

Knowledge, attitudes and practices (KAP) regarding refractive errors among medical undergraduates in Colombo district: A descriptive study

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Abstract

Background

Methods: This descriptive cross-sectional study was conducted from June to August 2019 among 255 medical undergraduates. After obtaining the ethics approval, the pretested questionnaire was distributed via google forms. The responses were analyzed using standard statistical software.

Results: The data was collected from 255 (59.7%) students, with age ranging from 20-29 years (mean 23.5 years), females represented 70%, of the total study population. 25% were from final year and 17% were studying in the first year. Most of the respondents (87%) were familiar with the term refractive errors. However only 51% were able to describe the basic types of refractive errors accurately. 46% believed prolonged usage of corrective lens would lead to dependence. 7% said they didn't know that eyes had to be checked regardless of eye diseases. Recent advances in refractive error correction such as lasik surgery was known to only 55% and 3% thought there is no treatment option for refractive errors.

Discussion and conclusion: Majority of medical undergraduates were aware of refractive errors. However, there were many misconceptions on the subject and lapse in knowledge which necessitates regular revision of ophthalmic education in order to cater to the expanding needs of patients in the future.

Key words: refractive errors, medical undergraduates, KAP study

Introduction

Vision is considered the most developed sense in the human and is responsible for most of the sensory information that the individual acquires from the external environment.

In the complex process of vision, where the image of an object is reflected on the retina, any alteration in the properties of refractive medium can lead to abnormal

focusing and reduction of visual acuity. Conditions causing refractive errors are multifactorial and treatment for correctable causes are also numerous.

Uncorrected refractive error is the most common cause of avoidable visual impairment in the world¹. Effective correction of refractive errors if diagnosed is possible at a minimum cost. The need of optimum vision with today's needs for the online platforms in learning and working in the new normal has been emphasized more.

Lack of awareness among patients and inadequate attention among medical professionals and absence of routine testing are some of the barriers against achieving the best visual potential mainly in the developing countries.

Our study is aimed at evaluating the knowledge, attitude and practices (KAP) towards refractive errors among medical undergraduates attending two universities in Colombo district with a view to assess the necessity of modifications in undergraduate ophthalmology education.

A Sri Lankan study conducted in northern and eastern provinces reported that 11,388 people had impaired vision due to lack of appropriate spectacles which was five times greater than the number of people who were visually impaired due to cataract (2,180 people or 15 per cent of the total)². It shows that the prevalence of refractive error in the Sri Lankan population was 54 of every 100 000 individuals.

Furthermore, with the current pandemic situation, online working and learning environments have become the new normal. Children and adults seek medical advice for multitude of symptoms such as headaches, eye pain, tearing, blurring and even diplopia, related to computer vision syndrome. The future doctor should be armed with the necessary awareness and understanding on one of the major root causes of these symptoms, uncorrected refractive errors.

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Hence, the present study is aimed at evaluating the knowledge, attitude and practices (KAP) towards refractive errors in eyes among medical undergraduates attending two Universities in Colombo district in order to understand the level of awareness and necessity of improvement in undergraduate ophthalmology education.

Methodology

This is a descriptive cross-sectional study, conducted from June to August 2019 among medical undergraduates from two universities of Colombo district in Sri Lanka. After obtaining the ethics approval, the pretested questionnaire was distributed to medical under-graduates from Faculty of Medicine, University of Colombo and Faculty of Medical Sciences, University of Sri Jayewardenepura. Inclusion criteria were, individuals who were aged more than 18 years and had registered themselves for MBBS course in universities located within Colombo District. The responses to the questionnaire including 44 questions, of qualitative and quantitative aspects were collected. The data obtained was statically analyzed using standard descriptive statistics using SPSS Version 16.0.

Ethics approval and consent to participate

Ethical approval was obtained from the ‘Ethics Review Committee’ of the Faculty of Medicine, University of Colombo and authorization was received from the Faculty of Medical Sciences, University of Sri Jayewardenepura.

Written informed consent was taken from the medical undergraduates before enrolment to the study via google forms.

