



International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685
E-ISSN: 2394-1693
Impact Factor (ISRA): 5.38
IJPESH 2022; 9(1): 428-432
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www.kheljournal.com
Received: 16-11-2021
Accepted: 22-12-2021

Immaculate Steffy
Research Scholar, YMCA,
Chennai, Tamil Nadu, India

Dr. Glory Darling Margret
Assistant Professor, YMCA,
Chennai, Tamil Nadu, India

Impact of various small-sided games with and without ball practices on skill performance variables of women soccer players

Immaculate Steffy and Dr. Glory Darling Margret

Abstract

This study was designed to investigate the Impact of various small-sided games with and without ball practices on skill performance variables of women soccer players. To achieve the purpose of this study 90 inter-collegiate women players were randomly selected from Immaculate FC, GSS College for women, and SSS College for women, Chennai. The subjects were randomly assigned into three equal groups (n=30). Group- I underwent various small-sided games with ball practices (SSGWB), Group – II underwent various small-sided games without ball practices (SSGWOB) group-III acted as the control group (CG). The training was given to the experimental groups for 5 days per week (Monday, Tuesday, Wednesday, Friday, and Saturday) for 12 weeks. The control group was not given any sort of training except their routine work. The skill performance variables were passing and kicking (Sir Bobby Charlton Soccer Test). The data collected from the subjects were statistically analyzed with an 'F' ratio to find out significant improvement if any at a 0.05 level of confidence. The result of Passing and Kicking improved significantly due to the Impact of various small-sided games with and without ball practices, on women soccer players. Limitations of diet, climate, lifestyle status, and previous training. The result of the present study coincides with the findings of the investigation done by different experts in the field of sports sciences. Various small-sided games, with and without ball practices significantly improved the skill performance variables of women soccer players.

Keywords: Small-sided games, passing, and kicking

Introduction

Football is a complex sporting activity, placing high skills combined with optimal physical abilities, such as acceleration, deceleration, jumping, changing direction, or doing some specific to general activities in a single and multiple altitudes that are often performed at high maximum intensity (Theos & Linardakis, 2018) "Resistance and endurance enable improvement in technique through the physiological development of the heart and lungs." Qualities like jumping and speed were considered innate: "Strength depends on the physique, and accuracy is perhaps a quality that can be perfected." (Baquet, 1957). Small-sided games in soccer are performed with fewer players competing on a smaller-sized field. These games involve the players more because fewer players are sharing one ball. All ages can play "Small-Sided Games", but it has a definite developmental impact on professional soccer players. With this training method, players will be able to make decisions in passing quickly and with the right accuracy when playing in real games.

Hypothesis

The hypothesis argued in this paper is that women soccer players can significantly improve physiological variables by the impact of various small-sided games, with and without ball practices training programs over a consecutive 12week period. Therefore, the objective of this study was to investigate the impact of various small-sided games with and without ball practices on skill performance variables produced during 12 weeks of training among 90 women soccer players.

Corresponding Author:
Immaculate Steffy
Research Scholar, YMCA,
Chennai, Tamil Nadu, India

Methods

To address the hypothesis presented, herein, I selected, 90 women soccer players from Immaculate FC, GSS Jain College for women, SSS Jain College for Women. The subjects were randomly assigned into two equal groups, namely, Group-I (n=30) Various small-sided games with ball practices (SSGWB), and Group-II (n=30) Various small-sided games without ball practices (SSGWOB), Group-III (n=30) as the control group (CG). The respective training was given to the experimental group, 5 days per week (excluding Thursday and Sunday) for the training period of twelve weeks. The control group was not given any sort of training except their routine.

Design

The evaluated skill performance variables were, Passing and

kicking were assessed by Sir Bobby Charlton's test for soccer and the unit of measurement was in points. The variables were measured at baseline and after twelve weeks of various small-sided games, with and without ball practices were examined.

Training programme

The training program lasted for 120 minutes for the session, 5 days a week (Monday, Tuesday, Wednesday, Friday, and Saturday) for a 12 weeks duration. These 120 minutes included 15 minutes' warm-up, small-sided games, with and without ball practices training for 90 minutes and 15 minutes warm down. For every three weeks of training, the number of players was reduced and the area of the pitch increased to raise the intensity of the training.

