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"RELATION BETWEEN MORPHOLOGICAL WIDTH OF MAXILLARY CENTRAL INCISORS AND THE WIDTH OF PHILTRUM IN YOUNG ADULTS OF GWALIOR REGION"

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ABSTRACT

Introduction: Anthropometry- the measurements of man-provides scientific methods and techniques for taking various measurements and observations on the living man and the skeleton. The Present study endeavor to give the special emphesis to the influence of 'sex factor' on the mesiodistal width of maxillary central incisors so as to establish their morphometric criterion and its significance in both males and females. The aim of this study to determine the relation between morphological width of maxillary central incisors and the width of philtrum and to determine the mesiodistal dimension of the right and left maxillary central incisors to establish the value for the same in young adult population. **Material and Methods:** 60 subjects, 30 males and 30 females in the age group of 17-21 years were selected. The measures of mesiodistal width of teeth and width of philtrum were taken by using a sliding Vernier caliper with resolution of 1/100th of cm. We measure the combined with of central maxillary incisors, width of right central maxillary incisors and width of left central maxillary incisors, we establish the relation between width of central maxillary incisor and width of philtrum, specially emphasizing and sexual dimorphism. **Results:** The two parameters i.e. the width of central maxillary incisor and width of philtrum were found to establish highly partial positive correlation. The coefficient of correlation between the width of philtrum and other parameters such as the combine width of central maxillary incisor, width of right maxillary central incisor and width of left central maxillary incisor was analyzed for male and female. The coefficient of correlation for male was found out to be +0.89, +0.95 and +0.88 respectively (p value <0.01, highly significant). For female coefficient of the correlation was found out to be +0.79, +0.72 and +0.665 respectively. While for the whole group the coefficient of the correlation was found to be +0.86, +0.86 and 0.80 respectively (p<0.01). **Conclusion:** The existence of a partial positive correlation between the two parameters, the width of maxillary central incisors and the width of philtrum has been establish in this study.

INTRODUCTION

Anthropometry- the measurements of man-provides scientific methods and techniques for taking various measurements and observations on the living man and the skeleton. In the context of bothmorphology, esthetics is defined as the theory and philosophy that deals with the beauty and beautiful especially with respect to the appearance of a restoration as achieved through form and color.[1] In selecting the artificial teeth for edentulous patients with virtue of esthetic appreciation has always been useful.[2]

Romer (1985) has observed that the dominant feature of numerous anterior dentitiions is the maxillary central incisor.[3]

Present study endeavor to give the special emphesis to the influence of 'sex factor' on the mesiodistal width of maxillary central incisors so as to establish their morphometric criterion and its significance in both males and females.

The variations is tooth form are a common occurrence in permanent dentition and these variations have an ethnic, forensic and anthropological significance.[4] This is of definite significance as the tooth morphology is known to be influenced by cultural, environmental and racial factors.[5]

It is expected that this study will be helpful to the subject of anatomy and forensic medicine in particular and science of dental anatomy of general.

The aim of this to determine the relation between morphological width of maxillary central incisors and the width of philtrum and to determine the mesio-distal dimension of right and left maxillary central incisors to

establish the values for the same in young adults population.

MATERIAL AND METHODS

60 subjects, 30 males and 30 females in the age group of 17-21 years were selected. The study was conducted on the undergraduate students of first year of Gajra Raja Medical College, Gwalior.

