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## Assessment of relative strength between south Asian and all India inter university male weightlifters

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### Abstract

The purpose of this study was to assessment of the relative strength between south Asian and all India inter university male weightlifters.

**Objectives:** To compare the relative strength between 12<sup>th</sup> south Asian Games and All India University the different weight categories.

**Methodology:** The main purpose of this study was purposive selected from the between “12<sup>th</sup> SOUTH ASIAN GAMES” and All India university for the year 2016-17. Male weightlifters participated in various weight categories, acted as the subjects. The age of the subjects ranged from 18-30 years. The total subjects were sixteen (60), each group thirty (30) subject were selected and weight categories selected from (62 kg, 69 kg, 77 kg, 85 kg, 94 kg, & 105 kg.)

**Collection of Data:** In order to measure the relative strength of various lifters of different groups, the data was collected from the results of “12<sup>th</sup> south ASIAN GAMES” for the year 2016, which was held at Assam, Guwahati and All India inter university weightlifting championship (2016-17) which was held at Panjab university, Chandigarh, The sum of the best 2 lifts Snatch, and cline & jerk of respective events total performance was considered as the scores of the lifters.

**Discussion of findings:** Analysis of the data reveals that there is no significant difference in the relative strength between 12<sup>th</sup> south Asian games and All India inter university various weight categories of lifters has been found in the selected no significance level, which has determined that different weight categories of lifters have different levels of relative strength. After applying the independent t-test it was found to have a no significant difference in both groups in their relative strength. This is probably due to the different nature of the training components and pre-requisite for lifters. These results may be due to a small sample size and other factors such as different types of body, differences in body composition, etc.

**Conclusions:** The lifters participated in 12<sup>th</sup> south Asian games and all India inter university weightlifters of various weight categories like (62 kg, 69 kg, 77 kg, 85 kg, 94 kg, and 105kg,) showed a no significant difference between the 12<sup>th</sup> south Asian games and all India inter university male weightlifters in their relative strength.

**Keywords:** Relative Strength, weight categories, students, weightlifters south Asian, All India university

### Introduction

Don cash Seaton et al (1956) by environment human beings are competitive and aspires from excellence in every field. Sport is not an exception, changes are the order of the day. Changes are taking place each day in every walk of life. Life of people, their philosophy, ways of living etc. are undergoing changes due to basic and applied research in various fields. Man has reached the space age from the primitive “Stone Age” because of continuous changes. Records have been sprucing as a result of combined improvement in the technique of training and coaching. New techniques are established in laboratories and scientific methods are applied to obtain the level of performance. Sports by their very nature are enjoyable, challenging, absorbing and require a certain amount of skill and physical condition.

Bucher Today we all know that now a day is an area of smallest input and extreme output and for this, every possible work is being done to increase efficiency. Every perception angle is being thoroughly scrutinized by researchers and scientists together, so that sportsmen can get maximum mechanical advantages to improve their performance, clear insight of sports during Greek period was reflected in the Epic poems of Homer. Games were the part of the daily life of the people, or any important event.

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C.N. Gardiner (1955) [2] Games and sports are a popular pastime activity for the young and the old, for boys and girls and for men and women. They offer an opportunity for all to obtain exercise, fun and relaxation. They can play an important role in developing physical fitness and skills for use in leisure time, now and perhaps more important, in later years. Many of the skill developed through games and sports may be used in years to come to help keep physically fit.

Strength training has made the single, most positive contribution to this type of improvement. Witness the performance this year of tennis ace Serena Williams and Giants Slugger Barry Bonds.

Maximum strength is the backbone upon which all other strength qualities depend. You'll hear me talk a lot about being fast and the importance of speed, power, reactive ability etc.

All of these qualities of strength are very important, but truthfully, unless you have enough raw horsepower in your engine you won't be going anywhere or doing anything in a hurry! In the case you can think of horsepower and maximum strength as being synonymous.

While only power lifters need to maximize and demonstrate maximum strength in competition, all athletes need to develop maximum strength as a foundation for other such as explosive strength, reactive strength, strength endurance, agility and others.

