



REVIEW OF RESEARCH

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EFFECT OF PYRAMID SPRINT AND SAND SURFACE PLYOMETRIC EXERCISES IN COMBINATION WITH DRILL PRACTICES ON BASKETBALL GAME PERFORMANCE AMONG WOMEN BASKETBALL PLAYERS

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ABSTRACT

The study was to examine the effect of pyramid sprint and sand surface plyometric exercises in combination with drill practices on basketball game performance among women basketball players. Total recruited randomly N=80 (eighty) women basketball players their age period ranged from 18 years to 25 years as per subject's secondary board of education certificate and, who at least participated inter collegiate level basketball tournament. The chosen women basketball players was randomly recruited into four groups each group n=20 women basketball players i.e. empirical groups I women basketball players underwent: pyramid sprint in combination with drill practices (PSDB), empirical group II women basketball players underwent: sand surface plyometric exercises in combination with drill practices group (SPDB), empirical group III underwent: combined pyramid sprint and sand surface plyometric exercises in combination with drill practices group (PPDB), and control group basketball players (NTBP). NTBP was practiced only their respective specialization game. The training period was fixed for 12- week's duration and three sessions in a week. The measurement of basketball game performance scores was collected through three coaches' judgment rating scale (1 to 10 points) before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 levels. The study found that pyramid sprint and sand surface plyometric exercises in combination with drill practices had positive significant impact to improve the basketball game performance of women basketball players of three empirical group's players comparative to control group.



KEYWORDS: pyramid, sprint, plyometric, basketball.

INTRODUCTION

Statement of the Research Problem:

To analyze the "Effect of pyramid sprint and sand surface plyometric exercises in combination with drill practices on basketball game performance among women basketball players".

Research Hypothesis:

- There will be a significant increase in score of basketball game performance of empirical group's women basketball players after the twelve weeks impact of isolated and combined effect of pyramid

sprint and sand surface plyometric exercises in combination with drill practices when compared with control group women basketball players.

- The combined effect of pyramid sprint and sand surface plyometric exercises in combination with drill practices will be more effective than the isolated training program.

METHODOLOGY:

The study was to measure the isolated, combined effect of pyramid sprint and sand surface plyometric exercises in combination with drill practices on basketball game performance among women basketball players. Total recruited randomly N=80 (eighty) women basketball players their age period ranged from 18 years to 25 years as per subject's secondary board of education certificate and, who at least participated inter collegiate level basketball tournament. The chosen women basketball players was randomly recruited into four groups each group n=20 women basketball players i.e. empirical groups I women basketball players underwent: pyramid sprint in combination with drill practices (PSDB), empirical group II women basketball players underwent: sand surface plyometric exercises in combination with drill practices group (SPDB), empirical group III underwent: combined pyramid sprint and sand surface plyometric exercises in combination with drill practices group (PPDB), and control group basketball players (NTBP). NTBP was practiced only their respective specialization game. The training period was fixed for 12- week's duration and three sessions in a week. The measurement of basketball game performance scores was collected through three coaches' judgment rating scale (1 to 10 points) before and after the completion of specific training. The collected score's were analyzed through ANCOVA and level of significant was restricted at 0.05 levels.

Table - I

Analysis of Covariance for Basketball Game Performance - Coaches' Judgment Rating Scale (1 To 10 Points) of the PSDB, SPDB, PPDB and NTBP groups for women basketball players

Groups	PSDB	SPDB	PPDB	NTBP	SOV	Sum of squares	df	Mean Square	F' Ratio
Pre test mean	5.475	5.200	5.075	5.325	B	1.759	3	0586	0.556 ^{NS}
SD	1.271	0.992	0.935	0.862	W	80.213	76	1.055	
Post test mean	6.550	6.300	6.900	5.175	B	33.384	3	11.128	17.406*
SD	0.809	0.849	0.575	0.921	W	48.588	76	0.639	
Adjusted mean	6.437	6.338	7.006	5.144	B	36.578	3	12.193	37.546*
					W	24.356	75	0.325	
Mean difference	+1.075	+1.100	+1.825	-0.150	-	-	-	-	-

Note : Table F-ratio book value at 0.05 level of confidence for 3 and 76 (df) =2.68, 3 and 75 (df) =2.68

*Significant

The above table-I shows that there is a significant difference on basketball game performance among the four groups such as PSDB: Isolated pyramid sprint in combination with basketball drill practice group, SPDB: Isolated sand surface plyometric exercises in combination with basketball drill practice group, PPDB: Combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practice and NTBP: Non training group women basketball players. Since the 'F' value required being significant at 0.05 level for 3, 76 d/f and 3, 75 are 2.68, but the computation values of basketball game performance post and adjusted posttest 'F' values are 17.06 and 37.546 respectively. Which are greater than the tabulated value, it shows that training is effective for positive changes in basketball game performance. Since the obtained 'F' ratio is found significant.