Results

The data was collected from 255 medical undergraduate students, with age ranging from 20-29 years (mean 23.5 years), females represented 70%, of the total study population. Students from University of Colombo represented 34% of the sample population. Most number of students as a batch were from the second year (31%) while 17% of the total number of students were from the first year.

Table 1. Distribution of the population

Gender	Female (70%)	Male (30%)
Institution	University of Colombo (34%)	University of Sri Jayewardenepura (66%)

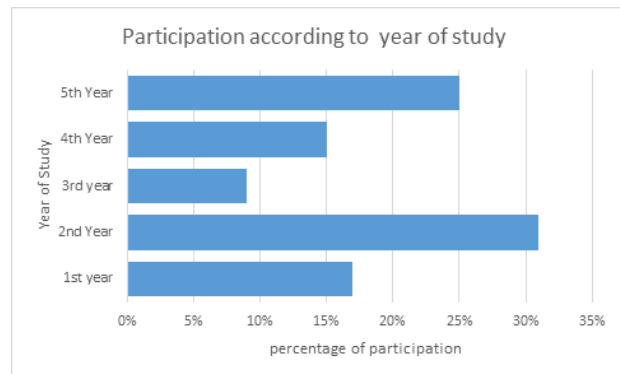


Table 2. Participation according to year of study

Knowledge

Out of 255 respondents, 221 (87%) were familiar with the term refractive errors. 76% (168) students selected appropriate statement regarding myopia and hyperopia while 51% (112) selected appropriate statement regarding myopia, hyperopia, presbyopia and astigmatism.

Most of the students (207) believe that genetic factors play a role in the occurrence of refractive errors whereas 67 students thought that it is due to environmental factors such as pollution. 65% (144) believe that nutritional factors could cause refractive errors. In contrast, 7% (15) thought that refractive errors were not due to habit of prolong reading, watching TV, computers, and smartphones, while 10% (22) said that injuries to eyes does not cause refractive errors.

According to the respondents, most known symptoms for refractive errors were blurredness (96%), headache (91%), eye pain (69%) and tearing (66%). Interestingly color vision defects was thought to be a symptom of refractive error by 12%.

Among 221 students, 85% knew that refractive errors were detected by assessing the visual acuity while the rest did not know how refractive errors were detected. Out of them, more than half (64%) were in third, fourth and final years.

According to the respondents, spectacles and contact lens were treatment options 99% and 80% respectively. LASER surgery was considered an option in treatment by 55%, and 3% selected “no treatment” option for the disease.

19% (41) believed that wearing spectacles or contact lenses worsened existing refractive errors 46% (101) believed that using glasses for a long period of time

would cause their vision to deteriorate, leading to dependence on corrective lenses.

1.4% believed that spectacles glasses once prescribed would remain the same for next five years.

Attitudes and practices

Out of 255 respondents, 53% (135) do not wear glasses. 25% (34) haven't ever done an eye checkup. 9% have symptoms of refractive errors.

Regarding reasons for not getting an eye checkup, 50% said that they didn't know that eyes had to be checked regardless of eye diseases. 32% said that they avoided the checkup as they might need to wear glasses if doctor finds an error. For 21% eye checkups were thought to be expensive. Less than ten students reasoned as they didn't know where to check eyes.

Regarding the reasons for not wearing glasses even after an eye checkup, 88% said that they were not prescribed glasses. Other reasons given included glasses causing impression on the face, uncomfortable to wear, spectacles were expensive, dislike to wear glasses, preference of contact lenses and the thought that the people wearing glasses were considered as visually handicapped. Some others had given the reasons as that they would be teased for wearing glasses, fear of getting eye infections and thought that the glasses were meant for old people.

Among 255 respondents, 120 (47%) were using glasses for the correction of refractive errors and most of them (98%) were using spectacles.

34% of 120 who were using glasses, were diagnosed during their early adolescent period (12 -18 years according to NICHD) and using for 8.8 years in average. Most of them (88%) were diagnosed because of having symptoms while 12% were diagnosed during random eye checkups. 57% got their first pair of glasses prescribed from eye surgeon in private sector. 25% from eye surgeon in state sector and 18% from optometrist/optician.

