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**Research Article**

# Prediction of selected anthropometric parameters on straid length performance for college level men short and long distance runners

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## Abstract

In this study totally 30 athletes were selected randomly from Pondicherry University who are all participated intercollegiate athletic tournament in short and long distance events, in this 15 athletes from short distance and 15 from long distance runners. Their age ranged from 17 to 28 years as per their university records, variables were restricted for this study anthropometric parameters such as Mid -thigh girth, calf mid girth, leg length, BMI as well straid length performance. Collection of data: (Straid length) before starting data collection 400 mts track were divided in to 5 half, then selected subjects were taken sufficient time before starting data collection for getting warming up them self-it's for avoiding injuries as well minimize data error, after that they were commended to run 400mts running then researcher has taken random data from each half and converted mean value for analyse data. Statistics: collected data were used for analyse relationship between anthropometric parameters and straid length Pearson product moment co-relation were used with 0.05 significance level. Results: Long distance runners in this there is positive Relationship between Mid- Thigh Girth and Straid Length Performances as well Calf Girth and Straid Length Performances. But there is no relationship between Leg Length and Straid Length Performance as well Body Mass Index and Straid Length Performance. Short distance runners in this there is positive Relationship between Mid- Thigh Girth and Straid Length Performances, Calf Girth and Straid Length Performances as well BMI and Straid Length Performances. But there is no relationship between Leg Length and Straid Length Performance.

**Keywords:** Mid -thigh girth, Calf mid girth, Leg length, BMI and Straid length.

## 1. Introduction

Now a days every sports and games achievement as well application of skills based on concern sports as well techniques likewise number of things we require to achieve world level sports and games competitions. Human body is naturally aligned with anthropometric measurement functional parts such as Leg length, Mid-thigh Girth, BMI, Sitting height, Feet length and so on[1]., from this we can consider required measurements, physical and physiological performances may lead to show their maximum better performances in their chosen games/ sports. Throughout world every countries implementing number of ways/ techniques to enhance their countries athletes' performance. In that way anthropometric parameters also playing important role to categorize and identification of sports personalities through this application [2]. Moreover recent days peoples were suffering from variety of diseases because lack of physical activity, over eating, using hybrid agriculture and eating that, eating fast food items, obesity, diabetes and so on., this also may be a reason now physical education and sports playing vital role in each and every human's life[3]. So for this anthropometric measurement will help who are all wish to engage physical activity through sports and games based on our natural anthropometric body alignments [4,5]. In this modern world sports and game are more challenging not only sports participants as well coaches, that way all the sports coaches engaging to implement new kind of techniques, skill trainings and selection process of an athlete's[6,7]. Hence this kind of scientific approach outcome is generating more expectation and aspiration among this society from selected athletes for full filling this expectation from the beginning itself we have to use scientific methods of selection procedure for identifying talented athletes, adopting training methods and skill training and so on.

**1.1 Objective:** In this study conducted to examine the relationship of selected anthropometric parameters

such as Leg Length, Mid-Thigh Girth, Calf Girth and BMI to Straid Length performance for college level men short and long distance runners.

### 1.2 Hypothesis

There would be a positive relationship between selected anthropometric parameters and straid length performance on short distance and long distance runners.

## 2. Methodology

In this investigation from Podicherry University totally 30 athletes were selected randomly who are all participated intercollegiate athletic tournament in short and long distance events, in that 15 athletes short distance and 15 long distance runners. Their age ranged from 17 to 28 years as per their records, for this inquiry following anthropometric variables were restricted such as Mid-thigh girth, calf mid girth, leg length, BMI as well straid length performance. Collection of data: (Straid length) before starting data collection 400 mts track were divided in to 5 half, then selected subjects had taken sufficient time before starting data collection for getting warming up them self-it's for avoiding injuries as well minimize data error, after that they were commended to run 400mts running then researcher has taken straid length () random data from each half and converted mean value for analyse data. Statistics: collected data were used for analysed relationship between anthropometric parameters and straid length Pearson product moment co-relation for long and short distance runners were used with 0.05 significance level.