TABLE: 2
THE SPOT BASKETBALL GAME PERFORMANCE RESULTS OF SCHEFFE'S METHOD TEST MEAN DIFFERENCES BETWEEN PSDB, SPDB, PPDB and NTBP GROUPS FOR WOMEN BASKETBALL PLAYERS

PSDB	SPDB	PPDB	NTBP	MD	CI
6.437	6.338	-	-	0.099 ^{NS}	0.510
6.437	-	7.006	-	0.569*	
6.437	-	-	5.144	1.293*	
-	6.338	7.006	-	0.668*	
-	6.338	-	5.144	1.194*	
-	-	7.006	5.144	1.862*	

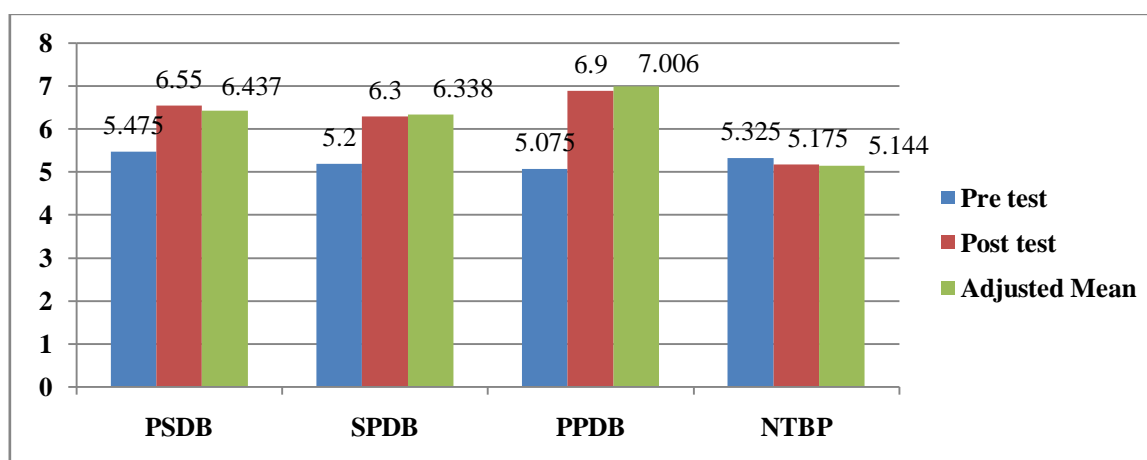
Note: * Significant & NS: No significant

In above table 2 presented the adjusted final mean variations between the isolated pyramid sprint in combination with basketball drill practices [PSDB] and combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practices [PPDB], isolated pyramid sprint in combination with basketball drill practices [PSDB] and non training group women basketball players [NTBP] , isolated sand surface plyometric exercises in combination with basketball drill practices [SPDB] and combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practices [PPDB], isolated sand surface plyometric exercises in combination with basketball drill practices [SPDB] and non training group women basketball players [NTBP] and combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practices [PPDB] and non training group women basketball players [NTBP] are 0.569, 1.293, 0.668, 1.194 and 1.862. These computation adjusted final mean variations values are larger than calculated formula CI value 0.510. Hence investigator recorded significant variations resulted between training groups and control groups women basketball players after completion of empirical period time on basketball game performance - three coaches' judgment rated scale test (rating scale 1 to 10 point) performance.

The adjusted final mean variations between the isolated pyramid sprint in combination with basketball drill practices [PSDB] and isolated sand surface plyometric exercises in combination with basketball drill practices [SPDB], is 0.099. These computation adjusted final mean differences values are lower than calculated formula CI value 0.510. Hence investigator noted insignificant differences resulted between isolated and combined training groups' women basketball players after twelve weeks completion of empirical period basketball game performance - three coaches judgment rated scale test (rating scale 1 to 10 point).

The prior, final and adjusted post results mean of the PSDB, SPDB, PPDB and NTBP women basketball players groups for basketball game performance - three coaches judgment rated scale test (rating scale 1 to 10 point) performance clearly represented in bar diagram figure: 1.

Figure : 1 Graphical representation of changes in mean difference of the PSDB, SPDB, PPDB and NTBP groups for basketball game performance - three coaches Judgment rated scale test (rating scale 1 to 10 point) on women basketball players



DISCUSSION ON HYPOTHESIS:

- The first hypotheses stated that there will be significant increase in score of basketball game performance of empirical group's women basketball players after the twelve weeks impact of isolated and combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practice when compared with control group women basketball players. The statistical analysis proved that isolated, combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practice program significantly increased the basketball game performance. Hence research first hypothesis accepted.
- The second hypotheses stated that combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practice will be more effective than the isolated training program. The statistical analysis proved combined training is superior to isolated training method. Hence research second hypotheses accepted.

DISCUSSION AND FINDINGS:

The implementation of 12-weeks progressive pyramid sprint and sand surface plyometric exercises in combination with basketball drill practice are effective for improving spot shooting - Khelo India talent identification test (Numbers) performance of women basketball players' comparative to control group women basketball players. The various sports training effect on spot shooting abilities are Ahmed et al., (2023) research shown in the shooting test results that basketball players refine their shooting skills accuracy to score more baskets. Suntharalingam (2023) incorporation of medicine ball workouts that align with specific skill work resulted positive impact for enhancing speed spot shooting performance among basketball players. Atul (2022) study discovered that circuit training result a positive significant effect on the basketball skills performance such as field goal and accuracy level of Kurukshetra University female basketball players. Thanuraj (2022) research indicated that medicine ball training in conjunction with regular exercise produced significant increase in basketball skills performance in adult male basketball players. Prem (2014) study demonstrated that the basketball specific foot work training protocol for twelve weeks is more effective in increasing the shooting ability-speed spot shooting test of male basketball players.

CONCLUSIONS:

Analyzer, divulged that the 12-weeks treatments of isolated and combined isolated and combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill

practices program out come with positively uplift the spot shooting - Khelo India talent identification test (Numbers). Accordingly, combined pyramid sprint and sand surface plyometric exercises in combination with basketball drill practices program outcome is more than isolated training group women basketball players for upgrade the spot shooting performance of women basketball players. As a result both isolated training pyramid sprint and sand surface plyometric exercises in combination with basketball drill practices program outcome produce identical effect for refine spot shooting performance of women basketball players.

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