

Original article:

Correlation between body height and vertex to pubis symphysis length

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ABSTRACT:

The present study was carried out on the measurement of vertex to pubis symphysis length and body height of total 135 students between 19 to 22 years of age. The study was carried out in department of forensic medicine and toxicology at PDVVPF'S medical college Ahmednagar Maharashtra India. A total no. of 135 (67 males 68 females) medical students included in this study. Anthropometric measurements were taken with the help of anthropometric instrument. obtained data was analysed and attempt was made to find out co-relationship and derive a regression equation between vertex to pubic symphysis length and body height. The co-relation is statistically highly significant. The present study would be useful for anthropologist and forensic medicine experts

KEYWORDS: Anthropometry , Vertex to pubis symphysis length

INTRODUCTION

In the present day of crime and violence it is often necessary to identified dismembered bodies. Several parameters are available for this process of identification, but a relatively important one is to assess the height of the deceased individual. The height of an individual is also related to the cause of death(1). Body growth is a vital process and is measured by measuring the height of a person, which itself is a sum of length of certain bones and appendages of the body(2). It presents certain relationship in form of proportion to the total stature. This relationship is used anthropologically to find the racial differences and also medico legally when only parts of the deceased body is available(3). The height can approximately ascertained by measuring the length from vertex to pubis symphysis. It is measured from highest point i.e. from vertex to pubis symphysis and this measurement is usually considered to be half of the total height(3)

AIMS AND OBJECTIVES:-

The present study was conducted to obtain the relation between the stature and length between vertex to pubis symphysis by deriving the linear regression equation.

Materials and Methodology:-

Place : Department of forensic medicine of my parent college

Subject : 135 students(67 males and 68 females) from the age group of 18-22 years.

Method:

1) For measurement of total height, subject was made to stand erect without shoes in standard standing position and the distance from standing surface to the highest point on the head in the mid saggital plane was taken as the height

2) for measurement of vertex to pubis symphysis length,we maintain the same_position and distance between the vertex and upper border of pubis symphysis is measured.

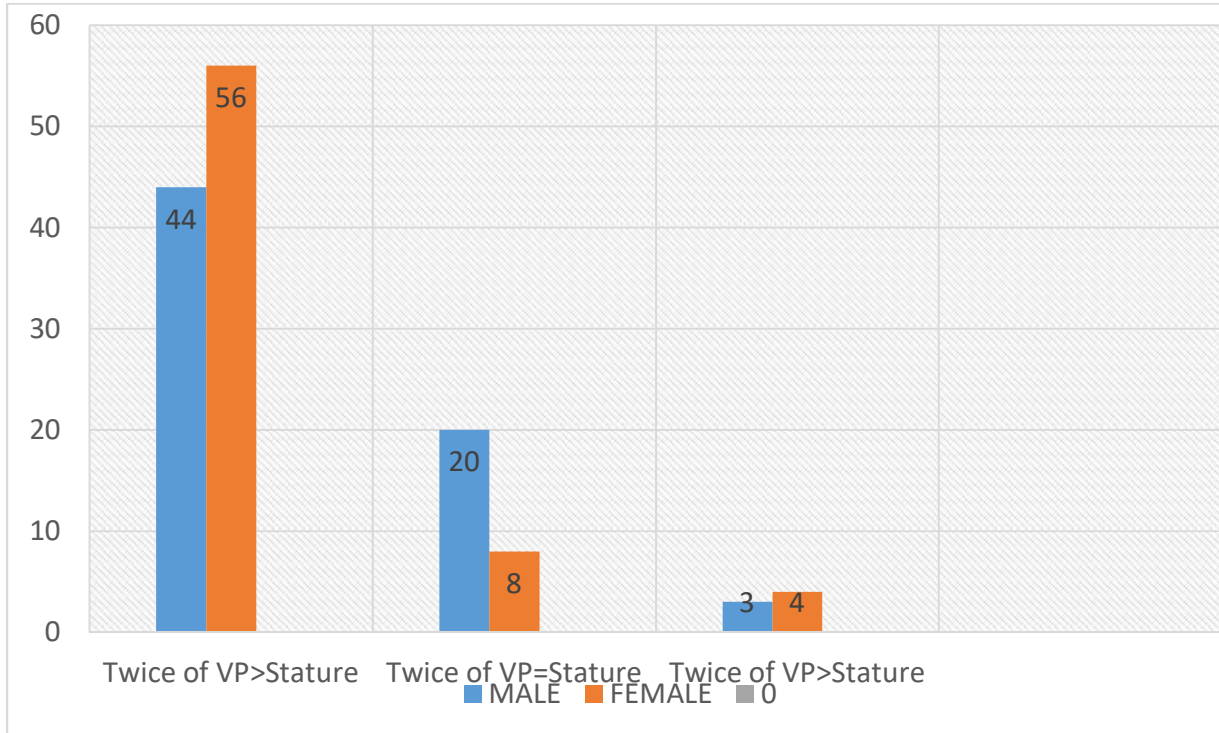
3)Regression equation is calculated for both the sexes

OBSERVATIONS:-

- The stature in males varied from varied from 161.0 to 193.0 cms,with mean value of 173.950 cms
- In females the range varied from 149.0 to 170.0 cms.,with mean value of 159.699 cms
- The vertex to pubis symphysis length in males varied from 74.0 to 94.0 cms with mean value of 84.320 cms
- In females the same range varied from 66.0 to 84.0 cms with mean value of 76.683 cms

	MALE(N=67)		FEMALE(N=68)
	No. of cases	Percentage(%)	No.of cases
Twice of vertex to pubis length>Stature	44	65.67	56
Twice of vertex to pubis length=Stature	20	29.85	8
Twice of vertex to pubis length<stature	3	4.47	4

Graphical Representation:



CALCULATIONS:-

The regression equation derived for stature reconstruction in males and females as under:

➤ **Males:**

$$S = 73.739 + 1.189 \times \text{V-P Length} + 4.148$$

$$r = 0.726$$

$$t = 8.518$$

➤ **Females:**

$$S = 90.259 + 0.906 \times \text{V-P Length} + 4.424$$

$$r = 0.577$$

$$t = 5.745$$

DISCUSSION:

Contrary to common belief that stature of an individual is twice of the length between vertex to pubis symphysis, it was observed that the twice of vertex to pubis length was more than that of the stature (3). Only in some cases the relation seems to be equal. In both the sexes, it is observed that the relation is true only for few of the cases. According

to some, after 14 years of age symphysis pubis lies halfway up the body. before 14 years trunk is longer than lower limbs.(3)

From the collected data and other observations, it is observed that in those subjects who are taller the length from pubis symphysis to heels is greater than the length from vertex to pubis symphysis while the shorter people have the same length in both cases. The positive value of "r" coefficient suggests that there exists a direct relationship between stature and V-P length with statistically significant value which is further substantiated by the value of 't'. i.e. test of significance

CONCLUSION:-

Stature of an individual is less than twice of vertex to pubis symphysis length

The stature of an individual by using independent regression equations for both sexes can be calculated accurately i.e. with standard error of ± 4.148 in males and ± 4.424 in females

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