## 3. Results and Observation

**Table 1: The table showing the results of mean and standard deviation values for all anthropometric parameters and straid length performances of college level men long distance runners**

| Variables | Mean | Std. Deviation | N |
|---|---|---|---|
| Leg length | 1.044 | 0.25729 | 15 |
| Mid thigh girth | 0.492 | 0.15461 | 15 |
| Calf girth | 0.3407 | 0.02987 | 15 |
| Straid length | 1.3275 | 0.12524 | 15 |
| BMI | 21.9487 | 1.98703 | 15 |

The above table showing mean and standard deviation of anthropometric and Straid length performance such as the leg length mean value is 1.044 and SD is 0.25729, Mid-Thigh Girth is 0.492 and 0.15461, Calf Girth is 0.3407and 0.02987, BMI value is 21.9487 and 1.98703, Straid Length value is 1.3275 and 0.12524.

**Table 2: The table showing the results of relationship among all anthropometric parameters and straid length performances of college level men long distance runners**

| | | Leg length | Thigh grith | Calf | Straid length | BMI |
|---|---|---|---|---|---|---|
| Leg length | Pearson Correlation | 1 | -0.097 | 0.146 | -0.157 | -0.205 |
| | Sig. (2-tailed) | | 0.731 | 0.602 | 0.576 | 0.464 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Mid thigh grith | Pearson Correlation | -0.097 | 1 | 0.764* | 0.370 | -0.440 |
| | Sig. (2-tailed) | 0.731 | | 0.001 | 0.175 | 0.101 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Calf grith | Pearson Correlation | 0.146 | 0.764* | 1 | 0.194 | -0.203 |
| | Sig. (2-tailed) | 0.602 | 0.001 | | 0.489 | 0.469 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Straid length | Pearson Correlation | -0.157 | 0.370 | 0.194 | 1 | -0.592* |
| | Sig. (2-tailed) | 0.576 | 0.175 | 0.489 | | 0.020 |
| | N | 15 | 15 | 15 | 15 | 15 |
| BMI | Pearson Correlation | -0.205 | -0.440 | -0.203 | -0.592* | 1 |
| | Sig. (2-tailed) | 0.464 | 0.101 | 0.469 | 0.020 | |
| | N | 15 | 15 | 15 | 15 | 15 |
| *. Correlation is significant at the 0.05level (2-tailed). | | | | | | |

The above table showing relationship among selected variables like-wise co-relation -0.097 value showing negative very low co-relation between leg length and mid-thigh girth, and 0.764 is showing positive high co-relation between Mid-thigh and Calf girth, -0.203 is showing negative low co-relation between Calf girth and Body Mass Index. As per above table there is -0.157 showing very low negative co-relation between Leg length and Straid Length, 0.370 showing there is positive low co-relation between Mid- Thigh Girth and Straid length, 0.194 showing there is very low positive co-relation between Calf Girth and Straid length, -0.592 showing there is moderate negative co-relation between Body Mass Index and Straid Length Performance.

**Figure 1: The diagram showing the results of mean values for all anthropometric variables and straid length performances of college level men long distance runners**

