

Awareness about refractive error among students in primary schools

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ABSTRACT

Introduction. The uncorrected refractive errors (REs) cause visual impairment in more than 300 million subjects worldwide. Correction of uncorrected REs is a priority of Vision 2020-The Right to Sight. The study aimed to determine the awareness about RE among students in primary schools

Methods. The descriptive prospective study was conducted on younger children groups aged 6-12 years, through a period of 12 months from March 2019 to March 2022. In total, 348 enrolled students were attending the ophthalmologic health private clinic. A structured questions form was designed to get information associated to the awareness of the families on REs. The form of questionnaire printed and distributed and explained to individuals. Participants agreed to answer all questions. The data collected included demographic information (sex, age, income of family, RE types and classes level). The rest portions were awareness of ocular symptoms, RE types, correction by spectacles, knowledge of aggravation, importance of wearing spectacles, awareness of contact lens usage and awareness about RE surgeries.

Results. In study, 384 individuals enrolling, 211(54.9%) males and 173(45.1%) females. Group 6-9 years of students were 48.2% were while 51.8% belonging to age group of (10-12) years. In relation to family income, upper level in 20.1%, middle in 32.5% and lower in 47.4%. The class divided into (1-3) in 52.3% and (4-6) in 47.7%. According to ophthalmologists, the students classified into myopic in 42.95 and

hypermetropic in 46.4%, besides 10.75 had astigmatism. The answer (yes) to awareness of ocular symptoms of RE was 80.9%, awareness RE types was 66.9%, correction by spectacles was 95.1%, knowledge of aggravation of RE was 67.9%, importance of wearing spectacles was 48.9%, awareness of contact lens usage was 53.6% and awareness about RE surgery was 41.4%. There is a significantly associated with participants' awareness of alternatives to eyeglasses like contact lens ($P = 0.01$) and with willingness to use contact lens and underlying refractive eye surgery ($P = 0.05$).

Conclusion. There are high awareness of ocular symptoms of RE and correction by spectacles, moderate to awareness RE types and knowledge of aggravation of RE and low to importance of wearing spectacles, awareness of contact lens usage and awareness about RE surgery.

Keywords: spectacle, eyeglasses, refractive error, myopia, hypermetropia

INTRODUCTION

There are several reasons to develop the visual impairment (VI), however, the refractive error (RE) is the commonest cause while the blindness is the second cause. RE has been distinguished as a health problem publically by the WHO in its global initiative VISION-2020 (the right to sight) [1]. The WHO revealed about more than 40 million blind people, including 2 million child below 15-years-old and 125 million with impaired vision [2].

In younger age groups, there is more prevalence of myopia, more likely 40 times upon than the lower magnitudes for causing the sight threatening visual consequence [3, 4].

Globally, uncorrected REs are the major reason for VI and blindness. RE conditions are astigmatism, phoria and accommodative dysfunctions lead to reductions in the visual performance in pediatrics and cause ocular symptoms as headaches, eyestrain, intermittent double vision and blurred vision. RE with high prevalence and high costs connected to its correction by (spectacles, contact lenses or surgery) posing a significant public health and economic concerns [5-7].

The global cost to correct VI from uncorrected RE estimated to be more than 3000 million \$ [8]. As well as, the potential productivity loss resulting from the global burden

of uncorrected RE has been estimated to be more than 150 billion \$ [9]. RE do not imposing a heavy financial burden on the societies but if stay uncorrected may causing a loss of educational and employment opportunities, lower productivities and impaired QoL [10, 11].

However, the prevalence and severity of RE are important parameters to evaluate the societal impacts of it. In rural region, stigmatization related to eyeglasses prevent potential beneficiaries from utilizing them if they are given free of charge. Awareness of RE and its symptoms along with different management modalities playing an important roles in the blindness prevention [12]. Therefore, we conducted this study for a better understand about the awareness level and general population attitude forward RE correction.

METHODS

Design and setting

The descriptive prospective study was conducted on younger children groups aged 6-12 years, through a period of 12 months from March 2019 to March 2022. In total, 348 enrolled students were attending the ophthalmologic health private clinic. A structured questions form was designed to get information associated to the awareness of the families on REs.

Ethics

From all the parents, verbal and written consent was obtained. Ethical approval was taken from Ibn Sina Hospital.

Data collection

The questionnaire written according to Aldebasi [13] study guide. The form of questionnaire printed and distributed and explained to individuals. Participants agreed to answered all questions. The data collected included demographic information (sex, age, income of family, RE types and classes level). The rest portions were awareness of ocular symptoms, RE types, correction by spectacles, knowledge of aggravation, importance of wearing spectacles, awareness of contact lens usage and awareness about RE surgeries.

Data Analysis

Statistics was done by SPSS ver.26 (IBM, Chicago, US). The Chi-square test was applied to identify differences between the studied variables. The frequencies and percent described qualitative variables whereas mean and SD used for quantitative variables. The statistical significance was set at a P-value <0.05.

