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PHYSICAL EDUCATION

EFFECT OF PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG DIFFERENT AGE GROUP OF VOLLEYBALL PLAYERS

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Abstract

The objective of the study is to investigate the effect of plyometric training on different age group boys on Volleyball skills in relation to selected physical fitness variables of Flexibility. To achieve the purpose of the present study 60 Volleyball players are selected (20 school boys in the age group of 14-16 years, 20 Pre university college boys in the age group of 17 to 19 years and 20 First Grade College boys in the age group of 20 to 22 years) as subjects from Karnataka at random. The selected variable is Flexibility. The collected data on criterion measures are treated by Sit and Reach Apparatus, Score Sheet, Sliding Marker and Measuring Scale for Flexibility. The collected data are statistically analyzed by t ratio one ways analysis of variance test is applied and the level of significance for the study is 0.05 level. For significant differences the Scheffe's post-hoc test is applied. The results reveal that there is a significant difference in the Flexibility of Volleyball players. There exists significant difference in the interaction effect in Flexibility level among different age groups of volleyball players.

Keywords: School boys, Pre university college boys, First Grade College boys, Volleyball players and Flexibility.

INTRODUCTION

Plyometrics, otherwise called "jump training" or "plyos", need aid activities in which muscles push greatest power in the short intervals of time in the expanding force (speed-strength). This preparation keeps tabs looking on the taking move for that a muscle development should withdrawa clinching alongside, in a fast alternate "explosive" manner. Plyometrics need aid principally utilized by athletes, particularly by the marti artists, sprinters and secondary jumpers, to move forward, which is more utilized within those wellness field in a significant lesseps degree. Plyometrics incorporate hazardous capable preparation activities that are prepared with an initiative of the fast reaction. And also versatile properties of the real muscles in the particular figure. It might have been at first introduced eventually by Tom's Perusing Soviet Olympians in 1970s. Sports utilizing plyometrics are Basketball, Tennis, Badminton, Squash and Volleyball and in addition the different codes from claiming Football.

The haul "plyometrics" might have been coined eventually by Tom's perusing Fred Shrivel and then by the soviet Competitors. Fred Shrivel felt this might have been a great way in their achievement. He started to coordinate Soviet (Russian) mentor Michael Yessis with Push plyometrics. Since, its presentation in the right on time was 1980s, two types of plyometrics ware advanced. According to the Russian researcher, Yuri Verkhoshansky, it may have been characterized similarly as the stun strategy. For this, the competitor drops down starting with tallness and a background "shock" upon arriving. So this may achieve each athlete with a constrained unpredictable withdrawal which promptly switched with a concentric withdrawal so that the competitor can bounce upward. The arriving and takeoff will execute in a great brief time and in the range of 0, 1–0, and 2 seconds. The stun strategy becomes the majority for compelling the strategy utilized by players which enhances their speed, quickness and energy then improves the solid quality build.

REVIEWS RELATED LITRATURE

Diallo, et al., (2000) concentrated on the school population. The stretch-shortening cycle practice (plyometric exercise) when regularly practised will enhance leg muscle control and also the verthandi bounce execution. Martel, et al., (2005) examined about oceanic plyometric preparing builds and verthandi bounce on female volleyball players and various investigations need accounted for the land-based plyometrics camwood as it enhances bulky strength, joint stability, What's more verthandi bounce (VJ) done Competitors. Hertogh, et al., (2002) mulled over around hop assessment about world class volleyball players utilizing two methods: hop control equations and power stage. Adams, et al., (1992) compared the viability about three preparing programs- squat (S), plyometric (p) What's more squat-plyometric (SP) – clinched alongside

expanding hip and also thigh control preparation similarly as measured eventually by Tom's perusing verthandi bounce. Laura, et al., (2012) analyzed those kinematic examination about four plyometric push-up varieties and plyometric exploration in the upper limit will be limited, with those impacts from claiming open-chain plyometric activities being examined the vast majority.

