

Knowledge, attitude, and practice about myopia in school students in Marat city of Saudi Arabia

Anas Abdulaziz Almujailli¹, Abdulaziz Abdullah Almatrafi¹,
Anas Abdullah Aldael¹, Hamad Abdullah Almojali¹,
Abdulaziz Ibrahim Almujailli¹, Aslam Pathan²

¹Medical Student, Department of Clinical Sciences, ²Department of Pharmacology, College of Medicine, Shaqra University, Shaqra, Saudi Arabia

ABSTRACT

Background: The prevalence of youth myopia has increased significantly in the local communities of Saudi Arabia; school children and parents are unaware of the knowledge and complications of myopia. **Objective:** To initiate and increase the awareness of myopia among school students and to prevent future complications. **Method:** An organized, questionnaire with 14 questions was prepared to analyze the school students' knowledge attitudes and practice about myopia. The study was conducted in a local school in Marat city, Saudi Arabia, between April 2019 and September 2019. The sample size includes 100 male students of age group 7 years to 14 years. **Results:** 82% of students have heard about myopia with the majority source of information being parents (62%) and teachers (35%). 45% of the students reported a negative attitude toward the eye-glasses users. 20% of students have reported the use of eye-glasses. Most of the students reported uncomfortable feel and shyness due to wearing of eye-glasses which limits their use. **Conclusion:** The public awareness programs by the local governing bodies, local hospitals, health workers, medical colleges, and non-government organizations should be organized in each local school to increase the school students' knowledge, positive attitude, and practice toward myopia.

Keywords: Electronic devices, eye-glasses, local areas, myopia, school children

Introduction

Myopia is the state of refraction in which parallel rays of light are brought to focus in front of the retina of a resting eye. Myopia is measured by the spherical power in diopters of the diverging lens needed to focus light onto the retina, which can be expressed as the spherical equivalent or refraction in the least myopic meridian. The clinical correlates of myopia include blurred distance vision, eye rubbing, and squinting. Myopia has been classified as either

physiologic or pathologic. Physiologic myopia occurs due to an increase in the axial diameter of the eye over that which is attained by normal growth. Pathologic myopia is caused by an abnormal lengthening of the eyeball and is often associated with thinning of the scleral wall. Another classification is based on the age of onset. Congenital or infantile myopia occurs at birth with a reported prevalence in the full-term newborn varying from 0.0 to 24.2 percent. This variability is due to the technical difficulties in measuring the refraction in newborns. School myopia occurs at approximately 7–17 years of age and stabilizes by the late teens or early twenties. Both school and adult-onset myopia are mainly the results of idiopathic causes, while congenital myopia is often associated with other abnormalities.^[1-6]

Address for correspondence: Mr. Anas Abdulaziz Almujailli, Medical Student, College of Medicine, Shaqra University, Shaqra - 11961, Saudi Arabia. E-mail: anas3580@hotmail.com

Received: 14-01-2020

Revised: 12-03-2020

Accepted: 24-03-2020

Published: 30-07-2020

Access this article online

Quick Response Code:



Website:
www.jfmpc.com

DOI:
10.4103/jfmpc.jfmpc_86_20

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow_reprints@wolterskluwer.com

How to cite this article: Almujailli AA, Almatrafi AA, Aldael AA, Almojali HA, Almujailli AI, Pathan A. Knowledge, attitude, and practice about myopia in school students in Marat city of Saudi Arabia. J Family Med Prim Care 2020;9:3277-80.

Severe myopia may be associated with myopic macular degeneration, cataract, glaucoma, peripheral retinal changes (such as lattice degeneration), and retinal holes and tears, as well as retinal detachment. The methods of myopia correction are not without complications, including corneal infections due to contact lens wear and corneal scarring and persistent corneal haze from refractive surgery. The public health and economic impact of myopia, the most common eye condition in the world, is enormous. In the United States, the cost of correcting refractive errors with spectacles or contact lenses is estimated to be 2 billion dollars per year. Thus, myopia is a condition with social, educational, and economic consequences. Over the past few decades, there has been an increase in the prevalence of myopia in some populations, leading to growing concern among the public and the scientific community. The Chinese and Japanese appear to have had escalations of myopia rates. There is no well-established or universally accepted treatment for the prevention of myopia onset or progression. Some research studies indicated that the outdoor time helps slowdown the change of axial length and reduce the risk of myopia in the children.^[7-14]

Myopia is often considered benign because it is easily corrected with glasses, contact lenses, or refractive surgery. However, the prevalence of myopia is rapidly increasing in East Asia, and the large social costs spent to correct myopia make the disorder a serious public health issue. Furthermore, high myopia cannot be completely corrected and causes critical vision-threatening pathologies as well as blindness.^[15-17]