RESULTS

In study, 384 individuals enrolling, 211(54.9%) males and 173(45.1%) females. Group 6-9 years of students were 48.2% were while 51.8% belonging to age group of (10-12) years. In relation to family income, upper level in 20.1%, middle in 32.5% and lower in 47.4%. The class divided into (1-3) in 52.3% and (4-6) in 47.7%. According to ophthalmologists, the students classified into myopic in 42.95 and hypermetropic in 46.4%, besides 10.75 had astigmatism. (Table 1)

According to responses to the questionnaire in (Table 2). The answer (yes) to awareness of ocular symptoms of RE was 80.9%, awareness RE types was 66.9%, correction by spectacles was 95.1%, knowledge of aggravation (reading, watching TV, playing video games, mobile phone and high bad illumination) of RE was 67.9%, importance of wearing spectacles was 48.9%, awareness of contact lens usage was 53.6% and awareness about RE surgery was 41.4%.

There is a significantly associated with participants' awareness of alternatives to eyeglasses like contact lens ($P = 0.01$) and with willingness to use contact lens and underlying refractive eye surgery ($P = 0.05$). (Table 3)

Table 1. Variables studied in this work.

Variable		No.	%
Age (years)	6-9	185	48.2
	10-12	199	51.8
Gender	Male	211	54.9
	Female	173	45.1
Income	Upper	77	20.1
	Middle	125	32.5
	Lower	182	47.4
Class	1-3	201	52.3

	4-6	183	47.7
RE	Myopia	165	42.9
	Hypermetropia	178	46.4
	Astigmatism	41	10.7

Table 2. Questionnaires answer (yes) in this study.

Questionnaires	No.	%
Awareness of ocular symptoms (RE)	311	80.9
Awareness RE types	257	66.9
Correction by spectacles	365	95.1
Knowledge of aggravation of RE	261	67.9
Importance of wearing spectacles	188	48.9
Awareness of contact lens usage	206	53.6
Awareness about RE surgery	159	41.4

Table 3. Comparison between contact lens and refractive eye surgery

		No.	%	P value
1 Awareness of alternatives to corrective eye-glasses	Contact lens	212	55.2	0.01
	Refractive eye surgery	172	44.8	
1 Willingness to use alternatives to corrective eye-glasses	Contact lens	189	49.2	0.05
	Refractive eye surgery	195	50.8	

DISCUSSION

The living standard is raising, men are becoming more awareness of the health concerns in their day-to-day-living stay for many causes patients would suffering in silence with uncorrected REs fearing 'social-stigma' of wearing glasses or me-think in 'unfounded beliefs' that eye-glasses destroy eyes like recorded crossing societies [14,15].

Garg and Malik study [12], reported 21.6% of spectacle users knew the importance of wearing correction glasses and 2.2% were willing to use contact lens whereas 1.3% were willing to went for surgeries and for improvement their eyesight.

The poorly respondents attitude to possible up taken of both refractive eye surgeries and contact lenses as alternative to corrective refractive glasses were boring out of the fact that many cases had very little information and the fearing of its expenses and complications associated with these interventions [16].

Higher educated peoples are more aware of the visual disorders and its management modalities, however, this remained confined to 21.9 percent [12]. In this work, the education levels playing an important roles in the association with the degrees of the awareness of uncorrected REs and willingness to utilize various management options. A report by WHO stated that simple sight tests and eye-glasses or contact-lenses could making a dramatic differences to lives of more than 200 million subject worldwide [16]. The levels of knowledge about these issues and the correction options are low in our locality. The visual prognosis of communicating by 1^o health care doctors would helping to elevate knowledge and compliance among peoples [17] because unrequired to say, health promotion and communication are keys public health strategies [18-20]. These data emphasized the crucial roles of ophthalmologists in bringing the general ocular health data to the public attention [12]. Furthermore, the primary care doctors and health care workers able to help in spread awarenesses about the required for proper corrections of REs and screening of eyes ailment in the communities including the primary schools [16-20]. Even screening of vision by trained teachers are an effective ways for early detection of RE [21].

According to responses to the questionnaire, the answer (yes) is high to awareness of ocular symptoms of RE (80.9%) and correction by spectacles (95.1%), moderate to awareness RE types (66.9%) and knowledge of aggravation of RE (67.9%) and low to importance of wearing spectacles (48.9%), awareness of contact lens usage (53.6%) and awareness about RE surgery (41.4%).

The effective health education in eyes caring may affect the behavior towards considering regularly ocular caring. Getting doctors informed about available services could enhancing positive attitude to these services [22].

Strategies like screening of vision and eyes health promotion programs required to be implemented, the refractive services quality should be raising and monitored and the cost of spectacles must be regulated, these will cause in the RE incidence.

CONCLUSION

There are high to awareness of ocular symptoms of RE and correction by spectacles, moderate to awareness RE types and knowledge of aggravation of RE and low to importance of wearing spectacles, awareness of contact lens usage and awareness about RE surgery. For reducing the visual problems impactions related to RE symptoms (amblyopia, vision blurring, eye strain and red eyes), several certain suggestions must be taken into consideration in nationality as spreading data via social medias and publicity, education, screenings for RE in primary schools, work place and government.

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Informed Consent

It was obtained from all parents.

Disclosure

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Authors declared that this study received no funding support.

Conflict of Interest

Authors declare that they have no conflict of interest.

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