

SAMPLE WORK

Medical Dissertation

Introduction

The Study design is cross-sectional, observational study. The study is conducted in Ophthalmology Department, Lokmanya Tilak Municipal Medical College & General Hospital, Sion, Mumbai and duration of the study Jan 2016 to Dec 2016 (12 months). The sample size is 2000 Eyes of 1000 Subjects. All the analysis was carried out using SPSS 20.0 version. The results are presented in mean \pm SD and percentages. Correlation analysis is used to find the relationship between two or more variables. Regression analysis is used to find the association between independent variable and dependent variables. The p-value <0.05 was considered as significant.

Table 1: Distribution of males and females in each age group

Age group (years)	Gender		Total
	Males (n=570)	Females (n=430)	
	n (%)		
5-10	5 (0.9)	2 (0.5)	7 (0.7)
11-20	57 (10.0)	25 (5.8)	82 (8.2)
21-30	117 (20.5)	98 (22.8)	215 (21.5)
31-40	129 (22.6)	127 (29.5)	256 (25.6)
41-50	102 (17.9)	77 (17.9)	179 (17.9)
51-60	85 (14.9)	62 (14.4)	147 (14.7)
61-70	49 (8.6)	32 (7.4)	81 (8.1)
71-80	20 (3.5)	5 (1.2)	25 (2.5)
81-90	6 (1.1)	2 (0.5)	8 (0.8)
Total	570 (100.0)	430 (100.0)	1000 (100.0)

Table 1 reveals the distribution of males and females in each age group. Of total 1000 cases, 570 cases were males and 430 cases were females. Of 570 male cases, majority 22.6 percent were from the age group 31-40 years followed by 20.5 percent were from 21-30 years, 17.9 percent from 41-50 while least 0.9 percent from 5-10 years. When female cases are considered majority, 29.5 percent were from 31-40 years followed by 22.8 percent from 21-30 years, 17.9 percent from 41-50 and least 0.5 percent from 5-10 and 81-90 in each.

Figure 1: Bar chart for males and females in each age group

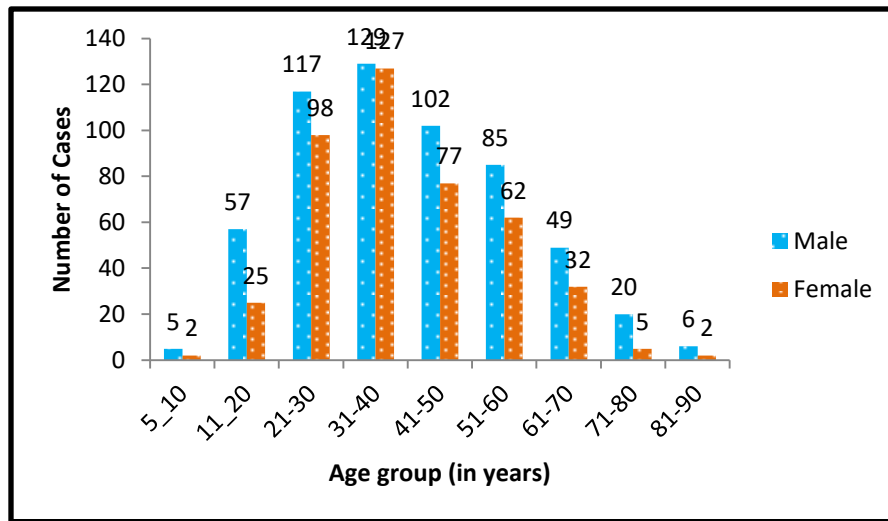


Table 2: Descriptive statistics for right and left exophthalmometric values for male and female

Exophthalmometric values	GENDER					
	Male (n=570)			Female (n=430)		
	Mean±2SD	Max	Min	Mean±2SD	Max	Min
Right eye (mm)	15.00±6.00	21	8	16.00±6.00	21	8
Left eye (mm)	15.00±6.00	21	8	16.00±6.00	21	3

Max- Maximum, Min-Minimum

Table 2 shows the descriptive statistics for right and left exophthalmometric values for male and female. The Right exophthalmometric value is high in female of mean±2SD 16.00±6.00mm with maximum 21mm and minimum 8mm, while in male has mean±2SD of 15.00±6.00mm with maximum 21mm and minimum 8mm. When considering the left eye, the exophthalmometric value is high in female of mean±2SD 16.00±6.00mm with maximum 21mm and minimum 3mm, while in male has mean±2SD of 15.00±6.00mm with maximum 21mm and minimum 8mm.

