

Awareness and Knowledge of Poor Vision among Students in Hail University

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ABSTRACT

Background: Awareness of common eye diseases particularly impaired vision and their prevention and treatment can play an important role in encouraging people to seek timely eye care and can therefore help in reducing the burden of visual impairment.

Objective: This cross sectional observational study was carried out to assess the level of awareness and knowledge about the problem of poor vision among Saudi students in Hail University.

Methods: A standardized questionnaire was randomly distributed to students aged 18-24 years of both sexes. A total of 1484 subjects agreed to participate, answered the questionnaire and were involved in the study.

Results: Findings showed that 1330 students considered poor vision to be a problem. Most of them considered elders the most susceptible age group followed by teenagers. More than half of the students did not know which gender is more affected by poor vision. More than one-third (37.5%) of them considered poor vision as a genetic disorder. Others reported errors of refraction, cataract and senility (10.6%, 8.4% and 6.55% respectively). However, 28.3% of the students did not know exactly the predisposing causes of poor vision. Two-thirds of the study population thought that poor vision could be prevented. Regular periodic examination of the eyes and prevention of the predisposing factors were recommended (31.3% and 32.7% respectively) as the best methods to prevent poor vision. There was significant association between the level of awareness and knowledge of the students about poor vision and the gender, type and level of education.

Conclusion: The detected levels of knowledge is still not the optimum especially among female students, non-scientific colleges and in the earlier levels of university education. This emphasizes the need to involve such students in a proper eye health education program. This will help increasing the awareness of the community at large.

Keywords: poor vision; awareness; students; survey.

INTRODUCTION

Vision is the capability of seeing with an unambiguous sensitivity of features, color and contrast, and to differentiate between objects visually⁽¹⁾. Low vision is defined as central visual acuity of 20/70 or worse in the better-seeing eye with best correction or a total visual field loss of 140 degrees. Legal blindness is defined as central visual acuity of 20/200 or worse in the better-seeing eye with best correction or a visual field of 20 degrees or less⁽²⁾.

Globally, millions of people of all ages have moderate or severe vision impairment. Cataract and uncorrected refractive error, which are completely treatable causes, are responsible for the majority of cases of blindness. Less frequent causes of blindness and vision impairment include glaucoma, age-related macular degeneration, corneal opacity, diabetic retinopathy and trachoma. Some of these diseases are preventable and treatable as well⁽³⁾.

Although the problem is relatively common in older people, causes of childhood blindness and visual impairment are not uncommon, and they have

substantial effects on their physical, mental and social development. Childhood blindness remains as a major concern and a priority disease of the global initiative for the elimination of avoidable blindness by the year 2020: "VISION 2020 - The Right to the Sight"⁽⁴⁾.

It is essential to properly design appropriate and relevant measures to address the problem of vision impairment and blindness. In a community-based outreach program different preventive measures could be introduced and emphasized to address various causes of poor vision, especially those related to nutritional problems, infection and injury. Close collaboration of all stakeholders such as family physicians, parents, community support groups, etc., could further enhance a better eye care screening and treatment of diseases⁽⁵⁾.

Awareness of common eye diseases and their prevention and treatment can play an important role in encouraging people to seek timely eye care, hence, reducing the burden of visual impairment. Well informed students are likely to increase the awareness and knowledge of others

including their families, friends, relatives and the community at large⁽⁶⁾. Hence, the current study aimed to assess awareness and knowledge of the problem of poor vision among Hail University students.

METHODS

Ethical considerations

This study was approved by the Research Ethics Committee of Hail University. An informed consent was obtained from each participant.

Study design:

This study had a cross-sectional observational design that was used to assess the level of awareness and knowledge of the problem of poor vision among Hail University students, Hail City, Saudi Arabia.

The current study was carried out during April and May, 2017 among Hail University students. A total of 1484 Saudi students, both males and females, aged between 18 and 24 years-old, were included in this study. Students not achieving the inclusion criteria and those with incomplete data were excluded from the study.

