumps, and burpees enhance explosive power by targeting fast-twitch muscle fibers, crucial for quick and powerful movements on the volleyball court. These exercises mimic the explosive actions involved in jumping, spiking, and blocking, translating directly to improved

performance. Additionally, recreational activities such as beach volleyball provide a fun and dynamic environment for players to apply and refine their explosive power in a real-game scenario.

Furthermore, bodyweight exercises like planks, lunges, and bodyweight squats contribute to building strength endurance. These exercises engage multiple muscle groups and help players develop the stamina required for sustained performance during long rallies and extended matches. Incorporating these own body exercises into a training

routine establishes a foundation for enduring the physical demands of volleyball. Recreational activities like cycling or hiking can further enhance strength endurance by providing an enjoyable way to engage in cardiovascular exercise, promoting overall stamina.

The combination of own body exercises and specific recreational activities creates a well-rounded training approach. For instance, activities such as playing Spikeball or participating in beach volleyball not only offer a break from traditional training but also foster a competitive and enjoyable environment that encourages players to push their limits, promoting improvements in explosive power and strength endurance. The adaptability and accessibility of own body exercises make them practical for on-the-go training, while recreational activities add an element of excitement and social interaction to the overall fitness regimen. Ultimately, this integrated approach not only enhances physical attributes but also contributes to the overall well-being and longevity of volleyball players in their pursuit of improved performance on the court.

The present study proved that a statistically significant result ($p < 0.05$) in the value of the explosive strength (ES) and strength endurance (SE) among volleyball players was due to the training using the own body exercise with specific recreational activities. YudikPrasetyo and Ahmad Nasrulloh (2017) ^[4] found that the weight training significantly improved the strengths of the leg muscle, back muscle, right grip and leg grip. Kumar & Sha, (2018) ^[2] found that due to twelve weeks of resistance and aerobic training produced notable development on hand grip strength (HGS). Patel Amit & Joshi Makarand (2017) ^[3] indicates that due to resistance training vital capacity has been improved significantly. Hiremath, Gnanaraj, & Muthuraj (2020) ^[1] found that concurrent resistance and endurance training significantly increased the forced vital capacity. Parasuraman & Mahadevan (2018) ^[15] found that core strength, and muscular endurance significantly improved due to 6 week of kettlebell training. Parasuraman (2020) ^[16] revealed that volleyball players performance improved due to circuit training using Kettlebell.

Conclusion

According to the results of the study, it has been observed that own body exercise with specific recreational activities significantly increased explosive strength and strength endurance among volleyball players. At the same time own body exercise with specific recreational activities can be applied to different sports, age, and gender. It is also suggested that the same research can be performed with physiological and motor fitness components also.

Reference

1. Hiremath G, Gnanaraj J, Muthuraj K. Efficacy of concurrent resistance and endurance training and detraining impact on forced vital capacity of hockey players. *J Inf. Comput. Sci.* 2020;10(5):383-390.
2. Kumar A, Sha S. Combined and isolated effects of aerobic and resistance training packages on hand grip strength of college-level kabaddi players. *Res Gate.* 2018:300-302.
3. Patel A, Joshi M. The effect of resistance training and circuit training on vital capacity among college male basketball players. *Int. Res. J Sports Glimpses.* 2017;3(20):1-3.
4. Prasetyo P, Nasrulloh N. Weight training with pyramid systems to increase the leg and back muscular strength, grip strength, pull, and push strength. *Man India.* 2017;97(24):193-201.
5. Stanforth D, Brumitt J, Ratames N, Atkins R, Keteyian S. Training toy bells, ropes, and balls-oh my. *ACSMs Health Fit J.* 2015;19:5-11.
6. Varalakshmy V. Collision of ballistic and plyometric training on selected explosive power and vital capacity of college men volleyball players. *High Technol. Lett.* 2020;26(6):593-601.
7. Bompa TO, Carrera MC. Peak conditioning for volleyball. In: *Handbook of Sports Medicine and Science, Volleyball*, 2003, 29.
8. Chow JY, Shuttleworth R, Davids K, Araújo D. Ecological dynamics and transfer from practice to performance in sport. In: *Skill Acquisition in Sport.* 2019:330-344.
9. Santos B JH. Impact of HIIT and Plyometrics on the Immune System and COVID-19. *Natl Dance Soc. J.* 2021, 6(1).
10. Bonder IJ, Shim AL. In-Season training model for national association of intercollegiate athletics female basketball players using "Micro-dosed" programming. *Strength Cond J.* 2023;45(4):395-410.
11. Mack DE, Wilson PM, Oster KG, Kowalski KC, Crocker PR, Sylvester BD. Well-being in volleyball players: Examining the contributions of independent and balanced psychological need satisfaction. *Psychol Sport Exerc.* 2011;12(5):533-539.
12. Aquino K, Wise A, Velayutham S, Parry KD, Neal S. The right to the city: Outdoor informal sport and urban belonging in multicultural spaces. *Ann Leisure Res.* 2022;25(4):472-490.
13. Landry BW, Driscoll SW. Physical activity in children and adolescents. *PM&R.* 2012;4(11):826-832.
14. Arthur-Banning SG, ed. *Youth sports in America: The most important issues in youth sports today.* Bloomsbury Publishing USA; c2018.
15. Parasuraman T, Mahadevan V. Effect of 6-week kettlebell training on core strength and muscular endurance in volleyball players. *Int. J Physiol. Nutr. Physical Education.* 2018;5(1):24-26.
16. Parasuraman T. Effect of circuit training with Kettlebell on performance-related variables among volleyball players. *Int. J Physiol. Nutr. Phys. Educ.* 2020;5(1):24-26.