Table 3: Difference in mean right and left exophthalmometric values between male and female

Variables		Gender		P value
		Male (n=570)	Female (n=430)	
		Mean \pm 2SD		
Exophthalmometric values	Right eye	15.46 \pm 2.78	15.78 \pm 2.87	0.080
	Left eye	15.42 \pm 2.81	15.67 \pm 2.93	0.164

Table 3 shows the mean exophthalmometric values for the right eye and left eye separately for males and females. Since $P > 0.05$ for both right and left exophthalmometric values, there is no significant difference in mean exophthalmometric values between male and female. Mean exophthalmometric value for right eye 15.78 \pm 2.87mm was high in female population compared to 15.46 \pm 2.78mm in male population. Mean exophthalmometric value for left eye 15.67 \pm 2.93mm was high in female population compared to 15.42 \pm 2.81mm in male population.

Table 4: Mean exophthalmometric values for the right and left eye in both males and females for each age group

Age group (years)	Gender			
	Males (n=570)		Females (n=430)	
	Right eye (mm)	Left eye (mm)	Right eye (mm)	Left eye (mm)
	Mean \pm 2SD			
5-10	13 \pm 4	13 \pm 4	14 \pm 2	14 \pm 0
11-20	16 \pm 6	16 \pm 6	15 \pm 6	15 \pm 6
21-30	16 \pm 6	15 \pm 6	16 \pm 6	16 \pm 6
31-40	16 \pm 6	15 \pm 6	16 \pm 6	15 \pm 6
41-50	16 \pm 6	16 \pm 6	16 \pm 6	16 \pm 6
51-60	15 \pm 6	15 \pm 6	16 \pm 6	15 \pm 6
61-70	15 \pm 6	15 \pm 6	16 \pm 4	16 \pm 6
71-80	15 \pm 6	15 \pm 8	14 \pm 8	14 \pm 8
81-90	13 \pm 10	13 \pm 10	15 \pm 8	15 \pm 8

Table 4 shows the mean protrusion values for the right eye and left eye separately in males and females for different age groups. In a particular age group, the exophthalmometric values for both sexes were quite similar. The exophthalmometric values were lower in the first decade, increased in the second decade, and decreased again in the third to seventh decade. The

exophthalmometric values reached their peak in the fifth decade in both male and female and third to sixth decade in females. The lowest values in male were attained in the first and ninth decade.

Figure 2: 5th, 50th and 95th percentile distribution curves of normal exophthalmometric values in the right eye of males ranging in age from 5 – 90 years

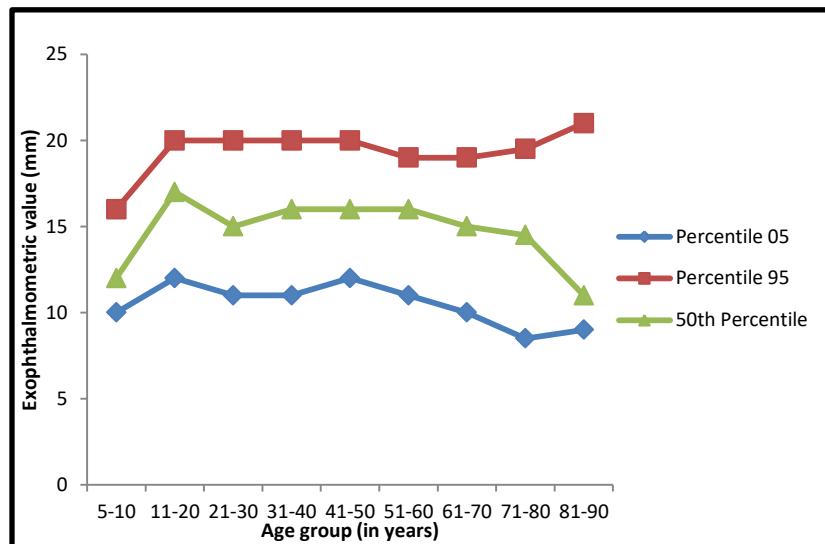


Figure 3: 5th, 50th and 95th percentile distribution curves of normal exophthalmometric values in the left eye of males ranging in age from 5 – 90 years

