

## **“A Comparison of Leg Length Among Indian Taekwondo Players”**

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### **Abstract**

This study aimed to examine the Leg Length among State, National and International level of Indian male Taekwondo players. A total of 90 male Taekwondo players were randomly selected for data collection. The entire data divided in three (3) groups i.e. 30 State, 30 National and 30 International level Taekwondo players. The Flexible steel tape to measure leg length. The analysis involved descriptive statistics and One way ANOVA were used to result in SPSS Software, with a significance threshold set at .05. The result of the study revealed significant difference among State, National and International level Indian Taekwondo players on Leg Length. Whereas, International players had a high Leg Length in Comparison to State and National Taekwondo players.

**Keywords:** Anthropometry, Leg Length, Taekwondo, International, National and State players.

### **Introduction**

Taekwondo is a Korean martial art, the literal meaning of taekwondo the art of hand and foot to use fighting or self-defence. basically, origin of taekwondo is many thousands of years of Korean martial arts history. the first taekwondo development martial arts training is understood to be around the first century on the peninsula of Korea over 2000 years ago. The word Taekwondo is related to the techniques of punching and kicking. As the word ‘Tae’ means foot related to kicking and the word ‘Kwon’ means fist is related to punching and the word ‘Do’ means way. If we put these parts together, we can see two important concepts behind Tae Kwon Do. Taekwondo is the right way of using fists and feet, or all parts of the body that are represented by fists and feet. It is a way to Control thus, Taekwondo means the right way to control all parts of the body to stop fights and help to build a better and more peaceful world. The most popular form of Taekwondo, World Taekwondo (WT) is also an Olympic sport. Originally, the Korean martial art was primarily used for demonstration (1988 Seoul Olympics and 1992 Barcelona Olympics), then became fully integrated into the Olympic circuit from the 2000 Sydney. Anthropometry is the science of obtaining systematic measurements of the human body. anthropometry first developed in the 19<sup>th</sup> century as a method employed by physical anthropologists for the study of human variation and evolution in both living and extinct populations. in particular, such anthropometric measurements have been used historically as a means to associate racial, cultural, and psychological attributes with physical properties. specifically, anthropomorphic measurements involve the size (e.g., height, weight, surface area, and volume), structure (e.g., sitting vs. standing height, shoulder and hip width, arm/leg length, and neck circumference), and composition (e.g., percentage of body fat, water content, and lean body mass) of humans.

### **Objective of the study**

Objective of the Study was Examining the *“A Comparison of Leg Length Among Indian Taekwondo Players”*.

### **Delimitation of the study**

- ❖ The Study is delimited to the total 90 Indian male taekwondo players only.
- ❖ This Study is delimited to the State, National, and Inter-national level Taekwondo players.
- ❖ The age of the subjects should be 17-30 years.
- ❖ This Study is delimited to selected Anthropometrical Leg Length variable.

### **Limitations of the study**

- ❖ Certain factors like geographic conditions, training, facilities, diet, daily routine habits, responses of respondents for standard Anthropometrical measurement etc. that would have affected the results of the study, so it was considered as the limitations of the studies.

### **Significance of the study**

The significance of the study, research contributes to a deeper understanding of Leg Length across different competitive levels—State, National, and International Taekwondo Players.

- ❖ The study may assist in designing effective training programs.
- ❖ This study holds significant value in advancing the understanding of Leg Length, within the context of competitive sports, particularly among taekwondo athletes.
- ❖ This study provides a foundation for implementing necessary interventions to address anthropometrical gaps.

### **METHODOLOGY**

#### **Selection of Subjects**

For the study Ninety (90) Male State, National, International Taekwondo players were randomly Selected as a Subjects from the various Sports Stadiums, Taekwondo Academies. The age group of the Subjects from 17-30 Years. These were divided in three Groups i.e. State-30, National-30 and International-30 Level Male Taekwondo Players.

#### **selection of variable**

for the objectives of Study, the Researcher Selected Leg Length as Anthropometrical Variable.

#### **Criterion measure**

The Anthropometrical Scale, Leg Length was taken with the flexible steel tape from the greater trochanter to the floor and was recorded to the nearest half centimetre

#### **Statistical Procedure**

A Descriptive statistic was applied for the design Anthropometrical profile of Taekwondo players on Leg Length. A one-way analysis of variance (ANOVA) was used for the results, to Compare selected Anthropometrical variable of State, National and International Taekwondo players. All the statistical procedure done by SPSS and Excel software.

