

Prevalence and Determining Factors of Refractive Errors among medical students in FMU, Faisalabad

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ABSTRACT

Aim: Prevalence and determining factors of refractive errors among the medical students in FMU, Faisalabad.

Methodology: Cross-sectional quantitative study conducted in Faisalabad Medical University from 01-03-2020 to 15-12-2020 after approval from institutional review committee. All students of MBBS in FMU were included in this study. A structured questionnaire was used to collect the required quantitative information. SPSS version 26 was used for analysis.

Results: Prevalence of refractive error is 49%. Females were 59% and males were 41%. More students i.e. 85.2% were suffering from myopia. In our study, usage of electronic devices i.e. mobile phones especially was one of the risk factors in developing refractive errors. 20.6% students having refractive error said that they use mobile phone for 4 hours, 30.2% having refractive error said that they watch TV for one hour, 23.3% having refractive error said that they play video games for one hour. For the correction of the refractive error, 184 students i.e. 97.4% used spectacles whereas only 5 (2.6%) students used contact lenses. It is observed in this study that contact lenses were only used by those students having refractive error <1.5.

Conclusion: Refractive errors were a significant cause of visual impairment among medical students. The prolonged use of electronic devices especially mobile phones should be discouraged.

Keywords: Refractive errors, myopia, electronic devices, mobile phone

INTRODUCTION

In developing countries, refractive errors are second cause of blindness. There has been seen a surge in the refractive error cases among medical students¹.

According to WHO, refractive errors are the first cause of visual impairment and second cause of visual loss worldwide i.e. 43% eye problems are associated with refractive errors².

Worldwide, 12.8 million people are affected by uncorrected refractive error having the age from 5 to 15 years; 27.1 million having the age from 16 to 39 years; 18.9 million people are in ages of 40 to 49 years and 90 million affected from the uncorrected refractive errors who are 50 years or more³.

The objective of the study was to determine factors of refractive errors among the medical students in Faisalabad Medical University, Faisalabad.

METHODOLOGY

This quantitative cross sectional study was carried out in Faisalabad Medical University. Ethical clearance was taken from ethical review committee of Faisalabad Medical University and Allied Hospital. Initially study was planned through questionnaire distribution in classes but due to Covid-19, method was shifted to online questionnaire. The sample was estimated at assume frequency of refractive error 50% with the absolute error of 10% it was calculated to be 386. Those students who are willing to take part in study are included in the study.

RESULTS

A total of 386 cases were included.

Table 1: Frequency of refractive errors

	n	%age
No	197	51%
Yes	189	49%
Total	386	100%

Table 2: Refractive errors with classes

MBBS	No	Yes	Total
1st year	42	35	77
2nd year	49	28	77
3rd year	36	41	77
4th year	35	43	78
Final year	35	42	77
Total	197	189	386

Table 3: Types of refractive errors

R. Errors	n	%age
Astigmatism	6	3.2
Hypermetropia	22	11.6
Myopia	161	85.2
Total	189	100.0

Table 4: Mode of correction of R. errors

	n	%age
Contact lens	5	2.6
Spectacles	184	97.4
Total	189	100.0

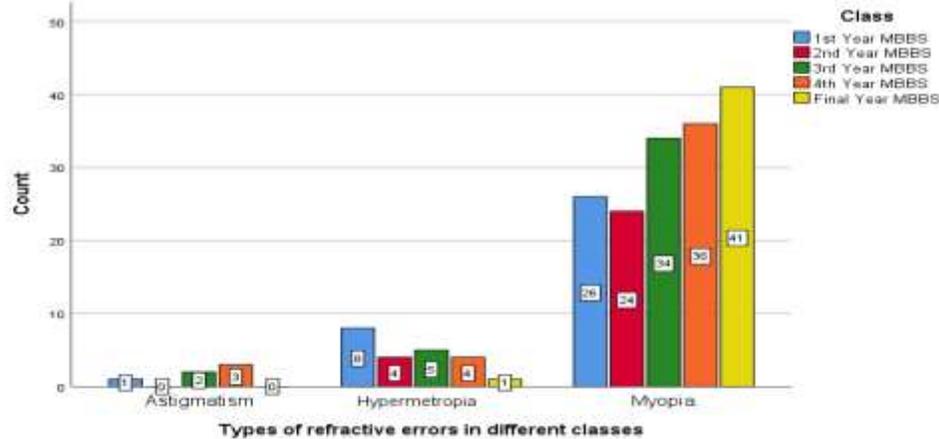
Table 5: Socio economic status of students

	n	%age
High level	87	46.0
Low level	01	0.5
Middle level	101	53.5
Total	189	100.0

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Fig 1: Types of refractive errors



DISCUSSION

In our study, we observed that 49% students had refractive errors and out of all, 85.2% were suffering from myopia, 11.6% hypermetropia and 3.2% had astigmatism. These are supported by the study conducted in medical students in Singapore and incidence of myopia to be >82% as compared to other refractive errors⁴. Our study was also supported by another study on medical students of Malaysia⁵ and Norway⁶. In another study, Naidoo et al⁷ showed that uncorrected refractive errors were responsible for visual impairment in 101.2 million people and blindness in 6.8 million in 2010. Increasing incidence of myopia increases the danger of vision hindrance and especially high nearsightedness is related to the danger of perpetual visual inability due to related sight-undermining problems.

In another study, various treatment options for controlling the progression of myopia in the young population were proposed⁸. Another study has postulated dangers of progressive myopia to cause various vision-threatening complications like retinal detachment, choroid atrophy, glaucoma etc⁹. High myopia has a higher risk of cataract, glaucoma, myopic macular degeneration, and retinal detachment¹⁰ and the results of refractive surgery are less successful in subjects with high myopia¹¹.

CONCLUSION

The frequency and risk factors of refractive errors among medical students is associated with long study hours, dim light reading and excess screen hours.

Conflict of interest: Nil

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