

**EFFECT OF POLE MALLAKHAMB EXERCISE ON SELECTED  
PHYSICAL FITNESS VARIABLE OF COLLEGE STUDENTS**



**Proposed Thesis**

Presented to Vidyasagar University  
In lieu of a Theory Paper for Degree of Master of Physical Education

By

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# MUGBERIA GANGADHAR MAHAVIDYALAYA



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## CERTIFICATE BY SUPERVISOR

This is to certify that **Aukash Rai** is a regular student of Mugberia Gangadhar Mahavidyalaya under Vidyasagar University in the session 2021-2023. He is a student of Master of Physical Education, Semester-IV, carried out his research study under my supervision and dissertation titled **“Effect of Pole Mallakhamb exercise on selected physical fitness variable of college students”**. This dissertation is his original work and it has not previously formed the basis for the award to any candidate, for any degree, diploma, associate ship or other similar titles. The dissertation represents, entirely an independent work on the part of the candidate but the general guidance by me.

Place: Bhupatinagar

Date: 24/07/2023.

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(Mr. SK Khabiruddin)

Supervisor





## **1.1 General Introduction:**

Mallakhamb is an ancient Indian martial art and has also been recognized as is a traditional sport, originating from the Indian subcontinent, in which a gymnast performs aerial yoga or gymnastic postures and wrestling grips in concert with a vertical stationary or hanging wooden pole, cane, or rope. The word "mallakhamb" also refers to the pole used in the sport. The pole is usually made from sheesham (Indian rosewood) polished with castor oil. Three popular versions of Mallakhamb are practiced using a sheesham pole, cane, or rope. The name Mallakhamb derives from the terms malla, meaning wrestler, and khamb, which means a pole. Literally meaning "wrestling pole", the term refers to a traditional training implement used by wrestlers. On April 9, 2013, the Indian state of Madhya Pradesh declared Mallakhamba the state sport. As of 2017, more than 20 other states in India have followed suit.

## **1.2 Pole Mallakhamb**

In this variation, a vertical wooden pole made of teak wood or sheesham is fixed to the ground. The pole is smeared with castor oil, which helps to minimize excessive friction. Participants perform various acrobatic feats and poses while hanging on the pole. Wrestler's mount, dismount, and utilize the pole for various complex calisthenics designed to develop their grip, stamina, and strength in the arms, legs, and upper body.

There are a number of pillars, although the most common is a free-standing upright pole, some eight to ten inches in diameter, planted into the ground. The pole used in competitions is a straight pole made of teak or sheesham wood, standing 2.6 metres (8.5 ft) in height with a circumference of 55 centimetres (22 in) at the base. It gradually tapers to a circumference of 35 centimetres (14 in) at the top.

## **1.3 Physical Fitness**

Physical fitness involves the performance of the heart and lungs, and the muscles of the body. Physical fitness is a state of health and well-being and, more specifically, the ability to perform aspects of sports, occupations and daily activities. Physical fitness is generally achieved through proper nutrition, moderate-vigorous physical exercise, and sufficient rest along with a formal recovery plan.





### Measurement of Pole Mallakhamb

Range	Height in mm (senior group)	Height (sub-junior group)
Above the ground	2600 to 2800mm	2400 to 2600mm
Under the ground	800 to 900mm	700 to 800mm
Neck	180 to 200mm	180 to 200mm
Top	70mm	60mm
Total length	3400 to 3700mm	3100 to 3400mm
<b>Circumference</b>		
Bottom	530 to 550mm	480 to 500mm
Below the neck	300 to 350mm	300 to 350mm
Neck	180 to 200mm	180 to 200mm
Top	350mm	300mm
<b>Note: All dimension is in millimetres (mm)</b>		

#### 1.4 Aim of The Study:

The aim of the study is to find out the physical fitness variables of college students through pre and post training.

#### 1.5 Objectives of the Study:

1. To compare the physical fitness variables of students from pre and post training.
2. To search the progress in coordinative abilities, physical, physiological and qualities of selected students through training.

#### 1.6 Limitation of the Study:

- i. Socio-economic condition of the subjects was not considered for the study.
- ii. The previous experience of the subjects in the field of sports and games, which might influence the data, was not considered.





iii. Psychological factors, ethnicity, life style etc. was not controlled.

iv. Though the subjects are motivated verbally no attempt were made to differentiate the motivation levels during the period of training.

### **1.7 Delimitation of the study:**

The study was delimited to the following factors.

1. A total number of 30 male college students belonging to Mugberia Gangadhar Mahavidyalaya of general II<sup>nd</sup> year were selected as subjects for this study.
2. Purposive random sampling method was adopted to select the subjects for this study.
3. Only selected coordinative abilities, physical, physiological and psychological qualities were preferred as dependent variables.
4. Training duration was limited to 6 weeks with 3 sessions per week.
5. The time selected for training was morning; it was very conducive to enhance the results of the training.
6. The variables chosen were assessed before and after completion of the specific training.

### **1.8 Hypothesis of the study:**

The following hypothesis were formulated.

- (i) There might be a significant development take place on standing broad jump after six-week training of mallakhamb exercise.
- (ii) There might be a positive development take place on push-up after six-week training of mallakhamb exercise.
- (iii) There might be a positive development take place on sit-up after six-week training of mallakhamb exercise.





(iv) There might be a significant development take place on beep-test after six-week training of mallakhamb exercise.

### 1.9 Significance of the study:

These are the significant of the study:

- 1.This project would give a vision to the students and coaches to technically realize the transformation in dependent variable by the prescribed exercises.
- 2.It may offer good idea in load fixing to get the preferred result through these exercises.

