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Prevalence of Myopia and Its Associated Risk Factors Among the Medical Students of SMBBMU, Larkana, Sindh, Pakistan

Aliza Samo¹, Rukhsar Samo², Amara Mustafa¹, Imran Ali Pirzado³, Aqsa Khokhar¹,
Fahad Jibran Siyal⁴

¹Chandka Medical College, Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Sindh, Pakistan.

²Department of Obstetrics and Gynaecology, Shaikh Zaid Women Hospital CMCH, Larkana, Sindh, Pakistan.

³Department of Ophthalmology, Chandka Medical College, Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Sindh, Pakistan.

⁴Department of Pharmacology, Chandka Medical College at Shaheed Mohtarma Benazir Bhutto Medical University, Larkana, Sindh, Pakistan.

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Corresponding Author: Aliza Samo,
Chandka Medical College, Shaheed Mohtarma
Benazir Bhutto Medical University, Larkana,
Sindh, Pakistan.
Email: alozasamo8@gmail.com

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ABSTRACT

Myopia, commonly known as nearsightedness, is a refractive error characterized by difficulty seeing distant objects clearly. Prevalence of myopia has been reported to be increasing worldwide. An increase in myopia frequency poses a threat to the health. The aim of this research is to determine the prevalence of myopia and its associated risk factors among the medical students of SMBBMU, Larkana. A cross sectional Descriptive study was conducted at SMBBMU, Larkana with stratified sampling of 250. The prevalence of myopia was 67.6%. A total of frequency 173(69.2%) were females and with frequency 77(30.8%) were males. Majority of myopic students with a percentage of 38.6% had lens power between 1 to 2D. Final year students had the greatest percentage of myopia, 22.48%. Prevalence of myopia was higher in urban students as compared to rural students. Positive association with reading/studying > 3 hours, indoor work < 5 hours. More than 45.5% students had screen time > 8 hours and inverse with outdoor activity. More than 63.2% students spent less than 3 hours in outdoor activity. High prevalence of myopia was found among the medical students. The increased use of electronic gadgets, decreased outdoor activity, increased indoor activity, and positive family history were found to be the major associated risk factors.

INTRODUCTION

When distant vision is distorted and blurred and near vision is less it is termed as myopia which may due to eyes refractive error causing the similar rays of light to converge at a point in front of retina, hence image is formed in front of eye. It can be caused due to increase in the curvature of cornea lens, increase in the diameter at anteroposterior of the eyeball. Others causes includes increased refractive index of lens, position of lens, excessive accommodation. The simple myopia is a condition

in which short sightness occurs within 20 years of age particularly school going children's¹. The burden of myopia will be increased in 9.8% of population till 2050².

It causes 53% of visual impairment and 2nd leading cause of blindness across the globe^{3,4}. Due to uncorrected refractive error it has impact on economic and social effects, which can contribute into reducing the employment and educational

opportunities of the active populations⁵. A refractive error is the eyes inability to make a focused picture on the macula which is located at the retinas central part without accomodtaing⁶.

1.6 billion Of population around the globe is affected by Myopia⁷. In the last five decades the frequency of myopia has already increased w times in United stated and europe⁸. In spite of many effective correction methods it has remain a complicated medical issue⁹. In myopia the extreme elongation of the eyeball is myopia's important pathological mechanism¹⁰. This elongation is mostly accompanied with thickening of cervical and cranial spine muscles¹¹.

The myopia also depends on genetically and lifestyle factors¹². The university students are also found to have myopia due to increase in near visual work¹³. Due to COVID-19 pandemic myopia has increased in all age groups, online learning is also one of the main causes of myopia progression¹⁴⁻¹⁶. The aim of this research was to determine the prevalence of myopia and its associated risk factors among the medical students of smbbmu larkana, Sindh, Pakistan.

METHODOLOGY

A Cross-sectional Descriptive study was conducted at SMBBMU, Larkana with a Stratified sampling of 250. This study was carried out from 1st September 2023 to 29th February 2024 at Chandka Medical College at SMBBMU Larkana. All those students who were studying at the College were included and all those students who were not studying at Chandka Medical College were excluded. A validated questionnaire with 14 items was distributed among students, and results were measured as Frequency and percentages with SPSS 23.

RESULTS

250 students participated in this study and 69.2% (173) were female's and 38.8% (77) were males. From 1st year to final year we took 50 samples from each year. The majority of students were of 21-24 years age groups which were about 48.8% (122), then 48% (120) were about of 16-20 years and then 3.2% (8) were of 25-20 year's age group. In current study it was found out that 67.6% (169) were myopic and 32.4% (81) were non myopic. The majority of myopic students, with a percentage of

38.6%, had lens power between -1 to -2D. Final year students had the greatest percentage of myopia, i.e., 22.48%. Students from Rural were 32% (80) and urban 68% (170). The days scholars were about 45.6% (114) and hostellers were 54.5% (136).the Familial history of myopia in both parents was not present in 164 (65.6%) and was present in . 86 (34.4%). Majority of them started to use either computer or cell phone at secondary level of education which were 55.6% (139), followed by primary education (21.6% (54) and the ratio of user since university level were lowest and it was 22.8% (57). Majority of students were found to be reading under dim light with 54.8% (137) and 43.6% (109) were not found to be studying under dim light. The average indoor activity was found to be highest for less than 3 hours were 50% (125) , followed by 25.6% (64) for 3 to 5 hours and 24.4 % (61) were found to be more than 5 hours. Average outdoor activity day be highest for less than 3 hours were 63.2% (158), followed by 22.8% (57) for 3 to 5 hours and 14 % (35) were found to be more than 5 hours. In Table number 1 you can find the ratio of students suffering from Myopia according to their year group.

Table 1

	1 st year	2 nd year	3 rd year	4 th year	Final year	total
MYOPIC	35	32	29	38	35	169
NON MYOPIC	15	18	21	12	15	81

DISCUSSION

While the various refractive errors were known to be prevalent across the world in variable amounts, the myopia has stolen the limelight. There is wide variation in the prevalence of myopia between regions and ethnic groups. In current study which was conducted on 250 medical students the 169 (67.60%) were found to be myopic. The prevalence rates of males and females were 30.80% and 69.20% respectively. In a review to measure global disparity in Research posters are visual aids that are used to present a study. It is a popular way to showcase research work in conferences and the academe. Information is presented concisely and in a visually appealing manner to attract attention and spark discussion. childhood myopia prevalence over time considering demographic factors, there is rise in myopia prevalence rates with age varied by ethnicity. East Asians exhibited the highest

prevalence attaining 69% at 15 years of age¹⁷. The prevalence of myopia among medical students at gondar of medicine and health sciences Northeast Ethiopia was found to be 16.9%, while the prevalence of myopia patient in current study was 67.60%¹⁸. Compared with other School based studies previously done in gondar 11.9%, bahir Dar 8.49%, Welkite 6.5%, Nigeria 7.5% and south Africa 5%¹⁹. As compared to current study the

prevalence in our study we found was highest in the final year 22%.

CONCLUSION

High prevalence of myopia was found among the medical students. The increased use of electronic gadgets, decreased outdoor activity, increased indoor activity, and positive family history were found to be the major associated risk factors

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