#### **Results and Findings**

The Statistical analysis of the data on Leg Length of Different level Taekwondo players has been Presented below:

**Table 1.1: Descriptive Analysis of Leg Length**

Variable	Groups	Sample (N)	Mean (M)	Std. Deviation (SD)
Leg Length	State	30	91.93	10.53
	National	30	97	6.39
	International	30	97.66	9.78
	<b>Total</b>	<b>90</b>	<b>95.53</b>	<b>9.34</b>

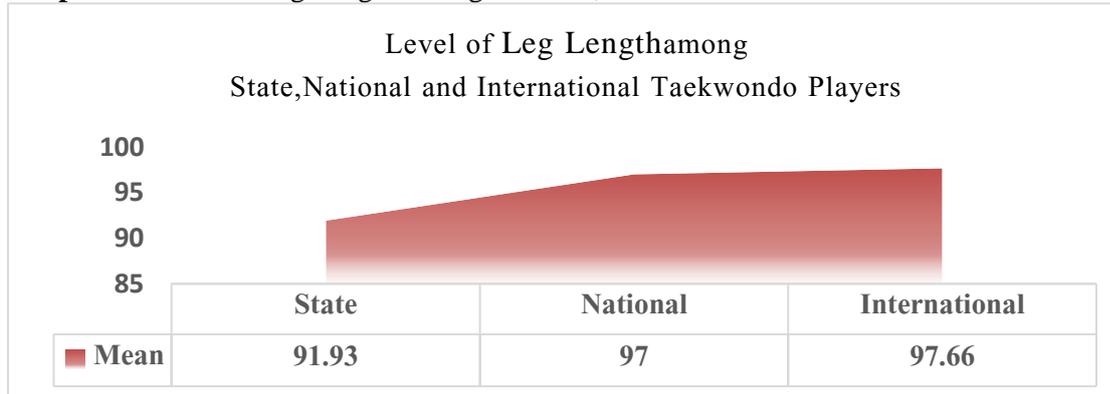
**Table 1.1:** Shows the Mean Score of State, National and International Players were Respectively 91.93, 97 and 97.66 where the Standard Deviation Value was Respectively 10.53, 6.39 and 9.78. The overall Mean score of Leg Length was 95.53 and the Standard deviation value was 9.34

**Table 1.2: ANOVA Summary of Leg Length**

Source of variance	Degree of Freedom (d f)	Sum of Squares (SS)	Mean of square (MS)	F- value	Significant
Between Groups	2	589.867	294.933	<b>3.574</b>	<.032
Within Group	87	7178.533	82.512		
Total	<b>89</b>	<b>7768.400</b>			

**Table 1.2:** Shows the Calculated value of F-ratio (3.574). Is more than Tabulated value of F-ratio (3.10). That Means, there was a Significance differences among State level, National level and international level Taekwondo players on Leg Length [F tab (2,87) = 3.10, p<.05].

**Graph 1.1:** Level of Leg Length among the State, National and International Taekwondo Players.



**Graph 1.1:** Shows that Mean Score of State, National and International level Taekwondo players were 91.93, 97 and 97.66.

### Findings

The findings, this research study highlights a significant relationship between the level of Taekwondo players and their Leg Length. The findings reveal notable differences in overall Leg length Scores across competitive levels. Specifically, the mean Leg length scores were: According to the results the mean score is State Level 91.93, National Level 97 and international level 97.66. These results indicate that international-level Taekwondo players possess high Leg length compared to their national and state-level players and there is minor deference between international and national level taekwondo players.

### Discussion

Leg length and pelvic flexion are critical anthropometric components that strongly support the successful execution of basic kicking techniques in Taekwondo. Longer legs provide greater reach and leverage, allowing athletes to strike effectively from a distance, while pelvic flexion enhances mobility and range of motion in the lower body. Together, these factors contribute to improved accuracy, speed, and efficiency in fundamental kicks, making them essential determinants of performance in competitive Taekwondo. (Earle F. Ziegler, 1970). Research suggests that international-level athletes tend to demonstrate higher levels of Leg length. after the discussion, the study found significant differences in Leg length among male Indian Taekwondo players at the state, national, and international levels. International-level athletes exhibited notably high Leg length compared to national and state-level player, highlighting the anthropometrical edge that may contribute to their competitive success. anthropometric measurements of an individual player play a dominant role in high level sport performance.

### Conclusion

The study concludes that there are significant differences in leg length among male Taekwondo players at the state, national, and international levels. The mean scores indicate that international-level athletes possess greater leg length, which is strongly associated with higher performance outcomes. Longer legs provide a distinct advantage in Taekwondo by enabling athletes to strike opponents from a greater distance, thereby reducing the risk of counterattacks. This finding aligns with broader research on anthropometric characteristics in sports performance. For example, Saal et al. (2022) proposed that such physical attributes can be used to predict success in canoeing. In Taekwondo, where the sport relies heavily on lower-body techniques, leg length emerges as a critical factor. Athletes with longer legs can more easily execute head-level kicks and score points with less effort compared to those with shorter legs. The final Conclusion, International-level Taekwondo players demonstrate significantly higher leg length, which contributes to their superior performance and competitive success.



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