Method

An organized questionnaire was prepared to analyze school students' knowledge on the attitude and practice about myopia. The study was conducted in a local school in Marat city, Saudi Arabia, during the months of April 2019 to September 2019. The sample size includes 100 male students of age group 7 years to 14 years. The questions were selected by the research team drafted in English and Arabic. The aim of the study and questionnaire were described to the contributors. Medical students were assigned to conduct the study in different places. The names of the contributors were kept confidential to encourage accurate responses. Data were analyzed by a statistical analysis system. Variables were assessed using the Chi-square test. Statistical significance was defined as *P* values of < 0.05.

The study design and protocol was approved by the local institutional review board with number: SUCOM/LIRB/2019-06

Results

The study analyzed 100 students from different age groups. 45% of students were aged 7 to 9; 25% of the students were aged 10 to 12, and 30% of the students were aged 13 to 14. 88% of study contributors were Saudi nationals [Table 1].

82% of the students have heard about myopia with the majority source of information being parents (62%) and teachers (35%).

Table 1: Demographic data

Parameters	Number	Percentage
Age group		
7 to 9	45	45
10 to 12	25	25
13 to 14	30	30
Nationality		
Saudi	88	88
Non-Saudi	12	12

24% of the students suffered from myopia with 57% of students have a family history of myopia. Frequent use of electronic devices (52%) and malnutrition (25%) was the major cause of myopia in student's minds. 20% of students have reported the use of eye-glasses. Most of the students reported uncomfortable feel and shyness due to wearing of eye-glasses which limits their use. 45% of the students reported a negative attitude towards the eye-glasses users. 49% of the students were using electronic devices for less than 2 hours. 11% of the students took regular follow-up for the optics clinic. In the students' view, the limited use of electronic devices and the wearing of eye-glasses will treat myopia [Table 2].

Public awareness programs by the local governing bodies, local hospitals, health workers, medical colleges, and non-government organizations should be organized in each local school to increase the school student knowledge, positive attitude, and practice towards myopia.

Discussion

Myopia is a major public health problem. Myopia prevalence was reported to be increasing, with up to 80% of the junior school students with myopia in East Asia. However, the common challenges in implementing the myopia control strategies on a national level included lack of primary care and school screening programmes and the paucity of accurate prevalence data. There continues to be broad public misconception about myopia and myopia control, including the lack of parental awareness and resistance to wearing spectacles. We recommend to increase public education to raise parent and teacher awareness through primary health care workers including the spectacle dispensing for myopia at primary eye care level; encouragement of increased outdoor time of 2–3 hours per day for schoolchildren as a practical public health and primary care intervention that has been shown to potentially reduce the onset and progression of myopia. Governments and non-governmental organizations are encouraged to collaborate, especially education and health ministries to develop national myopia prevention programmes in primary care. Lastly, it is important to emphasize that the key recommendations, such as increasing the outdoor time for school children.^[18-20]

Acknowledgements

The authors are thankful to Shaqra University, Ministry of Education, Kingdom of Saudi Arabia for providing a platform to encourage research and developments among the students, staff, and society.

Table 2: Questionnaires on myopia and percentage of response

Questions	Response	Percentage
Have you ever heard about myopia?	Yes: 82	82
	No: 12	12
	Do not know: 6	6
If Yes, where did you obtain information about myopia?	Parents: 62	62
	Teacher: 35	35
	Friends: 2	2
	Health Awareness Programme: 1	1
	Yes: 24	24
Have you suffered from myopia?	No: 66	66
	Do not know: 10	10
	Yes: 57	57
Is your family history of myopia?	No: 33	33
	Do not know: 10	10
	Frequent reading: 6	6
In your opinion, what are the causes of myopia?	Frequent use of electronic devices: 52	52
	Genetic: 6	6
	Malnutrition: 25	25
	Do not know: 11	11
	Yes: 20	20
Have you using eye-glasses?	No: 80	80
	Uncomfortable feel: 33	33
	Shy: 11	11
Causes of not wearing eye-glasses?	Cost: 4	4
	Do not know: 52	52
	Yes: 24	24
Have you feel better vision after wearing eye-glasses?	No: 35	35
	Do not know: 41	41
	Yes: 35	35
Do you have positive attitude towards the person using eye-glasses?	No: 45	45
	Do not know: 20	20
	<2 hours: 49	49
How many hours per day are you using electronic devices?	2-4 hours: 43	43
	>4 hours: 8	8
	Yes: 11	11
Have you visiting optics clinic regularly?	No: 74	74
	Sometime: 15	15
	Wearing of eye glasses: 30	30
In your opinion, how myopia will be treated?	Avoiding excess use of electronic devices: 46	46
	Nutrition: 4	4
	Surgery: 1	1
	Do not Know: 19	19