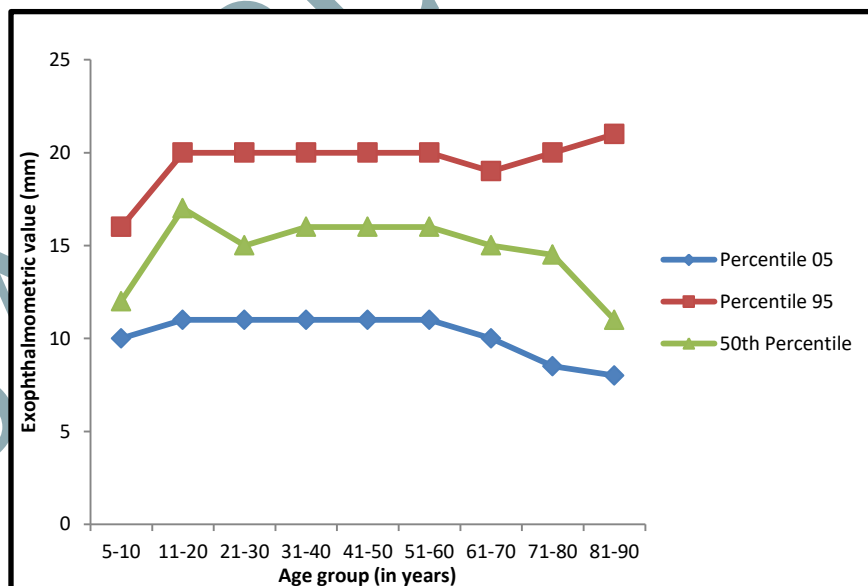


Figure 4: 5th, 50th and 95th percentile distribution curves of normal exophthalmometric values in the right eye of females ranging in age from 5 – 90 years

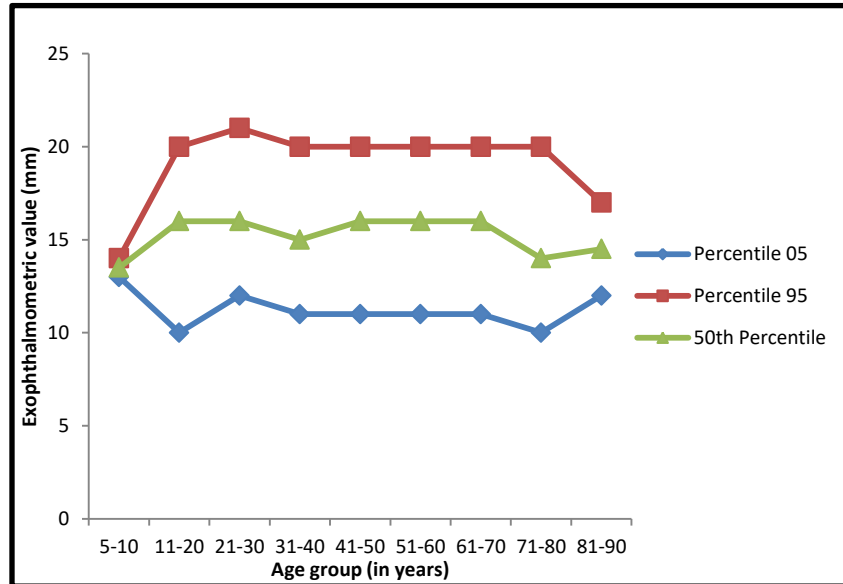


Figure 5: 5th, 50th and 95th percentile distribution curves of normal exophthalmometric values in the left eye of females ranging in age from 5 – 90 years

