

Comparison between the Effect of Plyometrics and Functional Exercise on Basketball Skills

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Abstract

The data was collected through respondents in the form of different tests. Purposive sampling method was used, as the researcher selected Basketball Players with a specific purpose. 50 basketball players selected under plyometric exercise group and 50 basketball players selected under functional exercise group. Training was given to both groups separately. This study involves a cross sectional, comparative pre and post-test of experimental group. The Plyometric exercise and functional exercise programme were planned for 4 days a week 30 minutes in a day for 12 weeks including 10 minutes warm up period and 05 minutes cool down. **Johnson Basketball Test was used to measure basketball skill test.** The result computed also crosschecked by using following statistical variables. Mean standard deviation, T-test. The result of the study shows that **Plyometrics** exercise group were found better on Passing shooting and Dribbling abilities as compared than functional exercise group in basketball skill. Although Functional exercise group and Plyometrics exercise group enhanced passing, shooting and Dribbling abilities of basketball players.

KEYWORD;-Johnson Basketball Test, Plyometric exercise

Introduction

Each year the game of basketball is played more proficiently as indicated by improved shooting percentages..

The Components of shooting skill in basketball is due partly to the greater stress in training on shooting practice and the use of coaching aids which are designed to improve shooting ability. Some of these aids are a glove with a thick patch in the palm to develop better fingertip control of the ball while shooting and a smaller ring to fit inside a regulation basketball goal to encourage the player to shoot the ball with more arch.

Several research studies have determined whether shooting percentages are affected by practice shooting with backboards raised above official height, shooting with oversized balls, and shooting at baskets smaller than regulation size.

Plyometricss, also known as "jump training" or "plyos", are exercises in which muscles exert maximum force in short intervals of time, with the goal of increasing power (speed-strength). This training focuses on learning to move from a muscle extension to a contraction in a rapid or "explosive" manner, such as in specialized repeated jumping. Plyometricss are primarily used by athletes, especially martial artists, sprinters and high jumpers, to improve performance, and are used in the fitness field to a much lesser degree. Functional training has its origins in **rehabilitation**. **Physical** and **Occupational** therapists and **Chiropractors** often use this approach to retrain patients with movement disorders. Interventions are designed to incorporate task and context specific practice in areas meaningful to each patient, with an overall goal of functional independence

Material and Methods

The data was collected through respondents in the form of different tests. Purposive sampling method was used, as the researcher selected Basketball Players with a specific purpose. 50 basketball players selected under plyometric exercise group and 50 basketball players selected under functional exercise group. Training was given to both groups separately. This study involves a cross sectional, comparative pre and post-test of experimental group.

The Plyometric exercise programme were planned for 4 days a week 30 minutes in a day for 12 weeks including 10 minutes warm up period and 05 minutes cool down. **Johnson Basketball Test was used to measure basketball skill test** . The result computed also crosschecked by using following statistical variables. Mean standard deviation, T-test.

Results of the study

TABLE-1

DESCRIPTIVE STATISTICS OF MORPHOLOGICAL CHARACTERISTICS OF FUNCTIONAL EXERCISE GROUPS

| Sr. No. | Components | Means Scores | Standard Deviations |
|---------|-------------|--------------|---------------------|
| 1. | Age (Year) | 26.45 | 3.67 |
| 2. | Weight (Kg) | 65.28 | 8.09 |
| 3. | Height (cm) | 170.25 | 15.67 |

Table -1 depicted the morphological characteristics of Functional exercise group, the Mean Scores (S.Ds.) age of Functional exercise group was 26.45 (3.67) years, mean scores (S.Ds.) weight was 65.28 (8.09) Kg, and mean scores (S.Ds.) height was 170.25 (15.67) cm

TABLE-2

SHOWS MEAN SCORES AND STANDARD DEVIATIONS OF MORPHOLOGICAL CHARACTERISTICS OF Plyometric exercise group

| Sr. No. | Components | Means Scores | Standard Deviation |
|---------|-------------|--------------|--------------------|
| 1. | Age (Year) | 26.34 | 3.42 |
| 2. | Weight (Kg) | 66.67 | 8.02 |
| 3. | Height (cm) | 173.20 | 15.67 |

Table-2 shows Mean Score (S.Ds.) age of Plyometric exercise group was 21.34 (3.42) years, mean score (S.Ds.) weight was 66.67 (8.02) kg., mean score (S.Ds.) height was 173.20 (15.67) cm.