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

References

- Arevalo JF, Lasave AF, Torres F, Suarez E. Rhegmatogenous retinal detachment after LASIK for myopia of up to -10 diopters: 10 years of follow-up. *Graefes Arch Clin Exp Ophthalmol* 2012;250:963-70.
- Avila MP, Weiter JJ, Jalkh AE, Trempe CL, Pruett RC, Schepens CL. Natural history of choroidal neovascularization in degenerative myopia. *Ophthalmology* 1984;91:1573-81.
- Bourne RR, Stevens GA, White RA, Smith JL, Flaxman SR, Price H, *et al.* Causes of vision loss worldwide, 1990–2010: A systematic analysis. *Lancet Glob Health* 2013;1:e339-49.
- Buch H, Vinding T, Nielsen NV. Prevalence and causes of visual impairment according to World Health Organization and United States criteria in an aged, urban Scandinavian population: The Copenhagen city eye study. *Ophthalmology* 2001;108:2347-57.
- Fan DS, Lam DS, Lam RF, Lau JT, Chong KS, Cheung EY, *et al.* Prevalence, incidence, and progression of myopia of school children in Hong Kong. *Invest Ophthalmol Vis Sci* 2004;45:1071-5.
- Fan DSP, Cheung EYY, Lai RYK, Kwok AKH, Lam DSC. Myopia progression among preschool Chinese children in Hong Kong. *Ann Acad Med Singap* 2004;33:39-43.
- Cai XB, Shen SR, Chen DF, Zhang Q, Jin ZB. An overview of myopia genetics. *Exp Eye Res* 2019;188:107778.
- Jonas JB, Panda-Jonas S. Epidemiologie und anatomie der Myopie. *Epidemiology and anatomy of myopia. Ophthalmologie* 2019;116:499-508.
- Schaeffel F. Prävention der Myopie. *Prevention of myopia. Ophthalmologie* 2019;116:509-17.
- Weiss RS, Park S. Recent updates on myopia control: Preventing progression 1 diopter at a time. *Curr Opin Ophthalmol* 2019;30:215-9.
- Jonas JB. Myopia: Epidemiology, anatomy and prevention of myopia and treatment options for progressive myopia in childhood. *Ophthalmologie* 2019;116:498.
- Prousalis E, Haidich AB, Fontalis A, Ziakas N, Brazitikos P, Mataftsi A. Efficacy and safety of interventions to control myopia progression in children: An overview of systematic reviews and meta-analyses. *BMC Ophthalmol* 2019;19:106.
- Cao K, Wan Y, Yusufu M, Wang N. Significance of outdoor time for myopia prevention: A systematic review and meta-analysis based on randomized controlled trials. *Ophthalmic Res* 2020;63:97-105.
- Grzybowski A, Kanclerz P, Tsubota K, Lanca C, Saw SM. A review on the epidemiology of myopia in school children worldwide. *BMC Ophthalmol* 2020;20:27.
- Wu HM, Seet B, Yap EP, Saw SM, Lim TH, Chia KS. Does education explain ethnic differences in myopia prevalence? A population-based study of young adult males in Singapore. *Optom Vis Sci* 2001;78:234-9.
- Yamada M, Hiratsuka Y, Roberts CB, Pezzullo ML, Yates K,

- Takano S, *et al.* Prevalence of visual impairment in the adult Japanese population by cause and severity and future projections. *Ophthalmic Epidemiol* 2010;17:50-7.
17. Zheng YF, Pan CW, Chay J, Wong TY, Finkelstein E, Saw SM. The economic cost of myopia in adults aged over 40 years in Singapore. *Invest Ophthalmol Vis Sci* 2013;54:7532-7.
 18. Ang M, Flanagan JL, Wong CW, Müller A, Davis A, Keys D, *et al.* Review: Myopia control strategies recommendations from the 2018 WHO/IAPB/BHVI meeting on myopia. *Br J Ophthalmol*. 2020. pii: bjophthalmol-2019-315575. doi: 10.1136/bjophthalmol-2019-315575. [Epub ahead of print]
 19. Karupiah V, Wong L, Tay V, Ge X, Kang LL. School-based programme to address childhood myopia in Singapore. *Singapore Med J* 2019. doi: 10.11622/smedj.2019144. [Epub ahead of print]
 20. Ravilla ST, Ramasamy D. Spectacle dispensing for myopia at primary eye care level. *Community Eye Health* 2019;32:S3-S4.