Table I: Training schedule for experimental group-I

weeks	Drills	Sets	Rep	Rest	Bet' Set	Rest Bet' Reps	No. of players & Pitch size
1 to 4	Pass through gates.	3	3	1 min	30sec	8 vs 8 (70 x 50 m)	
	Cone Drill.	3	3	1 min	30sec	7 vs 7 (70 x 40 m)	
	Pass and shoot.	3	3	1 min	30sec	6 vs 6 (50 x 40 m)	
	1 vs 1 controlled shooting.	3	10	1 min	30sec		
5 to 8	Suicide dribbling.	3	4	1 min	30sec	6 vs 6 (50 x 40 m)	
	Turn and shoot	3	4	1 min	30sec	5 vs 5 (40 x 50 m)	
	Keep it in cones.	3	4	1 min	30sec	4 vs 4 (40 x 16.5 m)	
	Goalkeeper Lob	3	4	1 min	30sec		
9 to 12	Confined tag	3	4	30sec	30sec	4 vs 4 (40 x 16.5 m)	
	Dribble & run with the ball	3	4	30sec	30sec	3 vs 3 (30 x 20 m)	
	Agility shooting.	3	4	30sec	30sec	2 vs 2 (25 x 16.5 m)	
	Guard the castle.	3	4	30sec	30sec		

Table II: Training schedule for experimental group-II

weeks	Drills	Sets	Rep	Rest	Bet' Set	Rest Bet' Reps	No. of players & Pitch size
1 to 4	Exchanging the markers	3	3	1 min	30sec	8 vs 8 (70 x 50 m)	
	Run through the gates	3	3	1 min	30sec	7 vs 7 (70 x 40 m)	
	Sprint and Fake.	3	3	1 min	30sec	6 vs 6 (50 x 40 m)	
	Work-out on the ladder	3	10	1 min	30sec		
5 to 8	Inverted markers.	3	4	1 min	30sec	6 vs 6 (50 x 40 m)	
	work-out on the hurdle.	3	4	1 min	30sec	5 vs 5 (40 x 50 m)	
	Super shuffle.	3	4	1 min	30sec	4 vs 4 (40 x 16.5 m)	
	Catch your man	3	4	1 min	30sec		
9 to 12	Guard the castle	3	4	30sec	30sec	4 vs 4 (40 x 16.5 m)	
	Confined Tag	3	4	30sec	30sec	3 vs 3 (30 x 20 m)	
	Strengthening work-out	3	4	30sec	30sec	2 vs 2 (25 x 16.5 m)	
	20-yard dash work-out	3	4	30sec	30sec		

Statistical analysis

The collected data on the above said variables due to the impact of various small-sided games, with ball practices was statistically analyzed with the 'F' test to find out the

significant improvement between pre and post-test. In all cases, the criterion for statistical significance was set at a 0.05 level of confidence. ($P < 0.05$)

Table III: (Scores-In Points) Computation of analysis of covariance of pre-test, post-test, and adjusted post-test on passing of experimental groups and control group

Mean	SSGWB	SSGWOB	CG	Source of variance	Source of squares	Mean square	F-ratio
Pre-Test mean	3.0667	3.0667	3.0000	B	.089	.044	0.009
				W	441.733	5.077	
Post-Test mean	3.8667	4.2667	2.8667	B	31.200	15.600	3.825
				W	354.800	4.078	
Adjusted post-test mean	3.849	4.249	2.901	B	28.745	14.372	14.679

Table III shows the results of the 'F' ratio for Pre-test scores, post-test, and adjusted post-test scores of SSGWB, SSGWOB, and CG.

The obtained 'F' ratio for the pre-test was .014. It was found to be lesser than the required table value of 3.10 for the degrees of freedom 2 and 87. Hence, it was inferred that the mean difference among the three groups at pre-test on passing was statistically insignificant at a 0.05 level of confidence.

In the post-test data analysis, the 'F' ratio was applied to test the significance of mean differences among the SSGWB, SSGWOB, and CG on Passing. The obtained 'F' ratio for the post-test was 3.10. The 'F' ratio needed for the significant differences on the mean, for degrees of freedom 2 and 87 was 3.825 at 0.05 level of confidence. Since the observed 'F' ratio on this variable was higher than the table value needed for significance, it was inferred that the mean differences among

three groups at post-test of passing were statistically significant.

In the adjusted post-test data analysis, the 'F' ratio was applied to test the significance of mean differences among the SSGWB, SSGWOB, and CG on passing. The obtained 'F'

ratio was 14.679. Since the observed 'F' ratio was greater than the required table value of 3.10 for degrees of freedom 2 and 86 at 0.05 level of confidence, it was concluded that the performance of Passing was significantly influenced by the treatments used in this study.