TABLE-3
MEAN SCORES AND STANDARD DEVIATIONS OF PRE & POST-TEST OF PASSING ABILITY BETWEEN FUNCTIONAL EXERCISE GROUP (FEG) AND PLYOMETRICS GROUP (PG)

| Basketball skill test | Group | Test | No | Mean Scores | SDs | T-test |
|-----------------------|-------|-----------|----|-------------|------|--------------------------|
| Passing | FEG | Pre-test | 50 | 18.90 | 3.22 | 1.08 NS |
| | PG | pretest | 50 | 18.94 | 3.20 | |
| | FEG | Post test | 50 | 19.94 | 3.29 | 2.86* |
| | PG | Post-test | 50 | 20.80 | 3.31 | |

Table-3, Shows that the mean scores and standard deviations and t-tests of pre & post-test passing ability between functional exercise group (FEB) and plyometrics group (PG).

TABLE-4
MEAN SCORES AND STANDARD DEVIATIONS OF PRE & POST-TEST OF SHOOTING ABILITY BETWEEN FUNCTIONAL EXERCISE GROUP (FEG) AND PLYOMETRICS GROUP (PG)

| Basketball skill | Group | Test | No | Mean Scores | SDs | T-test |
|------------------|-------|-----------|----|-------------|------|--------------------------|
| Shooting | FEG | Pre-test | 50 | 20.90 | 3.26 | 1.47 NS |
| | PG | Pre-test | 50 | 20.77 | 3.15 | |
| | FEG | Post-Test | 50 | 24.89 | 3.67 | 3.07* |
| | PG | Post Test | 50 | 26.78 | 3.76 | |

Table-4, Shows that the mean scores and standard deviations and t-tests of pre & post-test Shooting ability between functional exercise group (FEB) and plyometrics group (PG) .

TABLE-5
MEAN SCORES AND STANDARD DEVIATIONS OF PRE & POST-TEST OF DRIBBLING ABILITY BETWEEN FUNCTIONAL EXERCISE GROUP (FEG) AND PLYOMETRICS GROUP (PG)

| Basketball skill | Group | Test | No | Mean Scores | SDs | T-test |
|------------------|-------|-----------|----|-------------|------|--------------------------|
| Dribbling | FEG | Pre-test | 50 | 10.09 | 1.24 | 0.88 NS |
| | PG | Pre-Test | 50 | 10.25 | 1.24 | |
| | FEG | Post-Test | 50 | 12.67 | 1.56 | 2.85* |

| Basketball skill | Group | Test | No | Mean Scores | SDs | T-test |
|------------------|-------|-----------|----|-------------|------|--------|
| | PG | Post Test | 50 | 14.89 | 2.06 | |

Table-5, Shows that the mean scores and standard deviations and t-tests of **pre & post-test Dribbling ability between functional exercise group (FEB) and plyometrics group (PG)**