### 1.10 Related Terms

**Traditional game:** It is an activity that has characteristics such as satire, intelligence, mobility which are found in the folk culture and played collectively in the times when the feature is limited and the possibility of entertainment is limited. Digital Games and Violence

**Mallakhamb:** Mallakhamba or mallakhamb is a traditional sport, originating from the Indian subcontinent, in which a gymnast performs aerial yoga or gymnastic postures and wrestling grips in concert with a vertical stationary or hanging wooden pole, cane, or rope. The word "mallakhamb" also refers to the pole used in the sport.

**Standing Broad Jump:** It's a two footed horizontal jump from a standing position.

**Push-Up:** A push workout contracts your muscles when weight is being pushed away from your body, meaning the work is done when the muscle lengthens.

**Sit-Up:** The **sit-up** is an abdominal endurance training exercise to strengthen, tighten and tone the abdominal muscles.

**Beep-Test:** It is an extremely simple test, which requires minimal equipment and demands the athlete(s) to run continuously until volitional exhaustion. It requires the athlete to perform continuous 20 m shuttle runs, whereby the individual must reach the opposite end of the 20 m grid before the next beep sounds.





## METHODOLOGY

In this the researcher have discussed about procedure, subjects, selection of variables, procedure of data collection.

### 3.1 Procedure

In this chapter the procedure adopted for the selection of subjects, selection of variables, reliability of data, collection of data, design of the study, administration of training and the statistical techniques used for analysing the data have been discussed.

### 3.2 Subjects

Thirty male college students belonging to Mugberia Gangadhar Mahavidyalaya of general II<sup>ND</sup> year were selected as subjects for this study.

The average age of the subjects was 18-25 years as obtained from college records.

To ensure maximum co-operation from the subjects the research scholar had a meeting with the subjects and principals of the respective college. The purpose of the study was clearly explained to them in order to ensure that there was no ambiguity among the subjects regarding the requirement and effort they have to put in the successful completion of the project. All the subjects voluntarily agreed to take part in the experiment and assured fullest cooperation.

### 3.3 Selection of Variables

The selection of variables was done by using the following criteria:

1. Through review of all the available scientific literature pertaining to the variables which are related and contribute to better effect of pole mallakhamb exercise.
2. Feasibility in terms of availability of instruments and measuring techniques and acceptability of the test items to the subjects.

Based on the above-mentioned criteria the following variables were selected.

1. Endurance (Beep-test)
2. Leg strength (lower extremities)
3. Arm strength (upper extremities)
4. Abdominal strength (core strength)





### **3.4 Procedure of data collection**

#### **Standing broad jump**

Objective: To measure the explosive leg strength of the subject.

Equipment and Marking: A single mat a 10-metre measuring tape a take off line was marked in front of the mat 30 centimetre away and some colour chalk powder.

Procedure: The subject stood behind the take off line with feet parallel to each other. The performer flexed his knees and took his arm backward, then with a vigorous forward swing of arm and extension flexed knees he took off in one chance and jumped on the mat as far forward as possible. Three trials were given adequate rest.

Scoring: the number of cm between the take off line and the nearest heel mark upon landing was recorded as score of the test. Best of the three trials was considered as the performance in the test.

#### **3.5 Beep-test**

Objective: to measure the cardio-respiratory endurance.

Equipment and Marking: The total 20 metres line was mark by placing markers, cones whistle and stop watches.

Procedure: The performers stood behind the starting line an assigned spotter behind them. Upon getting the starting signal with beep sound as many levels as possible. The spotters were maintained a court of each level and when the signal of sound was here, they immediately ran to spots/mark point.

Scoring: The score in metre was determined by multiplying the number of completed laps times the distance of each lap.

### **3.6 Leg Strength (lower extremities)**

Test: Standing broad jump.

Equipment: Lime, measuring tape

Method: Subjects must stand behind the line with full flat on the ground and during jump they are not allowed to raise their heel from ground. If heel raise from ground they were disqualified.





### **3.7 Arm strength (upper extremities)**

Test: Push up

Equipment: Stop watch

Method: subjects were given 1 minute for push-up and their maximum push up was counted as record.

### **3.8 Abdominal strength (core strength)**

Test: Full sit-up

Equipment: stopwatch

Method: subjects were given 1 minute for sit-up and their maximum push up was counted as record.

## **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Summary**

The present study was undertaken with a view to observe "The effect of pole mallakhamb

It was hypothesized that there is positive effect of selected mallakhamb exercises on standing broad jumping broad jump, push-up, sit-up, and beep-test.

For this study 30 male students were randomly selected from department of physical education (2<sup>nd</sup> year General section), Mugberia Gangadhar Mahavidyalaya Bhupatinagar Purba Midinipur and their age range from 18 to 25 years. The experimental group were given the treatment for 6 weeks, morning session on three days a week. Before the training and after the training the data was recorded and calculated by using dependent t test and was found significant differences between the pre and post-test value of standing broad jump, push-up, sit-up and beep-test. in all cases the criteria for statistical significance were set at 0.05 level of confidence ( $P < 0.05$ )





## 5.2 Conclusion:

From the findings of the study, it is concluded that-

- I. Three type of mallakhamb exercise showed higher improvement in standing broad jump of the physical education student
- II. It is further concluded that mallakhamb exercises is mor effective for development of standing broad jump, push-up, sit-up and beep-test.
- III. Regular practice of mallakhamb exercise increased the endurance capability.

## 5.3 Recommendation

This study calms that mallakhamb exercise can be improved explosive strength of leg muscle, core endurance, arm strength and cardiovascular endurance. Hence it is recommended that those students of physical education want to improve there selected above said four physical fitness components may also practise mallakhamb exercises in regular basis to achieve their goal in cardio endurance related games and sports.

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