Table IV: Scheffe's post hoc test for experimental and control group on passing of women soccer players (Scores-Beats/minutes)

SSGWB	SSGWOB	CG	Mean Difference	Confidential Interval
3.849	4.249	-	0.45	0.08
3.849	-	2.901	0.94	
-	4.249	2.901	1.34	

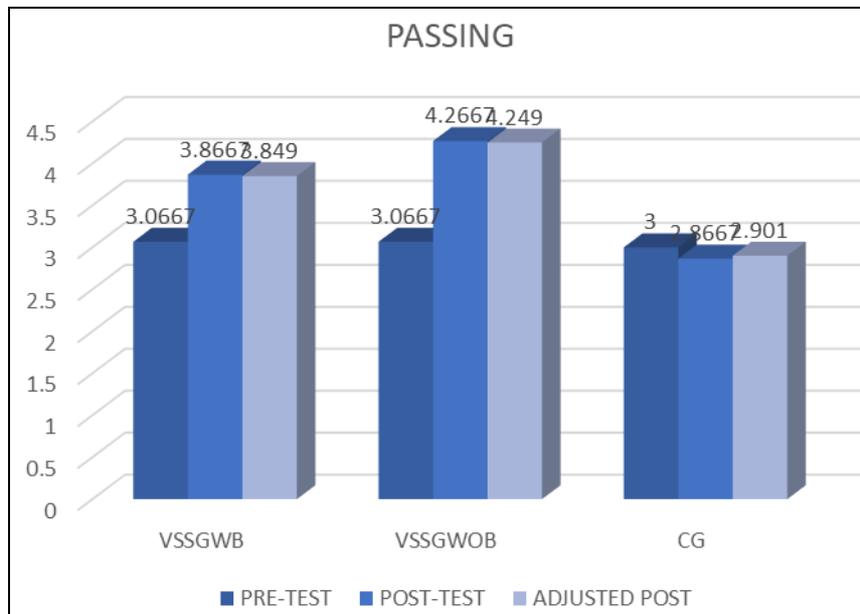


Fig I: Bar diagram shows pre-test post-test and adjusted post-test means of SSGWB, SSGWOB, and control group on passing

Table V: Analysis of covariance for experimental and control group on kicking of women soccer players (Scores in Beats/ Minute)

Mean	SSGWB	SSGWOB	CG	Source of variance	Source of squares	Mean square	F-ratio
Pre-Test mean	16.2000	16.1333	16.1667	B	.067	.033	.014
				W	206.433	2.373	
Post-Test mean	18.3000	19.0333	16.0667	B	143.267	71.633	30.985
				W	201.133	2.312	
Adjusted post-test mean	18.269	19.064	16.067	B	144.683	72.342	269.870

Table-XXVI shows the results of the 'F' ratio for Pre-test scores, post-test, and adjusted post-test scores of SSGWB, SSGWOB, and CG.

The obtained 'F' ratio for the pre-test was .014. It was found to be lesser than the required table value of 3.10 for the degrees of freedom 2 and 87. Hence, it was inferred that the mean difference among the three groups at pre-test on kicking was statistically insignificant at a 0.05 level of confidence.

In the post-test data analysis, the 'F' ratio was applied to test the significance of mean differences among the SSGWB, SSGWOB, and CG on kicking. The obtained 'F' ratio for the post-test was 3.10. The 'F' ratio needed for the significant differences on the mean, for degrees of freedom 2 and 87 was

30.985 at 0.05 level of confidence. Since the observed 'F' ratio on this variable was higher than the table value needed for significance, it was inferred that the mean differences among three groups at post-test of kicking were statistically significant.

In the adjusted post-test data analysis, the 'F' ratio was applied to test the significance of mean differences among the SSGWB, SSGWOB, and CG on kicking. The obtained 'F' ratio was 269.870. Since the observed 'F' ratio was greater than the required table value of 3.10 for degrees of freedom 2 and 86 at 0.05 level of confidence, it was concluded that the performance of kicking was significantly influenced by the treatments used in this study.

