



## A Comparative Study of the Selected Physical Fitness Components of Indian Wushu Athletes

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## ABSTRACT

Among Indian wushu athletes we were taken 60 athletes 30male (selected = 15 non selected = 15) and 30 female (selected = 15 non selected = 15) in Asian games camp 2010, 't' test was applied to know the difference between selected and non-selected athletes in regard to their fitness. We found significant difference in men selected then non selected athletes on Medicine ball throw test and Stand and Reach test 't' values were 3.24, 2.59 respectively whereas insignificant value on Standing Broad Jump test, 30 meter Dash test, Shuttle Run 6\*10 test, 12 Min. run and walk test, 't' values were 0.08, 1.40, 0.03, 0.43 respectively. We also found significant difference in women selected and non selected athletes on variables Standing Broad Jump test, 30 meter Dash test and Shuttle Run 6\*10 test, 't' values were 2.30, 3.85, 2.81 respectively whereas insignificant value on Medicine ball throw, Stand and reach flexibility, 12 Min run and walk, 't' values were 1.47, 1.24, 0.98 respectively, at 0.05 level of significance

## KEYWORDS

## Introduction

Wushu sports Performance is determined by three factors i.e. physical fitness, technique and tactics. In addition to these factors there are some other factors like physique, body composition and psychological traits which also have an overall effect on the performance. These factors also influence the physical fitness status, technique and tactical capabilities of wushu athletes. As, a high level of efficiency in technique and tactics is primarily required in Wushu, physical fitness is considered the most important factor in all these factors. In other words, to a large extent technique and tactics is correlate to the physical fitness. Barrow and Mc Gee 1971, includes the capacity of an individual to move efficiently and with strength and force over a reasonable length of time. The most commonly mentioned components of motor fitness are strength, endurance, speed agility, co-ordinative abilities, flexibility etc, the lack of knowledge about the physical fitness status of our athletes is one of the major causes for relatively poor performance of in international competitions for example in wushu competitions some athletes feel discomfort or heaviness and breathlessness or loss of stamina in the last stage or rounds or after early rounds recovery rates are slow this shows the lack of physical efficiency or fitness. It is therefore important that we in India should also scientifically assess the physical fitness of our wushu athletes, so that we can prepare them for better performance in the international competitions.

## Methodology:

The physical fitness test were conducted on the national campers practicing for Asian Games camp 2010 the age of the campers were 20 to 30 years and numbers of campers were 60 (30 male (selected = 15 non selected = 15) and 30 female (selected = 15 non selected = 15)). 't' test was applied to know the difference between selected and non-selected athletes in regard to their fitness. On the basis of relevant literature and expert discussion to measure the physical fitness following test was applied:

## 1 Strength Measurement:

- i) Medicine ball throw test (meter/centimeter)
- ii) Standing broad jump test (meter/centimeter)

## 2 Speed Measurement:

- i) 30 meter flying start test (seconds)

## 3 Agility Measurement:

- i) 6x10 meter shuttle run test. (Seconds)

## 4 Flexibility Measurement:

- i) Sit and reach flexibility test (centimeter)

## 5 Endurance Measurement:

- i) 12 minutes run and walk test (meter)

The above mentioned test was administered in morning and evening sessions. The standard protocol was followed to get the accurate scores.

## Results Analysis

The mean, standard deviation (S.D.) and 't'-test was computed for both male and female athletes for selected and non-selected groups respectively and are given in table I and II.

Table-I

## Comparison of Selected and Non Selected Male Indian Wushu Athlete

| Variables                         | Athletes     | Mean    | Standard Deviation | 't'     |
|-----------------------------------|--------------|---------|--------------------|---------|
| Medicine ball throw (meter)       | Selected     | 4.10    | .35                | 3.24*   |
|                                   | Non-selected | 3.66    | .41                |         |
| Standing Broad Jump (meters)      | Selected     | 2.49    | .22                | .08 NS  |
|                                   | Non-selected | 2.48    | .13                |         |
| 30 meter Dash (Sec)               | Selected     | 4.12    | .33                | 1.40 NS |
|                                   | Non-selected | 4.29    | .31                |         |
| Stand and Reach Flexibility (cms) | Selected     | 12.24   | 2.05               | 2.59*   |
|                                   | Non-selected | 10.08   | 2.57               |         |
| Shuttle Run 6*10 (sec)            | Selected     | 15.88   | 1.19               | .032 NS |
|                                   | Non-selected | 15.87   | .75                |         |
| 12 Min Walk (meters)              | Selected     | 3250.00 | 677.00             | .428 NS |
|                                   | Non-selected | 3354.17 | 565.86             |         |

\*Significant at 0.05 level of significance.

NS=Non-significant

The Table-I reveals that the selected male Indian wushu athletes significantly differ than not selected wushu athletes in arms strength and trunk and hamstrings flexibility, measured by medicine ball throw and stand and reach test. The 't' value for these tests were found 3.24 and 2.59 respectively. Whereas there were no significant difference observed in standing

Broad jump, shuttle run and 12 min run and walk test. at 0.05 level of significance.

**Table II**  
**Comparison of Selected and Non Selected Female Indian Wushu Athlete**

| Variables                         | Athletes     | Mean    | Standard Deviation | 't'       |
|-----------------------------------|--------------|---------|--------------------|-----------|
| Medicine ball throw (meter)       | Selected     | 3.15    | .24                | 1.47 (NS) |
|                                   | Non-selected | 2.98    | .35                |           |
| Standing Broad Jump(meters)       | Selected     | 2.20    | .25                | 2.30*     |
|                                   | Non-selected | 1.90    | .39                |           |
| 30 meter Dash (Sec)               | Selected     | 4.74    | .26                | 3.85*     |
|                                   | Non-selected | 5.34    | .54                |           |
| Stand and Reach Flexibility (cms) | Selected     | 12.19   | 2.01               | 1.24 (NS) |
|                                   | Non-selected | 11.04   | 2.44               |           |
| Shuttle Run 6*10(sec)             | Selected     | 16.72   | 1.06               | 2.81*     |
|                                   | Non-selected | 18.05   | 1.13               |           |
| 12 Min run and Walk (meters)      | Selected     | 2714.29 | 419.04             | .98 (NS)  |
|                                   | Non-selected | 2500.00 | 673.76             |           |

\* Significant at 0.05 level of significance.  
NS=Non -significant

The Table-II reveals that the selected female Indian wushu athletes were significantly differ in standing broad jump test , 30 m dash test and shuttle run test. Than non selected female, the "t" values for these tests were found -2.30, 3.85 and 2.81 respectively. Whereas there is no significant difference observed in medicine ball throw test, stand and reach flexibility test and 12 Min and Walk test. at 0.05 level of significance.

### Discussion and Recommendations

The present fitness component in the selected Indian male wushu athletes were having comparatively more strength in there upper extremity specially arm strength and good flexibility in there trunk and hamstring. Flexibility is one of the important performance determining factors in combat sports like Wushu. Flexibility also help to do full range of motion thus more force may produce for better outcome. In selected female wushu athlete leg strength, speed and agility were significantly higher than the non-selected. This could be the reason why the females especially from the hill and difficult climate conditions dominate in female section in India, because with time they develop natural physical abilities to cope up with those environmental and climatic conditions i.e. females from north east region.

As physical fitness is one of the major performance factors in Wushu sports thus it should be included in the training of our athletes.

This study was a general overview of present Indian performance in regards to their physical fitness level, but to compete at international level more specific test in relation to other performance factors should be conducted in future, only then we can improve and maintain our performance at international level.

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