

## Sexual Dimorphism of Height in Adults of South Indian Population

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### Abstract

68 males and 82 females of adult aged between 20-35 years were measured in cms. The mean value of male height was 170.2 (SD  $\pm$ 7.0) and mean value of female height was 155.6 (SD  $\pm$ 5.9) and 't' test value was 13.7 which has highly significant P value ( $p < 0.01$ ). The difference of height between both sexes were 14.6 cms. This difference was also more or less in agreement with previous workers. This difference of height certainly indicates the evolutionary process of the latest generation of day to day population because evolution is not a force but a process not a cause but a law of nature. More over these obtained results will be useful to the Anatomists, Anthropologists and medical experts as this study belongs to South Indian population. As race of homosapine is an on going. Moreover South Indian population are presumed as mainly Dravidians.

**Keywords:** Sexual Dimorphism; South India; Measurement; Adults.

### Introduction

Parameter of the individual height is one of the criteria for the indication of identity in the society which plays a vital role in both socio economic life. In human society the social status of the sexes is greatly influenced by the physical difference existing between them. The most important differences are height and physical strength. The great physical power and height of the male are the factors which differentiates from females.

Much height shows it is Gigantism or less shows dwarfism. Hence it is mandatory to know the normal height in both sexes but it differs regionally and racially. In medico legal cases also the height in both sexes are measured by length [1] of long bones like Femur, Tibia, but it is a dictum that males are taller

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than females, but the difference between the height of male and female also varies regionally due to drifting of population for survival, there is mixing of different racial groups but many or most of the members of population are able to adapt the environment well enough to survive and have offspring regardless of small differences in genotype within the groups. Hence attempt is made to measure the height in both the sexes in adults and difference is also noted.

### Material and Method

68 males and 82 females aged between 20-35 years who were healthy and well built stature were selected for study who were attending their relative patients admitted at AIMS BG Nagara - 571448. Mandya district and their height was measured in centimetres and studied statistically.

### Observation and Result

Table 1- In 68 males mean value was 170.2 (SD  $\pm$ 7.0) and in 82 females mean value was 155.6 (SD  $\pm$  5.9) and 't' value was 13.7 which was highly significant statistically ( $P < 0.01$ ).

Table 2- The present study is compared with previous workers of different country.

Table 1:

Particulars	No of subjects	Mean	T value	P value
Male	68	170.2 (SD +_ 7.01)	13.7	P <0.01
Female	82	155.6 (SD +_ 5.9)		

Statistically highly significant P value (.P < .01).

Table 2:

Name of worker	Year	Country	Height of male in CMS	Height of female in CMS	Difference in CMS
Krzyanowska.M	2002	Poland	180CMS ((SD +_ 6.2)	166.5 (SD +_ 5.9)	14.5
Boguslaw Powloski	2003	Poland	180 (SD +_ 3.2)	163 (SD +_2.3)	17
Mamdi RS & Kulkarni B etal	2011	North India	165 (SD +_ 2.1)	152 (SD +_ 2.1)	13
Masjid ezzati etal	2016	South korea	182.5 (SD +_ 1.3)	174.8 (SD+ 3.2)	18
Daniel Netter	2002	Britain	177 (SD +_ 2.1)	162 (SD + 1.8)	15
Murali Krishna	2014	Tamil nadu (India)	165	152	13
present study	2017	South India (Karnataka)	170.2	155.6	14.6

## Discussion

In the present study, mean value of height of male was 170.2 (SD±7.02) and mean value of height of female was 155.6cms (SD±5.9) and 't' test value was 13.7 which was highly significant (Table 1) (P < .01 >) statistically and the difference between the height of male and female was 15.6 cms and this difference was compared with previous studies of India and abroad and more or less they are in agreement with the present study (Table 2). This difference of male and female is globally noted. The more height for male necessary to have strong genetic companion and robust companion [2]. Moreover height is a polygenic trait, reflecting the combined influence of multiple as yet undiscovered genetic factors which is more dominant in males than females [3]. The pattern of sexual genotype may remain unaltered but effects exercised by new environment. Its physiological expression undergoes modification without changing basic pattern of genotypic characters [4]. It was also hypothesised that difference in height of both sexes are due to developmental traits which are associated with sex are due to (a). Sex linked (b). Sex influenced (c). Sex limited factors [5].

The difference between height of male and female (Table 2) of different countries certainly indicates that our species have adopted constantly changing condition as "selection flavoured plasticity".

Because environment may be suppressive or stimulative like unfavourable and favourable environment [7]. Such as variation in temperature, humidity, barometric pressure, number and kinds of particles in the air, solar and cosmic radiation, food, water, mineral content of soil that are embraced in

the terms social and economic Condition [8]. As the difference between height of tall male and female certainly exists but not all the men are brilliant, intelligent nor all small women are stupid and ugly [9] because all the characters of living organisms are affected by their DNA, since it controls the enzymes by which many genes vary continuously between individuals. Thus height of male and females affected [8]. In fact height of the man followed by erect posture is due to response of functional need. It is proposed that, erect posture, expansion of brain and skull and loss of body hair to the results of rapid reaction to Iodine deficiency [10].

## Summary and Conclusion

The present study of sexual dimorphism of height in adults of South Indian population is useful to Anthropologists, Anatomists and medico legal experts. This study demands further studies to rule out whether this variation caused by environment or it merely the expression of diverse hereditary tendencies or body size is due to nutritional or brought about by climatic causes because which are the genes and their genetic signalling pathway influenced by nutrition or climatic or both is still unclear.

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