OBJECTIVE OF THE STUDY

1. To make an overall analysis of Plyometric training with skill training on different age group boys on coach rated volleyball skills in relation to selected variable of Flexibility.
2. To study the Flexibility variable as predictors of performance of different age group boys on coach rated volleyball skills.
3. To know exactly at what age level the Plyometric training would have the influence on Volleyball skill performance.

HYPOTHISES

1. It was hypothesized that the Plyometric training would significantly improve the Flexibility of school boys in the age group of 14 to 16 years.
2. It was hypothesized that the Plyometric training would significantly improve the Flexibility of University College boys at the age group of 17 to 19 years.
3. It was hypothesized that the Plyometric training would significantly improve the Flexibility of first grade College boys at the age group of 20 to 22 years.

METHODS AND MATERIALS

The purpose of the study is to investigate the effect of plyometric training on different age group boys on coach rated volleyball skills in relation to selected physical fitness variables. To achieve the purpose of the present study 60 Volleyball players were selected (20 school boys in the age group of 12-14 years, 20 Pre university college boys in the age group of 17 to 19 years and 20 First Grade College boys in the age group of 20 to 22 years) as subjects from Karnataka state at random. The selected variable was Flexibility and the collected data on criterion measures were treated by Sit and reach apparatus, score sheet, sliding marker and measuring scale for Flexibility. The collected data were statistically analyzed by t ratio, one ways analysis of variance test was applied and the level of significance for the study was 0.05 level. The collected data were statistically analyzed by one way analysis of variance test was applied. The level of significance for the study used was 0.05 level. Wherever significant differences were found scheffe's post-hoc test was used.

ANALYSIS AND INTERPRETATIONS OF DATA

TABLE-1
THE TABULATION SHOWS THE MEAN VALUES BETWEEN PRE AND POST TEST OF PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 14 to 16 AGE YEARS GROUP OF VOLLEYBALL PLAYERS

Variables	Test	Mean	S.D	S.E.M	M.D	T-Ratio
Flexibility in Centimeters	Pre test	22.000	2.026	0.453	1.850	14.091*
	Post test	23.850	1.814	0.405		

0.05 level of significance (2.09 **)**

Table 1 displayed the results of 't' value of Flexibility (14.091).The obtained tabulated t value was 2.09 statistically significant difference at the 95 % confidential level, D.F. (1, 19). It was found that statistically significant at 0.05 level of confidence. It was observed that the mean gains and losses made from pre and post test showed significant improvement in Flexibility (1.0850p< 0.05), thus the formulated hypothesis No 1 is accepted.

TABLE- 2
THE TABULATION SHOWS THE MEAN VALUES BETWEEN PRE AND POST TEST OF PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 17 to 19 YEARS AGE GROUP OF VOLLEYBALL PLAYERS

Variables	Test	Mean	S.D	S.E.M	M.D	T-Ratio
Flexibility in Centimeters	Pre test	22.050	2.394	0.535	2.900	9.515
	Post test	24.950	2.28	0.511		

0.05 level of significance (2.09 **)**

Table 2 displayed the results of 't' value of Flexibility (9.515).The obtained tabulated t value was 2.09 statistically significant difference at the 95 % confidential level, D.F. (1, 19). It was found that statistically significant at 0.05 level of confidence. It was observed that the mean gains and losses made from pre and post test showed significant improvement in Flexibility (2.900p< 0.05), thus the formulated hypothesis No 2 is accepted.

TABLE-3
THE TABULATION SHOWS THE MEAN VALUES BETWEEN PRE AND POST TEST OF PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 20 to 22 YEARS AGE GROUP OF VOLLEYBALL PLAYERS

Variables	Test	Mean	S.D	S.E.M	M.D	T-Ratio
Flexibility in Centimeters	Pre test	22.150	2.455	0.549	4.900	18.805*
	Post test	27.050	2.305	0.515		

0.05 level of significance (2.09 **)**

Table 3 displayed the results of 't' value of Flexibility (18.805).The obtained tabulated t value was 2.09 statistically significant difference at the 95 % confidential level, D.F. (1, 19). It was found that statistically significant at 0.05 level of confidence. It was observed that the mean gains and losses made from pre and post test were showed significant improvement in Flexibility (4.900p< 0.05), thus the formulated hypothesis No 3 is accepted.