A self-administered questionnaire was used for data collection. The first part of the questionnaire was about socio-demographic information of the study participants. The second part was about participants' knowledge of the problem of poor vision (the most susceptible age groups, causes, prevention, and the main source of awareness). The questionnaire was distributed to the participants by direct contact with them. Data were confirmed then coded and entered to a personal computer. Thanks and appreciations were used to inspire the participants to be involved in the study.

Statistical analysis

Data were analyzed using the Statistical Package for Social Sciences (SPSS) software version 20.0. Categorical data were represented as numbers and percentages in brackets and Pearson's Chi-Square test was used to examine associations between two variables. Significance was adopted at $p < 0.05$.

RESULTS

A total of 1484 Saudi students at Hail University participated in the study. Most of them were females and were living in Hail city (73.5% and 85.0% respectively). Students of Health Sciences College represented the majority of the

study participants followed by those from College of Arts (38.3% and 27.6% respectively). Third and fourth years students were the most frequent (21.6% and 19.5%) followed by first and second ones (17.5% and 15.5%). Out of the total participants, 1330 (89.62%) considered poor vision a problem, while lower percentages (7.0%) did not believe this. Only 3.38% did not know whether it is a problem in Hail or not. There was significant association between each of sex, type and level of education on one hand and level of awareness on the other hand ($p < 0.001$). Male students of college of Arts and those in earlier study years were more significantly unaware of the problem. No significant relationship was found between residence and the level of awareness as shown in **table (1)**.

Table (2) shows the level of knowledge of the participating students about the most affected age groups with poor vision. Most of them (39.6%) considered elders the most susceptible ones followed by teenagers (32.7%). This was reported more significantly by females, students of Health Sciences College, and by those studying in the third and fourth years compared to their counterparts ($p = 0.001$ and < 0.001 respectively).

As regards, the student's thoughts about sex differences in developing poor vision, nearly 25% of the respondents considered females more vulnerable to diminished vision. But, more than half (56.2%) of the students did not know which gender is more affected with significantly great percent (81.3%) of them were females ($p < 0.001$). Moreover, significant relationship was found between the type and the level of education and the observed level of awareness as shown in **table (3)**.

Table (4) demonstrates the participant's information about causes of poor vision. More than one-third (37.5%) of them considered poor vision as a genetic disorder. In addition, errors of refraction, cataract and senility were reported by 10.6%, 8.4% and 6.55% of the study participants respectively. However, relatively great percent (28.3%) of the students did not know exactly the predisposing causes of poor vision. Females, urban residents, and participants from college of arts and the first-four years had significantly more deficient information regarding causes of poor vision in comparison with their colleagues ($p < 0.0001$).

Two-thirds (66.6%) of the study population thought that poor vision could be prevented. On the other hand, 15.1% disagree with them. The

remaining students (18.3%) did not have specific information. This lack in knowledge was observed significantly more in females than males ($p=0.001$), and was reported more significantly by students from Health sciences and Arts colleges ($p<0.001$). The level of studying was also significantly associated with the level of awareness as shown in **table (5)**.

The awareness of the participants about the most effective method to avoid loss of vision was illustrated in **table (6)**, Nearly equal percentages thought that regular periodic examination of the eyes and prevention of the predisposing factors are the most important (31.3% and 32.7% respectively). Instead, 394 subjects (26.5%) thought that

increasing awareness about the problem is more valuable. Only, 3.0% did not know how to minimize incidence of poor vision. Females were more likely to answer “don’t know” (63.6%) than males (36.4%) with a significant difference ($p<0.001$). Moreover, responses to this question were significantly related to the residence of the students and the type and the level of their education.

The reported information by the study participants was obtained mainly (47.2%) from media followed by their families (28.6%). Private clinics, friends and relatives constituted other sources of their information (19.4%, 3.2% and 1.6% respectively) as shown in **table (7)**.