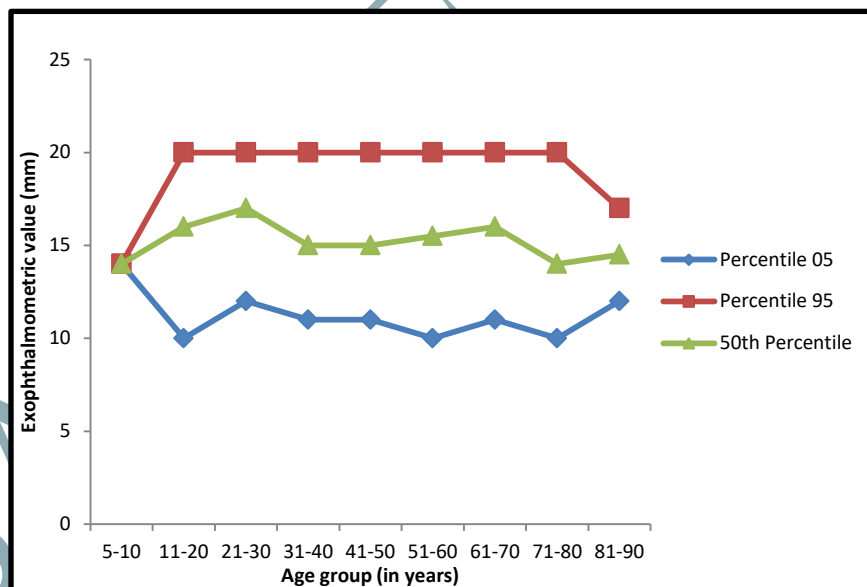


Table 5: Correlations between right eye exophthalmometric value and age, height, weight, Palpebral fissure width and height

Variables	Correlation Coefficient	P value
Age (years)	-0.070	0.026*
Height (Cm)	0.022	0.491
Weight (Kg)	-0.012	0.706
Palpebral fissure-width	0.088	P<0.001
Palpebral fissure-height	0.128	P<0.001

*P<0.05

Table 5 reveals the correlation between right eye exophthalmometric value and age, height, weight, Palpebral fissure-width and Palpebral fissure-height. Right eye exophthalmometric value had statistically significant negative correlation with age ($r=-0.070$, $P=0.026<0.05$). While right eye exophthalmometric value had statistically significant positive correlation with Palpebral fissure-width ($r=0.088$, $P<0.001$) and Palpebral fissure-height ($r=0.128$, $P<0.001$). Correlation value lies between -0.070 to 0.128 . Correlation value are positive means when Palpebral fissure-width and Palpebral fissure-height increases, right eye exophthalmometric value also increases and for negative correlation for age vice-versa.

Table 6: Correlations between left eye exophthalmometric values and age, height, weight, Palpebral fissure width and height

Variables	Correlation Coefficient	P value
Age (years)	-0.070	0.028*
Height (Cm)	0.014	0.667
Weight (Kg)	-0.012	0.712
Palpebral fissure-width	0.072	0.023*
Palpebral fissure-height	0.100	P<0.001

*P<0.05

Table 6 reveals the correlation between left eye exophthalmometric value and age, height, weight, Palpebral fissure-width and Palpebral fissure-height. Left eye exophthalmometric value had statistically significant negative correlation with age ($r=-0.070$, $P=0.028<0.05$). While left eye exophthalmometric value had statistically significant positive correlation with Palpebral fissure-width ($r=0.072$, $P=0.023<0.05$) and Palpebral fissure-height ($r=0.177$, $P<0.001$). Correlation value lies between -0.089 to 0.253 . Correlation values height ($r=0.100$, $P<0.001$). Correlation value lies between -0.070 to 0.100 . Correlation values are positive means when

Palpebral fissure-width and Palpebral fissure-height increases, left eye exophthalmometric value also increases and for negative correlation for age vice-versa.