Discussion

The mean scores obtained from Table 3, the mean score of Pre-test was 18.90 and the post test was 19.94 respectively of passing ability on Functional exercise group. However, the standard deviation of Pre-test was 3.22 and the Post-test was 3.29 respectively of passing ability on Functional exercise group. Furthermore, the mean score of Pre-test was 18.94 and the post test was 20.80 respectively of passing ability on Plyometric exercise group. However, the standard deviation of Pre-test was 3.20 and the Post-test was 3.31 respectively of passing ability on Plyometric exercise group. The result of the study shows that significant effects of functional exercise group (FEB) and plyometrics group (PG) were found on Passing of basketball players. The findings clearly indicated that plyometrics group performed better in Passing abilities of basketball players as compared than functional exercise group (FEG). That means Plyometrics training was more beneficial to improve passing playing ability in basketball. The mean scores obtained from Table 4, the mean score of Pre-test was 20.90 and the post test was 24.89 respectively of Shooting ability on Functional exercise group. However, the standard deviation of Pre-test was 3.26 and the Post-test was 3.67 respectively of Shooting ability on Functional exercise group. In addition, the mean score of Pre-test was 20.77 and the post test was 26.78 respectively of Shooting ability on Plyometric exercise group. However, the standard deviation of Pre-test was 3.15 and the Post-test was 3.76 respectively of Shooting ability on Plyometric exercise group. The result of the study shows that significant effects of **functional exercise group (FEB) and plyometrics group (PG)** were found on Shooting of basketball players. The findings clearly indicated that plyometrics group performed better in Shooting abilities of basketball players as compared than functional exercise group (FEG). That means Plyometrics training was more beneficial to improve Shooting playing ability in basketball. The mean scores obtained from Table 5, the mean score of Pre-test was 20.90 and the post test was 24.89 respectively of dribbling ability on Functional exercise group. However, the standard deviation of Pre-test was 3.26 and the Post-test was 3.67 respectively of dribbling ability on Functional exercise group. In addition, the mean score of Pre-test was 20.77 and the post test was 26.78 respectively of Shooting ability on Plyometric exercise group. However, the standard deviation of Pre-test was 3.15 and the Post-test was 3.76 respectively of dribbling ability on Plyometric exercise group. The result of the study shows that significant effects of **functional exercise group (FEB) and plyometrics group (PG)** were found on Shooting of basketball players. The findings clearly indicated that plyometrics group performed better in Dribbling abilities of basketball players as compared than functional exercise group (FEG). That means Plyometrics training was more beneficial to improve Shooting playing ability in basketball.

References

1. Singh S K Chavan, P.B. (2011). Comparison of Physical Fitness Components of Rural and Urban Collegiate Students of Swami Ramanand Teerth Marathwada University; *Variorum, Multi- Disciplinary e-Research Journal* 01(4), 1-5.
2. Singh S.K. Mental health of medical students: a comparative study between Thai and Indian students. *International journal of physical education health and sports science* October 2015 vol.4(2).
3. Singh S.K, & Tuteja Effects of isotonic exercise on swimming performance. *International journal of Physical Education Health and Sports science* Vol 3.(1) 68-73 Sep.2013
4. Singh S.K, Comparison of Nature of injuries among aged group football players. *International journal of Physical Education Health and Sports science* Vol 2.(2) 68-73 Sep.2013.
5. Singh S.K, A study of injuries sustained during match and training period *International journal of Physical Education Health and Sports science* Vol 2.(2) 148-151 sep.2013
6. Singh S.K ,Effects of Resistance Training to improves speed ability among physical education students. *International journal of Physical Education Health and Sports Sciences* 2013
7. Singh, S.K. (2012). Effect of Health-Related Physical Fitness Programmes on the Cardio-Respiratory Function of Sedentary Students. *Journal of Exercise Science and Physiotherapy, Vol. 8, No. 2: 1-7.*
8. Steven S. J. (June, 1897). "A Study of the Effect of Participation Is Selected Physical Education Activities upon Component of HPF", *Dissertation Abstract International*, 48(3) , 596.
9. Thierry A. R. (2000). "The Effect of Training in the Maximum Oxygen Consumption (VO₂ Max) and The Physical Conditions of College Female Soccer Player", *Ph.D. Dissertation, TEXAS Amravati University*, p. 89.