Table (1): Association between demographic data and level of awareness of poor vision

		IS poor vision considered a problem?								Chi-Square test
		Yes N=1330 (89.62%)		No N=104 (7.0%)		Don't know N=50 (3.38%)		Total N=1484 (100.0%)		
		N	%	N	%	N	%	N	%	P
Sex	Female	1008	75.8	58	55.8	24	48.0	1090	73.5	<0.001*
	Male	322	24.2	46	44.2	26	52.0	394	26.5	
Residence	Urban	1132	85.1	90	86.5	40	80.0	1262	85.0	0.552
	Rural	198	14.9	14	13.5	10	20.0	222	15.0	
College	Health sciences	524	39.4	36	34.6	8	16.0	568	38.3	<0.001*
	Science	44	3.3	10	9.6	4	8.0	58	3.9	
	Engineering & computer	98	7.4	8	7.7	4	8.0	110	7.4	
	Arts	362	27.2	34	32.7	14	28.0	410	27.6	
	Others	302	22.7	16	15.4	20	40.0	338	22.8	
Study year	First	232	17.4	18	17.3	10	20.0	260	17.5	<0.001*
	Second	216	16.2	8	7.7	6	12.0	230	15.5	
	Third	278	20.9	22	21.2	20	40.0	320	21.6	
	Fourth	272	20.5	12	11.5	6	12.0	290	19.5	
	Fifth	92	6.9	14	13.5	2	4.0	108	7.3	
	Sixth	138	10.4	14	13.5	2	4.0	154	10.4	
	Clinical training year	102	7.7	16	15.4	4	8.0	122	8.2	

*significant at $p < 0.05$

Table (2): Knowledge of students about which age is affected more with poor vision

		Which age is affected more with poor vision?										Chi-Square test
		Children N=170 (11.5%)		Teens N=486 (32.7%)		Adults N=240 (16.2%)		Elders N=588 (39.6%)		Total N=1484 (100.0%)		
		N	%	N	%	N	%	N	%	N	%	P
Sex	Female	112	65.9	348	71.6	166	69.2	464	78.9	1090	73.5	0.001*
	Male	58	34.1	138	28.4	74	30.8	124	21.1	394	26.5	
Residence	Urban	148	87.1	410	84.4	200	83.3	504	85.7	1262	85.0	0.687
	Rural	22	12.9	76	15.6	40	16.7	84	14.3	222	15.0	
College	Health sciences	50	29.4	220	45.3	74	30.8	224	38.1	568	38.3	<0.001*
	Science	10	5.9	24	4.9	4	1.7	20	3.4	58	3.9	
	Engineering& computer	12	7.1	32	6.6	28	11.7	38	6.5	110	7.4	
	Arts	52	30.6	134	27.6	72	30.0	152	25.9	410	27.6	
	Others	46	27.1	76	15.6	62	25.8	154	26.2	338	22.8	
Study year	First	40	23.5	92	18.9	28	11.7	100	17.0	260	17.5	<0.001*
	Second	16	9.4	98	20.2	24	10.0	92	15.6	230	15.5	
	Third	38	22.4	104	21.4	52	21.7	126	21.4	320	21.6	
	Fourth	40	23.5	86	17.7	56	23.3	108	18.4	290	19.5	
	Fifth	8	4.7	28	5.8	30	12.5	42	7.1	108	7.3	
	Sixth	16	9.4	48	9.9	24	10.0	66	11.2	154	10.4	
	Clinical training year	12	7.1	30	6.2	26	10.8	54	9.2	122	8.2	

*significant at p <0.05

Table (3): Knowledge of the study participants about which gender is more affected with poor vision.