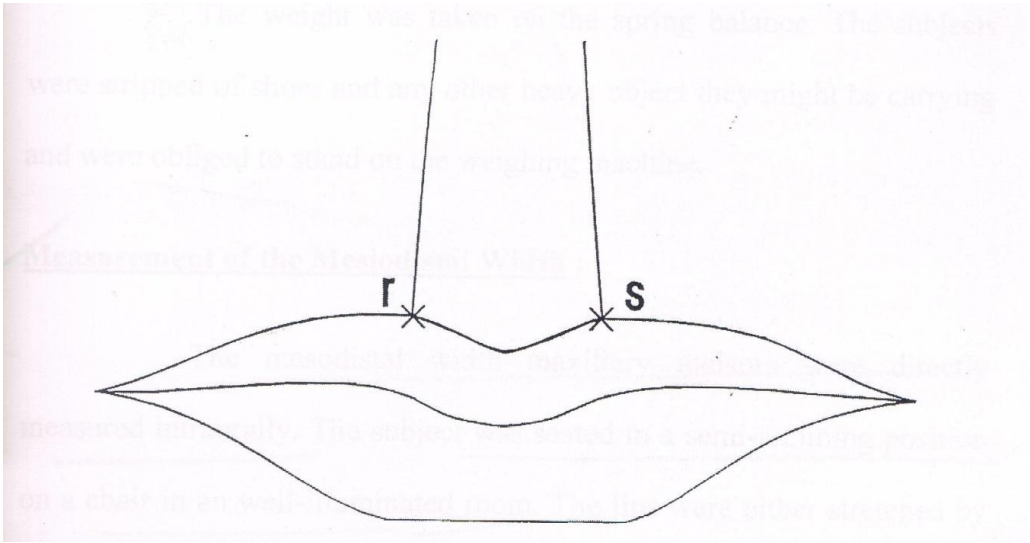
Inclusion criteria

- Healthy state of gingiva and periodontium.
- Caries free teeth
- Normal overjet and overbite
- Absence of spacing in the anterior teeth
- Normal molar and canine relationship

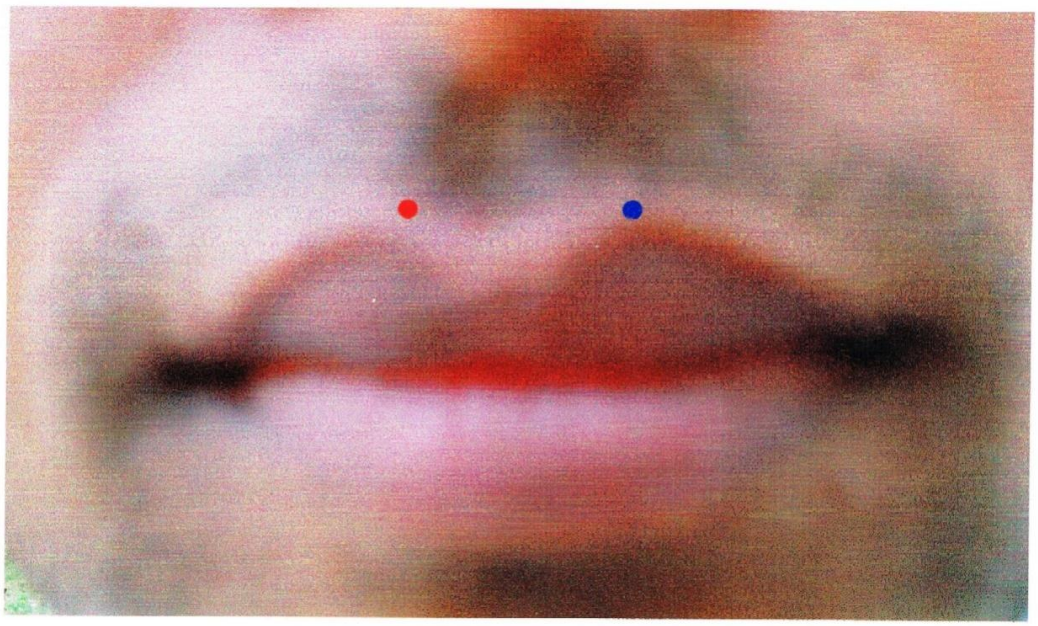
The measures of mesiodistal width of teeth and width of philtrum were taken by using a sliding Vernier caliper with resolution of $1/100^{th}$ of cm.

The width of the philtrum was directly measured on the face.

The mesiodistal which maxillary incisors were directly measured intraorally. Mesiodistal width was done on both right and left sides on maxillary incisors.

