

Research Article

Copyright © All rights are reserved by Nitin P Khanvilkar

# Chronic Physiological Adaptation of Selected Weight Training Program on the Performance Variables of Adolescence Football Boys

Ghanshyam Dhokrat<sup>1</sup> and Nitin P Khanvilkar<sup>2\*</sup>

<sup>1</sup>College of Physical Education, Wadala Mumbai

<sup>2</sup>Somaiya Sports Academy, Sports and Exercise Science, Academic Wing, Somaiya Vidya Vihar University, Vidya Vihar, Mumbai, Maharashtra, India

**\*Corresponding author:** Nitin P Khanvilkar, Somaiya Sports Academy, Sports and Exercise Science, Academic Wing, Somaiya Vidya Vihar University, Vidya Vihar, Mumbai, Maharashtra, India

**Received Date:** September 21, 2022

**Published Date:** November 11, 2022

## Abstract

To study the chronic physiological adaptation of weight training program on performance variable of adolescence boys was analyzed in this study on influence weight training on performance of penalty kick of adolescence boys in football. The study was carried on 40 boys from thane district, Maharashtra. The average age of the boys was 14.92 years. The mac-christen test for shooting was administered to assess the performance in penalty kick. Standardize procedure were adapted to administer the test. Subjects were trained into various weight training exercises for 12 weeks. The result indicated that the accuracy of mac-christen test with a mean gain of controlled and experimental group was 10.2 and 27.00 respectively. The mean difference of experimental over controlled group was 16.8. This reveals that weight training enhances the strength of lower extremities significantly which boost the performance of penalty kick. The analysis of the data revealed that the experimental group has improved in accuracy of penalty shooting performance from weight training significantly and statistically.

## Rationale of the study

In today's modern era 100% out of 57% people are crazy about the world's most popular game i: e football, its popular due to its ways of playing players, clubs, trophies and championships played. The most important thing in football is the skill, tactics, techniques used by the player during game situation. Now a day's football has its greatest number of fans not only male but female fans. Football stands for its best format of play in field where every member of team contributes towards its win equally. Each player has equal importance in football; let it be a goalkeeper or a player.

The dynamics of the game has changed over the year, game as well as player are more equipped with advance skills such as shooting, kicking, power shot, flip, short slice, chip, penalty kick etc. Penalty shoot decides the fate of many nails biting finishes. It challenges physical as well as mental skills of a football player. Fitness of a football player is tested in the 90 minutes game and beyond at various phases of the game. Penalty shooting decides the winner in case of a tie in the game. It requires Skill, passion, concentration and executing pressure in delivering the skills. Penalty shooting

are situations where the player or goalkeeper wins when either conquers fear and exerting pressure of delivering performance. It is not just a skill of putting the ball in to the net, but to place it before the reach of goalkeeper saves or stop. It the game of muscular strength, endurance, speed and agility. Modern soccer is about accelerating sprint, power kicking, agile tackles and sustained endurance across 90 minutes and beyond. Weight training is a scientific and systematic process to develop the muscular strength and muscular power. Weight training enhances the functional and structural ability of big muscles and performance. Research indicated that the greatest strength increases result from weight training program that requires the completion of various exercises that challenges the capacity of muscles through movement. Berger suggested that six to eight repetitions are most effective for structural and functional growth of muscles. Weight training has become an integral part of football training program both, in season and off season. The beneficial effect of weight training for soccer skills has been studied in various research. Intensity rather than duration is the critical factor of performance in football training

program in this research.

### Objectives

- The objective of the study is to check the accuracy of kick in penalty shoot in football of adolescence boys.
- The objective of study is to measure the increase in muscular strength of lower extremities in football of adolescence boys.

### Hypothesis

- There will be no significant change in the accuracy of kick in penalty shoot in football of adolescence boys.
- There will be no significant change in the muscular strength of lower extremities in football of adolescence boys.

### Methodology

#### Sample

40 Football Boys aged 16-18 years of Shrimati Sulochanadevi Singhania School, thane West, Maharashtra India (Table 1&2).

**Tables 1:** Tools: Experimental Design, Dependent variables.

Variables	Test	Units
Muscular strength	Standing broad jump	Meters
Mac-Christian Test	Shooting Test	Numbers

**Table 2:** Independent variables: Weight Training.

Exercise	Sets X Reps	Duration
Squats	3 X 12	1 <sup>st</sup> to 4 <sup>th</sup> week
Lunges	3 X 12	1 <sup>st</sup> to 4 <sup>th</sup> week
Dead lift	4 X 12	5 <sup>th</sup> to 8 <sup>th</sup> Week
Weighted Box Stepping	4 X 12	5 <sup>th</sup> to 8 <sup>th</sup> Week
Jump squat	5 X 12	9 <sup>th</sup> to 12 <sup>th</sup> week
Straight back dead lift	5 X 12	9 <sup>th</sup> to 12 <sup>th</sup> week

### Procedure

The main purpose of the study is to see the effect of the weight-training program on the development of muscular strength and accuracy of football players aged 16 to 18 years. The methodology adopted by the researcher for this study was experimental design.

The study consisted of one experimental group which has been compared with an equivalent parallel design for testing the effect of weight-training program for the development of muscular strength and performance variable of adolescent football player for 12 weeks in phases.