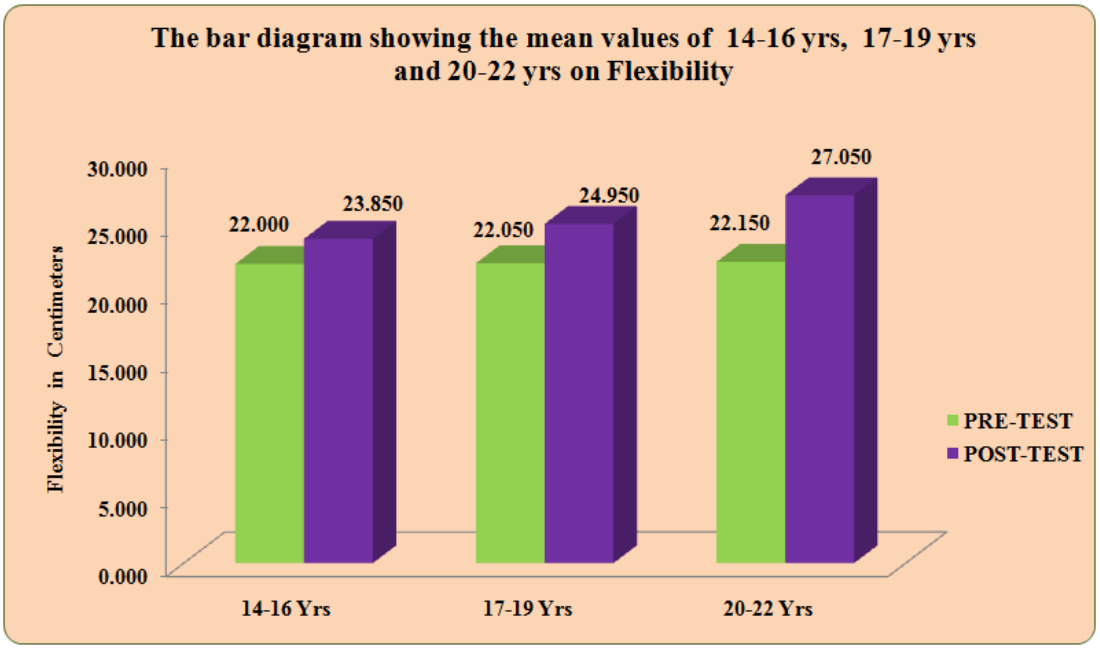

Figure.1

TABLE-4
ANALYSIS OF VARIANCE ON PRE TEST MEAN VALUES AMONG PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 14-16 Yrs, 17-19 Yrs and 20-22 Yrs AGE GROUP OF VOLLEYBALL PLAYERS

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Flexibility in Centimeters	Between	0.233	2	0.117	0.022	0.978
	Within	301.500	57	5.289		

0.05 level of significance (3.16**)**

Table 4 viewed that the obtained 'F' value for the 14-16 Yrs, 17-19 Yrs and 20-22 Yrs age group of volleyball players on Flexibility (0.022). The obtained tabulated f value 3.16 showed statistically significant differences at the 95 % confidential level and the degrees of freedom (2, 57). It was found that the value was statistically insignificant. So the treatment was successful.

TABLE- 5
ANALYSIS OF VARIANCE ON POST TEST MEAN VALUES AMONG THE PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 14-16 Yrs, 17-19 Yrs and 20-22 Yrs AGE GROUP OF VOLLEYBALL PLAYERS

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Flexibility in Centimeters	Between	105.733	2	52.867	11.460	.000
	Within	262.950	57	4.613		

0.05 level of significance (3.16**)**

Table 5 viewed that the obtained 'F' value for the 14-16 Yrs, 17-19 Yrs and 20-22 Yrs age group of volleyball players on Flexibility (11.460). The obtained tabulated f value was 3.16 and it showed statistically significant differences at the 95 % confidential level and the degrees of freedom (2, 57). It was found that the value was statistically show insignificant. So the treatment was successful.