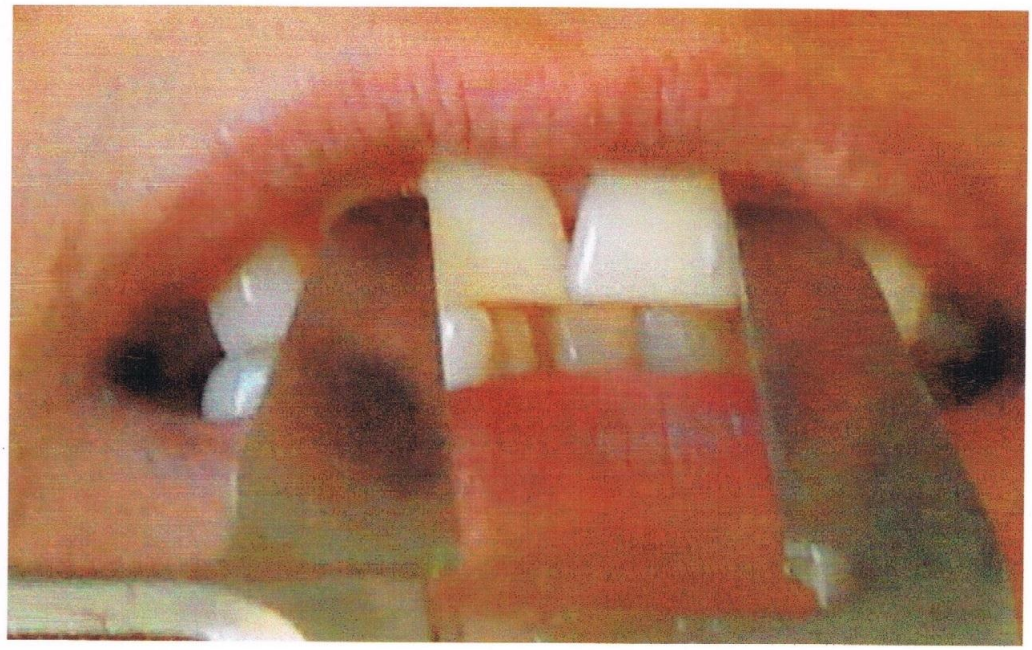


Measurment of philtrum

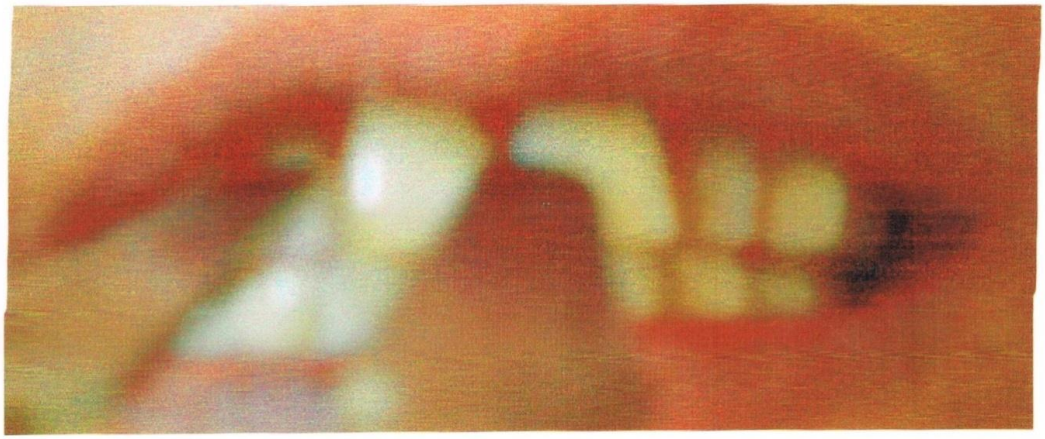


Two points marked at the base of philtrum

Measurment of combined width of central maxillary incisors



Measurment of width of left central maxillary incisor



Measurment of width of right central maxillary incisor

RESULTS

The present study was conducted on 60 subjects, 30 males and 30 females in the age group of 17-21 years. The data was computed, tabulated and statistically analyzed to establish the morphological relation and a special emphasis has been given in the study to sexual dimorphism.

Table 1: Age distribution of males and females selected for the study.

Age group (yrs)	Males		Females	
	No.	%	No.	%
17-18	16	53.33	15	50.0
18.1-19	6	20.0	3	10.0
19.1-20	2	6.67	7	23.33
20.1-21	6	20.0	5	16.67
Total	30	100.00	30	100.0
Range	17-21 years		17-21 years	
Mean±SD	18.55±1.50		18.76±1.46	
t & p value	T = 0.55, p > 0.05			
Significance	Not significant			

The mean±SD for males was 18.55±1.50 whereas for females it was 18.76±1.46.