Table 7: Correlations between right eye exophthalmometric values and age, height, weight, Palpebral fissure width and height by gender

Gender	Variables	Correlation Coefficient	P value
Male	Age (years)	-0.096	0.022*
	Height (Cm)	0.016	0.709
	Weight (Kg)	-0.055	0.190
	Palpebral fissure-width	0.064	0.126
	Palpebral fissure-height	0.141	P<0.001
Female	Age (years)	-0.028	0.556
	Height (Cm)	0.031	0.521
	Weight (Kg)	0.051	0.293
	Palpebral fissure-width	0.114	0.018*
	Palpebral fissure-height	0.101	0.036*

*P<0.05

Table 7 reveals the correlation between right eye exophthalmometric value and age, height, weight for male and female separately. In male, right eye exophthalmometric value had statistically significant negative correlation with age ($r=-0.096$, $P=0.022<0.05$) and positive correlation with Palpebral fissure-height ($r=0.141$, $P<0.001$). Correlation value lies between -0.096 to 0.141. Correlation value are positive means when Palpebral fissure-height increases, right eye exophthalmometric value also increases and for negative correlation for age vice-versa.

In female, right eye exophthalmometric value had statistically significant positive correlation with Palpebral fissure-width ($r=0.114$, $P=0.018<0.05$) and Palpebral fissure-height ($r=0.101$, $P=0.036<0.05$). Correlation value lies between 0.101 to 0.114. Correlation value is positive means when Palpebral fissure-width and Palpebral fissure-height increases, right eye exophthalmometric value also increases.

Table 8: Correlations between left eye exophthalmometric values and age, height, weight, Palpebral fissure width and height by gender

Gender	Variables	Correlation Coefficient	P value
Male	Age (years)	-0.082	0.051*
	Height (Cm)	0.014	0.739
	Weight (Kg)	-0.040	0.342
	Palpebral fissure-width	0.062	0.137

	Palpebral fissure-height	0.114	P<0.001
Female	Age (years)	-0.049	0.307
	Height (Cm)	0.013	0.795
	Weight (Kg)	0.029	0.543
	Palpebral fissure-width	0.081	0.094
	Palpebral fissure-height	0.077	0.109

*P<0.05

Table 8 reveals the correlation between left eye exophthalmometric value and age, height, weight for male and female separately. In male, left eye exophthalmometric value had statistically borderline significant negative correlation with age ($r=-0.082$, $P=0.051<0.05$) and positive correlation with Palpebral fissure-height ($r=0.114$, $P<0.001$). Correlation value lies between -0.082 to 0.114 . Correlation value are positive means when Palpebral fissure-height increases left eye exophthalmometric value also increases and for negative correlation for age vice-versa.

In female, there is no relationship between left eye exophthalmometric value and age, height, weight, Palpebral fissure width and height.

Table 9: Multiple regression of age and height on right eye exophthalmometric value

Variables	Regression Coefficient	95% Confidence Interval for Regression Coefficient	P value
Constant	12.311		
Age (years)	-0.015	-0.027 to -0.004	P<0.001
Height (Cm)	0.024	-0.007 to 0.054	0.128

Table 9 reveals the multiple regression of age and height on right eye exophthalmometric value. For every year decrease in age, right eye exophthalmometric value decreased by -0.015 mm (95% CI = -0.027 to -0.004) in right eye exophthalmometric value.

The Regression equation for right exophthalmometric values are:

$\text{Right exophthalmometric value} = 12.311 - 0.015 * \text{age} + 0.024 * \text{height}$
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Table 10: Multiple regression of age and height on left eye exophthalmometric value

Variables	Regression Coefficient	95% Confidence Interval for Regression Coefficient	P value
Constant	12.903		
Age (years)	-0.015	-0.027 to -0.003	P<0.001
Height (Cm)	0.019	-0.011 to 0.050	0.216

Table 10 reveals the multiple regression of age and height on left eye exophthalmometric value. For every year decrease in age, left eye exophthalmometric value decreased by -0.015 mm (95% CI = -0.027 to -0.003) in left eye exophthalmometric value.

The Regression equation for left exophthalmometric values are:

$$\text{Left exophthalmometric value} = 12.903 - 0.015 * \text{age} + 0.019 * \text{height}$$

SAMPLE WORK

End of the Sample Work



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