### Pre-test

**Table 3:** Training Phase.

Phases	Duration
Warm Up	10 Minutes
Training Session	40 Minutes
Rest Period	1 Minutes
Limbering Down	10 Minutes

**Table 4:** Training module.

Phases	Guidelines
Load	50% - 85%
Intensity	Progressive
No. Exercises	6-Mar
No. Reps Per Set	12-Aug
No. Sets Per Exer.	5-Mar
Rest Interval	60 Seconds
Speed Of Execution	Slow-Medium
Frequency	Thrice A Week

In training phases, the researcher has included the rest period between sets in the training program for the day. Some exercises are evenly distributed in the three sessions of the week due to its intense effect in weight training literature.

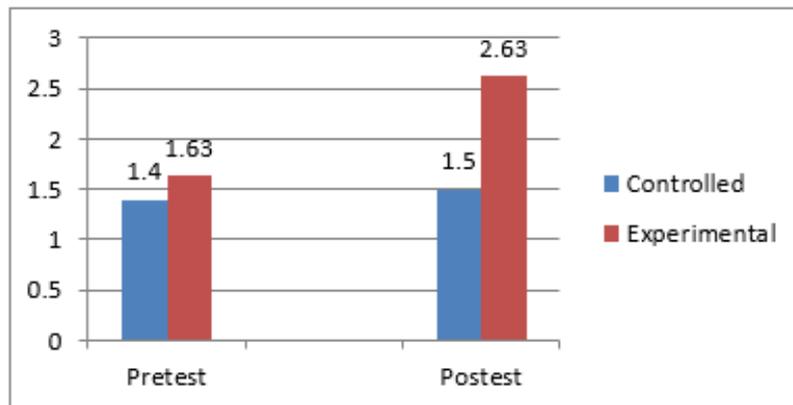
### Post Test Phase

After the completion of 12-week weight training program posttest will be conducted on all the subject of control and experimental group as per the pretest. The data will be collected and recorded carefully.

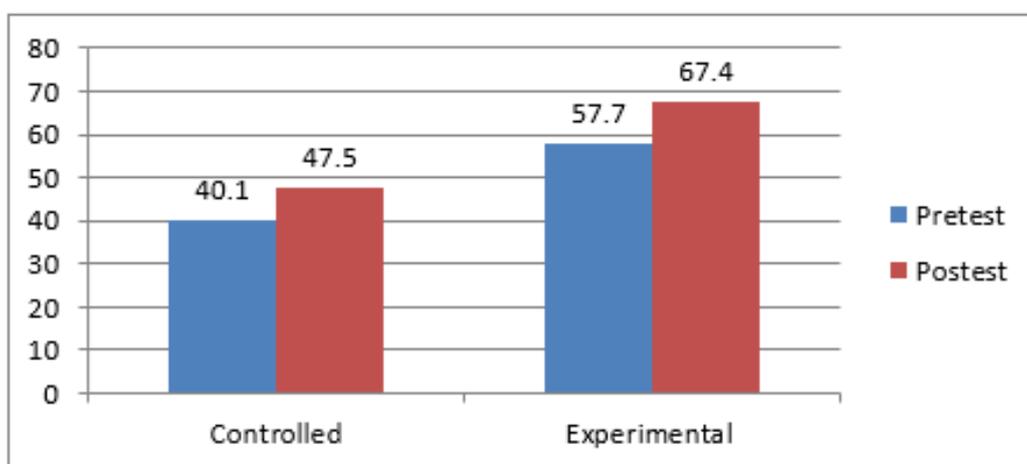
### Analysis of Data:

The data was analysed by using 't' test (Figure 1&2)

From the above graphical representation, the researcher has analysed and interpreted that weight training improves muscular strength of lower extremities which is tested by using standing broad jump. There is a significant improvement in accuracy of penalty kick skills due to weight training. Weight training brings strength and stability in the muscles which results in enhances performance. Mac-Christan test of goal shooting accuracy improves penalty kicking skills significantly due to weight training program



**Figure 1:** Comparison of Mean gain of muscular strength of Experimental and control group. Mean gain of muscular strength of Experimental and control group.



**Figure 2:** Comparison of Mean gain of Mac-christan test of Experimental and control group. Mean gain of Mac christan test of Experimental and control group.

## Result and Discussions

The analysis of the data revealed that the experimental group has improved in muscular strength which was tested by the help of standing broad jump statically and significantly. The comparison between the experimental and control group shows that experimental group is statistically significant to selected weight training exercises which are adequate for the improvement of muscular strength. The analysis of the data revealed that the experimental group has improved in accuracy of penalty kicks performance which was tested by the help of Mac-christan test statically and significantly. The comparison between the experimental and control group shows that experimental group is statistically significant to selected weight training exercises which are adequate for the improvement of Penalty shooting for accuracy and peak performance [1-5].

## Suggestions and Recommendations

From the results of the study can be concluded that, selected weight training for 12 weeks could help to improve muscular strength of lower extremities and accuracy in penalty shooting of adolescence boy's football players, further recommended that present study can be used by the sports coaches and physical

education teachers for training and assisting in performance enhancement of football teams on various levels.

## Acknowledgement

None.

## Conflicts of Interest

No conflicts of interest.

## References

1. Bunc, JB (1979) Short term influence of climbing activities on strength and balance within school physical education. *International Journal of Fitness* 33-42.
2. Chui E (1958) The effect of systematic Weight Training on Athletic Power. *Research Quarterly* 21: 188.
3. Kurtz JR (1969) Comparison of three weight training programs upon the development of muscular strength. *Completed research in Health Physical education and Recreation* 11: 108.
4. O Shea JP (1964) Effect of varied short term Weight training program on improving performance in the 400 meters run. *Research Quarterly* 40: 248.
5. VBB (1963) Comparison of two programmes of weight training in regard to their effects upon the development of muscular strength and endurance. *Completed Research in health, Physical Education and Recreation* 5:89.