TABLE-6
ANALYSIS OF CO-VARIANCE ON PRE AND POST TEST MEAN VALUES AMONG THE PLYOMETRIC TRAINING WITH SKILL TRAINING ON THE DEVELOPMENT OF FLEXIBILITY AMONG 14-16 Yrs, 17-19 Yrs and 20-22 Yrs AGE GROUP OF VOLLEYBALL PLAYERS

Variables	Source of Variance	Sum of Squares	DF	Mean Square	F	Sig.
Flexibility in Centimeters	Between	97.632	2	48.816	46.892	.000
	Within	58.298	56	1.041		

0.05 level of significance (3.16**)**

Table 6 viewed that the obtained 'F' value for the 14-16 Yrs, 17-19 Yrs and 20-22 Yrs age group of volleyball players on Flexibility was (46.892). The obtained tabulated f value was 3.16 and it showed statistically significant differences at the 95 % confidential level and the degrees of freedom (2, 57). It was found that the value was statistically insignificant. So the treatment was successful.

TABLE-7
THE SCHEFFE'S POST HOC TEST FOR THE DIFFERENCES BETWEEN ADJUSTED POST TEST MEANS OF 14-16 Yrs, 17-19 Yrs AND 20-22 Yrs AGE GROUP ON FLEXIBILITY

14-16 Yrs	17-19 Yrs	20-22 Yrs	M.D Difference	Confidence Interval Value
23.905	24.964	---	1.059	0.91
23.905	---	26.981	3.076	0.91
---	24.964	26.981	2.017	0.91

* Significant at 0.05 level of confidence

Table 7 shows the adjusted post hoc test mean values of 14-16 Yrs group, 17-19 Yrs group and 20-22 Yrs group. The mean difference required for the confidential interval to be significant was 0.91. In Comparing the 14-16 Yrs group and 17-19 Yrs group, the mean differences between the two groups were 1.059. Hence 17-19 Yrs group showed better improvement on Flexibility. In comparing the 14-16 Yrs group and 20-22 Yrs group, the mean differences between the two groups were 3.076. Hence 20-22 Yrs group showed better improvement on Flexibility. In comparing 17-19 Yrs group and 20-22 Yrs group, the mean differences between the two groups were 2.017. Hence 20-22 Yrs group showed better improvement on Flexibility. Finally 20-22 Yrs group showed better than the 17-19 Yrs group and 14-16 Yrs group on Flexibility.