For this reason, absolute muscular strength must first be brought to optimal levels and simultaneously blended into strength that you can use for your sport, or "functional" strength. Maximum strength can be displayed through 2 types of muscular actions:

1. Concentric Strength: The ability to overcome a resistance through muscular contraction, i.e. the muscle shortens as it develops tension. Lifting a weight is an example of concentric strength.
2. Eccentric Strength: Displayed when a muscle lengthens as it yields to a resistance. Eccentric strength is normally 30-50% greater than concentric strength, meaning that you can lower significantly more weight in good control than you can actually lift.

Athletes who compete in weight-class events depend heavily on relative strength, as do athletes who must overcome their bodyweight to accomplish a motor task (i.e. long jump, sprinting etc.). Further, sports which have aesthetic requirements (figure skating, gymnastics etc.) demand the development of strength without a commensurate gain in bodyweight.

So how do you know if your strength to weight ratio is optimal? Simple, if your strength is going up faster than your bodyweight and your performance is improving as well then you're on the right track. You definitely don't need to be afraid of an increase in bodyweight so long as the strength gained from that bodyweight is functional.

If one weighs 150 pounds and squats 200 lbs and increases his bodyweight to 175 lbs and improves his squat to 300 lbs, his strength: bodyweight ratio has improved considerably!

Oftentimes a 10% increase in body-mass will lead to as much of a 30% increase in strength or more!

So how do you know when you've reached a point when you're becoming too strong? Simple. The thing to note is "eventually", but not "immediately", increasing strength and body-mass could result in negative effects on speed, size, and relative strength.

### Objectives of the study

To compare the relative strength between 12<sup>th</sup> south Asian

Games and All India Inter University different weight categories.

### Methodology

#### Subjects

The main purpose of this study was purposive selected from the between "12<sup>th</sup> SOUTH ASIAN GAMES" and All India inter university for the year 2016-17. Male weightlifters participated in various weight categories, acted as the subjects. The age of the subjects ranged from 18-30 years. The total subjects were sixteen (60), each group thirty (30) subject were selected and weight categories selected from (62 kg, 69 kg, 77 kg, 85 kg, 94 kg, & 105 kg.)

#### Reliability of Data

The reliability of data was ensured by establishing the instrument reliability and tester reliability.

#### Instrument Reliability

All the instruments and equipments like weighing machine, Bar, Weight plates, collars, platform and outfits were taken.

#### Testers Reliability

Since the data's for the study is taken from the performance of "12<sup>th</sup> SOUTH ASIAN GAMES" for the year 2016, which was held at Assam, Guwahati, and All India inter university weightlifting championship (2016-17) which was held at Panjab university, Chandigarh, was conducted by the qualified national and International referees, these scores were assumed to have higher level of reliability.

#### Collection of Data

In order to measure the relative strength of various lifters of different groups, the data was collected from the results of "12<sup>th</sup> SOUTH ASIAN GAMES" for the year 2016, which was held at Assam, Guwahati. and All India inter university weightlifting championship (2016-17) which was held at Panjab university, Chandigarh, The sum of the best 2 lifts Snatch, and cline & jerk of respective events total performance was considered as the scores of the lifters.

#### Statistical Analysis

According to objectives of the study to collected the data Analysis of descriptive statistics were used. (Mean, Standard Deviation).

- Independent t-test was applied to analyze and compare of the relative strength between the different Weight categories of weight lifters of 12<sup>th</sup> South Asian Games, and All India Inter University. The level of significant was set at 0.05

#### Results and Findings

The total subjects were sixty (60) thirty (30) subjects were selected from each group. The sum of the best 5 lifts for the Snatch, and cline & jerk of respective events total performance was considered as the scores of the lifters of respective events was considered as the scores of the lifters. The mean and standard deviation values of the both groups 12<sup>th</sup> South Asian Games and All India Inter University weightlifters

Table - 1 mean and standard deviation of scores of the relative strength of lifters from between 12<sup>th</sup> south Asian games and All India Inter University weightlifters for the different body weight categories.