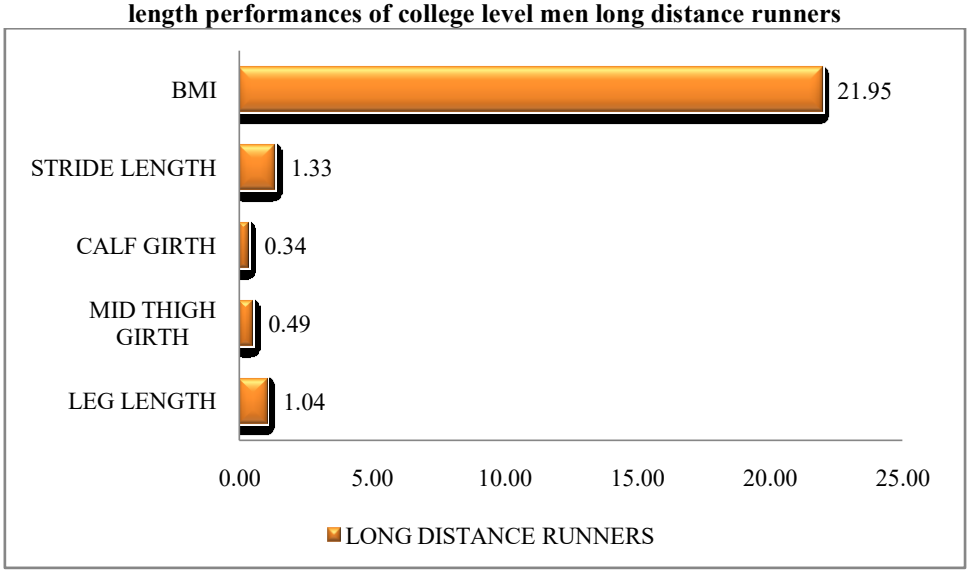



**Table 3: The table showing the results of mean and standard deviation values for all anthropometric parameters and straid length performances of college level men middle distance runners**

| Variables | Mean | Std. Deviation | N |
|---|---|---|---|
| Leg length | 1.0520 | 0.15821 | 15 |
| Mid thigh girth | 0.4827 | 0.04636 | 15 |
| Calf girth | 0.3427 | 0.02434 | 15 |
| Straid length | 1.7369 | 0.10256 | 15 |
| BMI | 21.4967 | 1.86343 | 15 |

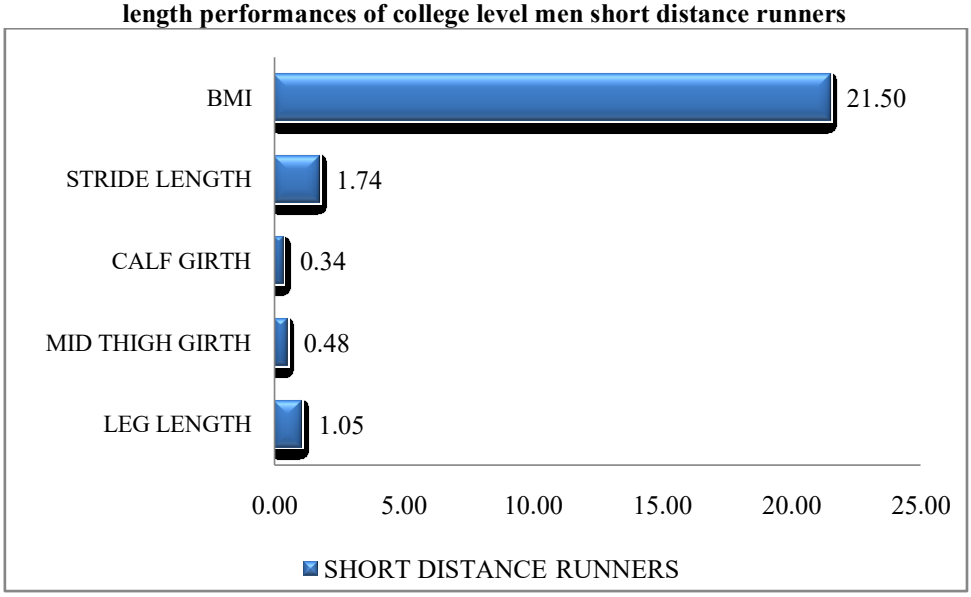
The above table showing mean and standard deviation of anthropometric and Straid length performance such as the leg length mean value is 1.0520 and SD is 0.15821, Mid-Thigh Girth is 0.4827 and 0. 04636, Calf Girth is 0.3427and 0.02434, BMI value is 21.4967 and 1.86343, Straid Length value is 1.7369 and 0.10256.