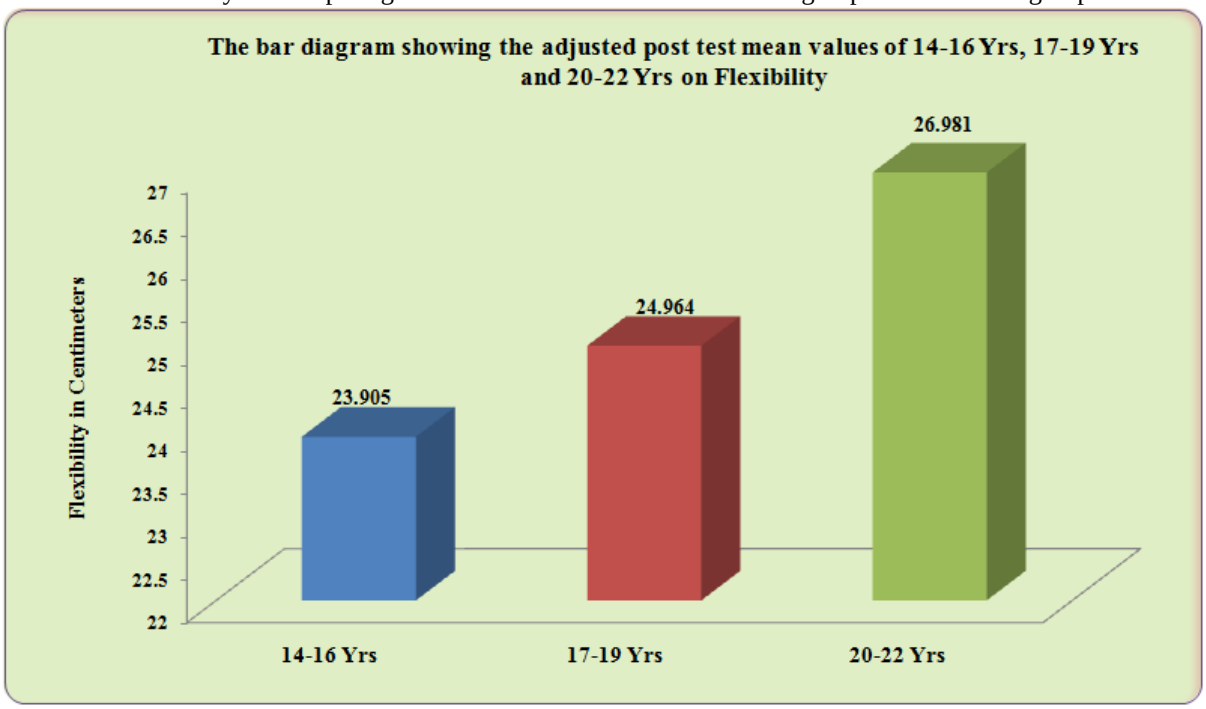

FIGURE.4

RESULTS AND DISCUSSION

This study confirms that improvement in selected plyometric training with skill training on the development of flexibility among 14-16 yrs, 17-19 yrs and 20-22 yrs different age groups of Volleyball players.

The Flexibility increased in the 14-16 yrs group from pre test (22.00 ± 2.026) to post test (23.85 ± 1.814); 17-19 yrs group from pre test (22.05 ± 2.394) to post test (24.95 ±2.28) and 20-22 yrs group from pre test (22.15 ± 2.455) to post test (27.05 ± 2.305). The Flexibility significantly showed improvement from pre test to post test in the three Treatment groups.

The present study demonstrated that an increase in Flexibility of 8.41% , 13.15% and 22.12% was estimated with Sit and Reach test for 14-16 yrs, 17-19 yrs and 20-22 yrs, different age groups of volleyball players respectively. 20-22 yrs Group significantly showed improvement in the Flexibility by 22.12% better than the 17-19 yrs group (13.15%) and 14-16 yrs group (8.41%.) The 17-19 yrs group improved the Flexibility by 13.15% better than the 14-16 yrs group.

RESULTS

1. The result of the study showed that plyometric training with skill training on the development of 14-16 yrs aged group showed significant improvement on Flexibility of school volleyball players.

2. The result of the study showed that plyometric training with skill training on the development of 17-19 yrs aged group showed significant improvement on Flexibility of Pre University boys volleyball players.
3. The result of the study showed that plyometric training with skill training on the development of 20-22 yrs aged group showed significant improvement on Flexibility of First Grade College boys volleyball players.
4. The result of the study showed that plyometric training with skill training on the development of 20-22 yrs aged group showed significantly better improvement than 17-19 yrs aged group and 14-16 yrs aged group on Flexibility of First Grade College boys' volleyball players.
5. The result of the study showed that plyometric training with skill training on the development of 17-19 yrs aged group showed significantly better improvement than 14-16 yrs aged group on Flexibility of First Grade College boys' volleyball players.

CONCLUSIONS

1. It was concluded that plyometric training with skill training on the development of 14-16 yrs aged group showed significant improvement on Flexibility of school volleyball players.
2. It was concluded that plyometric training with skill training on the development of 17-19 yrs aged group showed significant improvement on Flexibility of Pre University boys volleyball players.
3. It was concluded that plyometric training with skill training on the development of 20-22 yrs aged group showed significant improvement on Flexibility of First Grade College boys Volleyball players.
4. It was concluded that plyometric training with skill training on the development of 20-22 yrs aged group showed significantly better improvement than 17-19 yrs aged group and 14-16 yrs aged group on Flexibility of First Grade College boys Volleyball players.
5. It was concluded that plyometric training with skill training on the development of 17-19 yrs aged group showed significantly better improvement than 14-16 yrs aged group on Flexibility of First Grade College boys Volleyball players.

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