		Which gender is affected more by poor vision?										Chi-Square test
		Females N=362 (24.4%)		Males N=286 (19.3)		Both N=2 (.1%)		Don't know N=834 (56.2%)		Total N=1484 (100.0%)		
		N	%	N	%	N	%	N	%	N	%	P
Sex	Female	286	79.0	126	44.1	0	0.0	678	81.3	1090	73.5	<0.001*
	Male	76	21.0	160	55.9	2	100.0	156	18.7	394	26.5	
Residence	Urban	312	86.2	246	86.0	2	100.0	702	84.2	1262	85.0	0.698
	Rural	50	13.8	40	14.0	0	0.0	132	15.8	222	15.0	
College	Health sciences	124	34.3	130	45.5	0	0.0	314	37.6	568	38.3	0.001*
	Science	24	6.6	12	4.2	0	0.0	22	2.6	58	3.9	
	Engineering& computer	28	7.7	20	7.0	0	0.0	62	7.4	110	7.4	
	Arts	116	32.0	70	24.5	2	100.0	222	26.6	410	27.6	
	Others	70	19.3	54	18.9	0	0.0	214	25.7	338	22.8	
Study year	First	64	17.7	42	14.7	2	100.0	152	18.2	260	17.5	<0.001*
	Second	54	14.9	72	25.2	0	0.0	104	12.5	230	15.5	
	Third	84	23.2	56	19.6	0	0.0	180	21.6	320	21.6	
	Fourth	82	22.7	36	12.6	0	0.0	172	20.6	290	19.5	
	Fifth	28	7.7	20	7.0	0	0.0	60	7.2	108	7.3	
	Sixth	20	5.5	26	9.1	0	0.0	108	12.9	154	10.4	
	Clinical training year	3		9		0		0	2	2		

*significant at p <0.05

Table (4): Knowledge about common causes of poor vision

			What is the most common cause of poor vision?								Chi-Square test
			Refraction errors (10.6%)	Cataract (8.4%)	Glaucoma (3.8%)	Eye tumors (.9%)	Senility (6.5%)	Consanguinity (4.0%)	Genetic (37.5%)	Don't know (28.3%)	P
Sex	Female	N	122	88	40	12	64	22	406	336	<0.001 *
		%	77.2	71.0	71.4	85.7	66.7	36.7	73.0	80.0	
	Male	N	36	36	16	2	32	38	150	84	
		%	22.8	29.0	28.6	14.3	33.3	63.3	27.0	20.0	
Residence	Urban	N	142	96	40	12	92	58	470	352	<0.001 *
		%	89.9	77.4	71.4	85.7	95.8	96.7	84.5	83.8	
	Rural	N	16	28	16	2	4	2	86	68	
		%	10.1	22.6	28.6	14.3	4.2	3.3	15.5	16.2	
College	Health sciences	N	110	40	26	4	38	18	240	92	<0.001 *
		%	69.6	32.3	46.4	28.6	39.6	30.0	43.2	21.9	
	Science	N	4	6	2	0	2	12	22	10	
		%	2.5	4.8	3.6	0.0	2.1	20.0	4.0	2.4	
	Engineering & computer	N	6	10	0	2	8	8	28	48	
		%	3.8	8.1	0.0	14.3	8.3	13.3	5.0	11.4	
	Arts	N	16	30	14	8	26	14	152	150	
		%	10.1	24.2	25.0	57.1	27.1	23.3	27.3	35.7	
Others	N	22	38	14	0	22	8	114	120		
	%	13.9	30.6	25.0	0.0	22.9	13.3	20.5	28.6		
Study Year	First	N	22	22	6	8	20	18	82	82	<0.001 *
		%	13.9	17.7	10.7	57.1	20.8	30.0	14.7	19.5	
	Second	N	16	24	0	0	16	10	108	56	
		%	10.1	19.4	0.0	0.0	16.7	16.7	19.4	13.3	
	Third	N	28	24	8	4	24	18	120	94	
		%	17.7	19.4	14.3	28.6	25.0	30.0	21.6	22.4	
	Fourth	N	48	16	16	2	12	8	110	78	
		%	30.4	12.9	28.6	14.3	12.5	13.3	19.8	18.6	
	Fifth	N	16	6	4	0	4	2	46	30	
		%	10.1	4.8	7.1	0.0	4.2	3.3	8.3	7.1	
	Sixth	N	18	10	12	0	10	0	46	58	
		%	11.4	8.1	21.4	0.0	10.4	0.0	8.3	13.8	
Clinical Training year	N	10	22	10	0	10	4	44	22		
	%	6.3	17.7	17.9	0.0	10.4	6.7	7.9	5.2		