**Table 4: The table showing the results of relationship among all anthropometric parameters and straid length performances of college level men short distance runners**

| | | Leg length | Thigh grith | Calf | Straid length | BMI |
|---|---|---|---|---|---|---|
| Leg length | Pearson Correlation | 1 | -0.026 | -0.417 | -0.196 | -0.391 |
| | Sig. (2-tailed) | | 0.926 | 0.122 | 0.484 | 0.149 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Mid thigh grith | Pearson Correlation | -0.026 | 1 | 0.310 | 0.435 | 0.576* |
| | Sig. (2-tailed) | 0.926 | | 0.261 | 0.105 | 0.025 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Calf grith | Pearson Correlation | -0.417 | 0.310 | 1 | 0.068 | 0.585* |
| | Sig. (2-tailed) | 0.122 | 0.261 | | 0.809 | 0.022 |
| | N | 15 | 15 | 15 | 15 | 15 |
| Straid length | Pearson Correlation | -0.196 | 0.435 | 0.068 | 1 | 0.153 |
| | Sig. (2-tailed) | 0.484 | 0.105 | 0.809 | | 0.586 |
| | N | 15 | 15 | 15 | 15 | 15 |
| BMI | Pearson Correlation | -0.391 | 0.576* | 0.585* | 0.153 | 1 |
| | Sig. (2-tailed) | 0.149 | 0.025 | 0.022 | 0.586 | |
| | N | 15 | 15 | 15 | 15 | 15 |
| *. Correlation is significant at the 0.05 level (2-tailed). | | | | | | |

The above table presenting relationship among selected variables like-wise co-relation -0.026 value showing negative very low co-relation between leg length and mid-thigh girth, and 0.310 is showing positive low co-relation between Mid-thigh and Calf girth, 0.585 is showing positive moderate co-relation between Calf girth and Body Mass Index. As per above table there is -0.196 showing very low negative co-relation between Leg length and Straid Length, 0.435 showing there is positive moderate co-relation between Mid-Thigh Girth and Straid length, 0.068 showing there is very low positive co-relation between Calf Girth and Straid length, 0.153 showing there is very low positive co-relation between Body Mass Index and Straid Length Performance.

**Figure 2: The diagram showing the results of mean values for all anthropometric variables and straid length performances of college level men short distance runners**




## 4. Conclusion

Straid length is more essential one for all running athletes because which are the athletes are having good straid length they can reach their fixed target as soon as possible through reducing number of straid length and less amount of energy spending for given athletic/games, which may lead you to reach your goal/ performance with spending less energy, in that way researcher were drawn following conclusion.

### 4.1 Long Distance Runners

In this research results revealed that the selected anthropometric variables such as Leg Length, Mid -Thigh Girth, Calf Girth and Body Mass Index in this there is positive Relationship between Mid- Thigh Girth and Straid Length Performances as well Calf Girth and Straid Length Performances. But there is no relationship between Leg Length and Straid Length Performance as well Body Mass Index and Straid Length Performance hence this results shows Mid-thigh Girth and Calf Girth may influence the Straid Length Performances among Pondicherry university men long distance Runners.

### 4.2 Short Distance Runners

In this investigation results discovered that the selected anthropometric variables such as Leg Length, Mid-Thigh Girth, Calf Girth and Body Mass Index in this there is positive Relationship between Mid- Thigh Girth and Straid Length Performances, Calf Girth and Straid Length Performances as well BMI and Straid Length Performances. But there is no relationship between Leg Length and Straid Length Performance hence this results shows Mid-thigh Girth, Calf Girth and BMI may influence the Straid Length Performances among Pondicherry university men Middle Distance Runners.

## 5. Recommendation

In this study will helpful for all coaches and athletes who are all involving with running sports and games. Because this research may useful for choosing the athletes and players based on their above said anthropometric parameters, moreover with help of straid length performance also we can categorise athletes and players [8]. In developed countries anthropometric specification is more essential for choosing players based on games and sports as well playing position it will leads to reach our success through using scientific methods of training to all games and sports.

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