Table VI: Scheffe's post hoc test for experimental and control group on kicking of women players (Scores in Beats/minute)

SSGWB	SSG	CG	Mean Difference	Confidential Interval
18.269	19.064	-	0.8	0.04
18.269	-	16.067	1.66	
-	19.064	16.067	3.0	

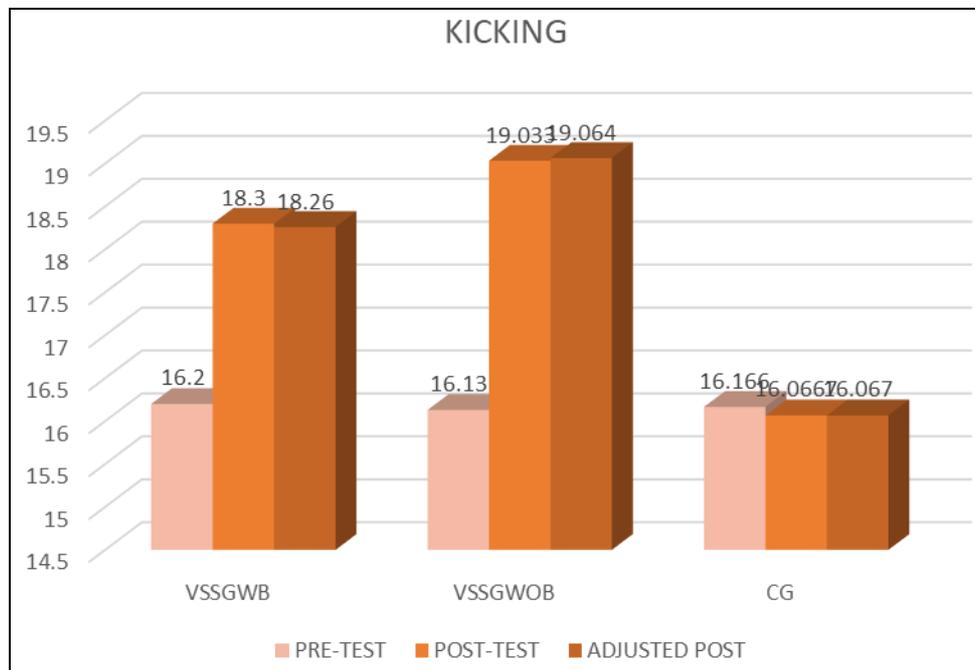


Fig II: Bar diagram shows pre-test post-test and adjusted post-test means of SSGWB, SSGWOB, and control group on kicking

Discussion and findings

The present study experimented with the impact of various small-sided games, with and without ball practices on skill performance variables of women soccer players. The results of this study indicated that various small-sided games, with and without ball practices are more efficient to bring out desirable changes over the passing and kicking of women soccer players.

The finding of the present study had similarities with the findings of the investigators referred to in this study.

- Miller and Karen (2012) analyzed the effects, if any, on soccer dribbling skills in children, ages, 8-10, after practicing with different-sized soccer balls during the season. The Kansas Youth Soccer Association (KYSA, 2008) and the United States Soccer Association (US Soccer, 2011) recommended that children use smaller-sized soccer balls than regulation adult-sized soccer balls.
- Markus J Klusemann *et al.*, (2012) examined the differences in physiological, physical, and technical demands of small-sided basketball games related to the number of players, court size, and work-to-rest ratios are not well characterized.
- Ermanno *et al.*, (2007) evaluated the effects of exercise type, field dimensions, and coach encouragement on the intensity and reproducibility of small-sided games. Aerobic interval training was performed during three-, four-, five- and six-a-side games on three differently sized pitches, with and without coach encouragement. Heart rate, rating of perceived exertion (RPE) on the CR10-scale, and blood lactate concentration were measured.
- Ricardo Duarte *et al.*, (2009) measured the physiological and technical effects of both duration and variations in the numbers of players in futsal-specific drills. Heart rates and technical skills of 8 semi-professional futsal players were recorded during four specific drills.
- Tim J Gabette *et al.*, (2012) analyzed the influence of wrestling on the physiological and skill demands of small-sided games. This study investigated the influence of wrestling on the physiological and skill demands of small-sided games.
- Jamel Halouani *et al.*, (2014) submitted a study on Small-

sided games (SSGs) incorporating skills, sport-specific movements, at intensities sufficient to promote aerobic adaptations, which are being increasingly implemented in professional team sport environments.

- Delextrat *et al.*, (2013) compared the effects of 2 training interventions based on small-sided games (SGG) and high-intensity interval training (HIT) on the physical and technical performance of male junior basketball players.
- Lukasz Radziminski *et al.*, (2013) made a comparison of the Physiological and Technical Effects of High-Intensity Running and Small-Sided Games in Young Soccer Players.

Conclusion

It was concluded that 12 weeks of various small-sided games, with and without ball practices significantly improved the Physiological Variables of women soccer players. From the findings, it is postulated that the various small-sided games, with and without ball practices are suitable modes to bring out desirable changes in the passing and kicking abilities of women soccer players.

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