Table 2: Statistical significance between width of maxillary central incisors and width of philtrum (Males)

Sr. No.	Combined width of maxillary central incisors greater than width of philtrum	No. of individuals	%
1	0.9-2.0	15	50
2	2.1-3.0	14	46.67
3	3.1-4.3	1	3.33
	Total	30	100
	Mean	2.162	
	± SD	±0.486	

Table 3: Statistical significance between width of maxillary central incisors and width of philtrum (Females)

Sr. No.	Combined width of maxillary central incisors greater than width of philtrum	No. of individuals	%
1	0.6-2.0	11	36.67
2	2.1-3.0	17	56.67
3	3.1-4.3	02	6.67
	Total	30	100
	Mean	2.176	
	± SD	±0.669	

Table 4: Range of combined width of maxillary central incisors and philtrum (Males and Females)

Parameters	Males	Females
Range of Combined width of Maxillary Central Incisors (mm)	15.68 – 19.48	14.78 – 18.58
Range of width of Philtrum (mm)	12.90 – 17.40	12.78 – 16.79

Table 5: Statistical significance of combined width of maxillary central incisors (Males and Females)

Sex	Mean	± SD	't'	'p'	Significance
Males	17.69	0.99			
			2.76	<0.05	High Significant
Females	16.99	0.98			

The combined width of maxillary central incisors in males and females was compared and it was found to be statistically highly significant (p<0.05).

Table No. 6 – Statistical significance of width of right maxillary central incisor in Male and Females

Sex	Mean	± SD	't'	'p'	Significance
Males	8.94	± 0.57	2.49	<0.02	Highly Significant
Females	8.61	± 0.44	2.49	<0.02	

The width of the right maxillary central incisor in males and females was compared and it was found to be statiscally highly significant.

Table No. 7 – Statistical significance of width of Left maxillary central incisor in Male and Females.

Sex	Mean	± SD	't'	'p'	Significance
Males	9.05	±0.57	3.34	<0.01	Highly Significant
Females	8.61	± 0.45	3.34	<0.01	

The width of the left maxillary central incisor in males and females was compared and it was found to be statiscally highly significant.

DISCUSSION

The philtrum was selected as a reference guide because it is considered to be one of the important facial landmarks in the restoration of esthetics (Cho and Baik, 2000).[6] The maxillary central incisors are esthetically important and occupy a strategic position being in front and center of the upper arch (Frush and Fischer, 1956).[7] It was contemplated that the determination of a correlation between the two parameters was highly desirable and likely to yield information of both clinical and academic significance.

In this study the two parameters i.e. the width of maxillary central incisors and the width of philtrum were found to exhibit a highly partial positive correlation. This implies that with the decrease in one parameter, the other also decreases and vice versa.

In the present study the coefficient of correlation between the width of philtrum and other parameters such as the combined width of maxillary central incisors was analyzed for males, females and the whole group. The coefficient of correlation for male was found out to be +0.89, +0.95 and +0.88 respectively (p value <0.01, highly significant). For female coefficient of the correlation was found out to be +0.79, +0.72 and +0.665 respectively. While for the whole group the coefficient of the correlation was found to be +0.86, +0.86 and 0.80 respectively (p<0.01)

In the present study the combined width of the maxillary central incisors was found to range from 15.68-19.48 mms for males and 14.78-18.58 mms for females. The width of the right central maxillary incisor was found to range from 7.62-9.90 mms for males and 7.68-9.32 mms for females. The width of the left maxillary central incisors was found to range from 7.70-9.98 mms for males and 7.60-9.66 mms for females.

In the present study the mean width of the right maxillary central incisors for male was found to be 8.944 mms and for females 8.613 mms. The mean value of the left maxillary central incisor was found out to be 9.056 mms for male sand 8.664 mm for females.

In the present study the combined width of the maxillary central incisors, the width of the right maxillary central incisor, and the width of the left maxillary central incisor were compared in males and females and the difference in each case was found to be statistically highly significant. The p value of 'p' came out to be p<0.05, p<0.02 and p<0.01 respectively.

CONCLUSION

The existence of a partial positive correlation between the two parameters, the width of maxillary central incisors and the width of philtrum has been establish in this study. As such when these two parameters are in harmonious coordination. It is bound to have a positive impact on the esthetic appearance. This physical attractiveness is known to have a statistically significant effect on self esteem and other measures of psychic well being as beauty is definitely not skin deep.

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