Amidst students using only spectacles (111), 77% (86) were afraid of wearing contact lenses. Most of them have expressed their concerns over discomfort when putting on and removing (34%), fear of traumatizing eyes (31%) and irritation and infections to the eyes (26%). 47% of 86 had changed from contact lens to spectacles. According to respondents, other than the reason regarding complication and recommendation, discomfort and inconvenience in using contact lens got equal percentage (43%). 25% said it was because of high prices of contact lenses and 15% said that spectacles give them a mature appearance.

Regarding hygiene and care of spectacles 66% wear the glasses constantly while the rest wear when necessary. Regarding the place where the students keep their glasses when they were not using them, 31% said that they would keep inside the case while 49% said they would keep wherever reachable. Other places were on the table (32%), inside bag (3%) and shirt pocket (1%). Regarding the frequency of cleaning the glasses, 33% clean when vision got blurred, 31% said when it gets dirty, 26% clean daily, and 9% clean thrice a week.

Discussion

In the study we conducted the findings indicated several gaps and inadequacies in the knowledge.

Majority of medical undergraduates were aware of the term refractive error however only 51% were able to select the correct answer for description of myopia, hyperopia, presbyopia and astigmatism. Laser treatment was known as a treatment option for 55% of the students but the details or side effects were not known.

This study found many misconceptions on the subject which necessitates emphasis on proper basic education in ophthalmology during the undergraduate period. The attitudes and practices of people towards refractive error depend on various factors: they are still arbitrary and vary according to time and place. In a study conducted by J. A. Ebeigbe et al³, 51.2% of the people do mind wearing glasses, 64% thought glasses were harmful to the eyes, 56% thought that they would be mocked/teased for wearing glasses, 60% thought wearing glasses would mean they are growing old and 57.4% saw people wearing glasses as visually handicapped, where female outnumbered male. In our study, these concerns were expressed by the students but the percentages were less.

A study in 2004, on Global magnitude of visual impairment caused by uncorrected refractive errors⁴, Serge mentioned that non-correction of refractive errors is due to several factors like lack of screening, and the non-availability and affordability of refractive corrections were the substantial reasons in the age group 5-15 years. Our study also describes these factors. Medical undergraduates are the future doctors on whom the public would place their trust in alleviating disease conditions. In the modern world as more and more digital platforms are utilized in day today practice, eye health would become one of the most important factors defining productivity of a person. As important team members in the health care team doctors need to be aware of the common conditions that lead to visual impairment and the corrective treatment options, to advise patients and refer them appropriately.

Furthermore with the computer vision affecting many citizens due to the new work norms doctors need to pay more attention to common symptoms related to the eyes such as headaches, eye strain, tearing and blurring.

Therefore the undergraduate medical curriculum need to be appropriately equipped to address this situation to make the “tomorrow’s doctor” with suitable competencies to serve the population.

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References

1. Naidoo KS, Leasher J, Bourne RR, et al. Global Vision Impairment and Blindness Due to Uncorrected Refractive Error, 1990-2010. *Optom Vis Sci.* 2016; **93**(3): 227-34. doi: 10.1097/OPX.0000000000000796
2. Tahhan N, Fricke TR, Naduvilath T, Kierath J, Ho SM, Schlenker G, Layland B, Holden B. Uncorrected refractive error in the northern and eastern provinces of Sri Lanka. *Clinical and Experimental Optometry: Original paper.* 2009; **92**(2): 119-25.
3. Ebeigbe JA, Kio F, Okafor LI. Attitude and beliefs of Nigerian undergraduates to spectacle wear. *Ghana Medical Journal* 2013; **47**(2): 70-3.
4. Resnikoff S, Pascolini D, Mariotti SP, Pokharel GP. Global magnitude of visual impairment caused by uncorrected refractive errors in 2004. *Bulletin of the World Health Organization.* 2008; **86**: 63-70.