**Table 1: Mean and Standard Deviation**

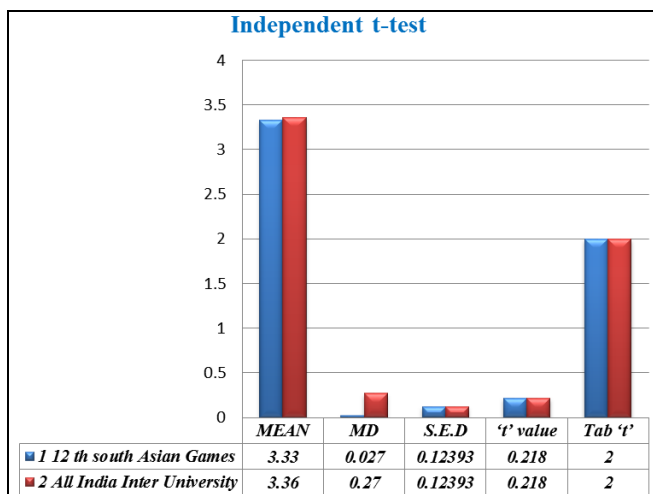
S.N.	Groups	N	M	S.D.
1	12 <sup>th</sup> South Asian Games	30	3.33	0.59
2	All India Inter University	30	3.36	0.33

Table - 2 It was discovered that the calculated t- value (0.218) was less than the tabulated t-value (2.00), so there was no significant difference between the mean scores of Competitive relative strength of the two groups of 12<sup>th</sup> south Asian and All India inter university male weightlifters.

**Table 2: Independent T-Test**

S.N.	Groups	M	Md	Sed	T- Ratio	Tab- T
1	12 <sup>th</sup> South Asian Games	3.33	.02700	.12393	.218	2.00
2	All India Inter University	3.36	.2700	.12393	.218	2.00

\*Significant at 0.05 level (58, = 2.00)



**Fig 1:** Graphical Representation of t- value with regard to Comparison of relative strength between the 12<sup>th</sup> south Asian and All India inter university of the different body weight groups.

**Discussion of Findings**

Analysis of the data reveals that there is no significant difference in the relative strength between the 12<sup>th</sup> south Asian games and All India inter university various weight categories of lifters has been found in the selected no significance level, which has determined that different weight categories of lifters have different levels of relative strength. After applying the independent t-test it was found to have a no significant difference in both groups in their relative strength. This is probably due to the different nature of the training components and pre-requisite for lifters. These results may be due to a small sample size and other factors such as different types of body, differences in body composition, etc.

**Summary**

The main purpose of the study was to compare the relative strength of the weights belonging to various weight categories like (62 kg, 69 kg, 77 kg, 85 kg, 94 kg, and 105kg,) Total six (6) weight categories and top 5 position were selected the total number of subject sixteen (60). thirty (30) subject selected from 12<sup>th</sup> south Asian games that have participated in different weight categories held in Assam, Guwahati in 2016 and thirty (30) subject selected from "All India inter university" that have participated in different weight categories held in Panjab university, Chandigarh in (2016-17) were selected as subjects. Their strengths were recorded in kilograms. Scores or performance of male lifters were

analyzed by calculated the means and standard deviation the data were subjected to independent t-test with unidirectional order to establish the meaning in the media. The results showed that participants in different categories lifters differ no significantly in their relative strength. The level of significance was selected at 0.05 levels. After applying independent t-test the showed there was no significant difference in relative strength. However, 12<sup>th</sup> south Asian games and All India inter university weightlifters.

**Conclusions**

Within the limitations of the study the following conclusions were drawn:

1. The lifters participated in 12<sup>th</sup> south Asian games and All India inter university weightlifters of various weight categories like (62 kg, 69 kg, 77 kg, 85 kg, 94 kg, and 105kg,) showed a no significant difference between the 12<sup>th</sup> south Asian games and All India inter university male weightlifters in their relative strength.

**Recommendations**

1. Similar types of study may be conducted on female weightlifters.
2. Similar types of study may be conducted for different games and sports, where the relative strength plays an important role such as weight lifting, body building, judo, wrestling, boxing, throwing events etc.
3. The study may be conducted utilizing the lifters of different groups.
4. The study may be conducted on large sample.

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