*significant at p <0.05

Table (5): Awareness about possibility of poor vision prevention

		Is it possible to prevent poor vision?								Chi-Square test
		Yes N=988 (66.6%)		No N=224 (15.1%)		Don't know N=272 (18.3%)		Total N=1484 (100.0%)		
		N	%	N	%	N	%	N	%	P
Sex	Female	704	71.3	162	72.3	224	82.4	1090	73.5	0.001*
	Male	284	28.7	62	27.7	48	17.6	394	26.5	
Residence	Urban	842	85.2	192	85.7	228	83.8	1262	85.0	0.810
	Rural	146	14.8	32	14.3	44	16.2	222	15.0	
College	Health sciences	416	42.1	70	31.2	82	30.1	568	38.3	<0.001*
	Science	42	4.3	14	6.2	2	0.7	58	3.9	
	Engineering& computer	58	5.9	16	7.1	36	13.2	110	7.4	
	Arts	248	25.1	82	36.6	80	29.4	410	27.6	
	Others	224	22.7	42	18.8	72	26.5	338	22.8	
Study year	First	166	16.8	54	24.1	40	14.7	260	17.5	0.004*
	Second	166	16.8	24	10.7	40	14.7	230	15.5	
	Third	226	22.9	42	18.8	52	19.1	320	21.6	
	Fourth	200	20.2	40	17.9	50	18.4	290	19.5	
	Fifth	68	6.9	20	8.9	20	7.4	108	7.3	
	Sixth	84	8.5	28	12.5	42	15.4	154	10.4	
	Clinical training year	78	7.9	16	7.1	28	10.3	122	8.2	

*significant at p <0.05

Table (6): Knowledge about methods of poor vision prevention

			How can we prevent poor vision?						Chi-Square test		
			Increasing awareness N=394 (26.5%)	Periodic examination N=464 (31.3%)	Treatment of chronic diseases N=96(6.5%)	Prevent causes N=486 (32.7%)	Don't know N=44 (3.0%)	Total N=1484 (100.0%)	P		
Sex	Female	N	244	386	62	370	28	1090	<0.001*		
		%	61.9	83.2	64.6%	76.1%	63.6%	73.5%			
	Male	N	150	78	34	116	16	394			
		%	38.1	16.8	35.4%	23.9%	36.4%	26.5%			
Residence	Urban	N	336	378	82	430	36	1262	0.049*		
		%	85.3	81.5	85.4%	88.5%	81.8%	85.0%			
	Rural	N	58	86	14	56	8	222			
		%	14.7	18.5	14.6%	11.5%	18.2%	15.0%			
College	Health sciences	N	184	156	28	186	14	568	<0.001*		
		%	46.7	33.6	29.2%	38.3%	31.8%	38.3%			
	Science	N	6	20	12	18	2	58			
		%	1.5	4.3	12.5%	3.7%	4.5%	3.9%			
	Engineering & computer	N	22	42	6	34	6	110			
		%	5.6	9.1	6.2%	7.0%	13.6%	7.4%			
	Arts	N	82	148	30	138	12	410			
		%	20.8	31.9	31.2%	28.4%	27.3%	27.6%			
	Others	N	100	98	20	110	10	338			
		%	25.4	21.1	20.8%	22.6%	22.7%	22.8%			
	Study Year	First	N	64	64	14	104	14		260	<0.001*
			%	16.2	13.8	14.6%	21.4%	31.8%		17.5%	
Second		N	88	56	20	56	10	230			
		%	22.3	12.1	20.8%	11.5%	22.7%	15.5%			
Third		N	80	86	18	126	10	320			
		%	20.3	18.5	18.8%	25.9%	22.7%	21.6%			
Fourth		N	74	100	18	94	4	290			
		%	18.8	21.6	18.8%	19.3%	9.1%	19.5%			
Fifth		N	22	44	4	36	2	108			
		%	5.6	9.5	4.2%	7.4%	4.5%	7.3%			
Sixth		N	38	58	6	50	2	154			
		%	9.6	12.5	6.2%	10.3%	4.5%	10.4%			
Clinical Training year		N	28	56	16	20	2	122			
		%	7.1	12.1	16.7%	4.1%	4.5%	8.2%			

*significant at p <0.05

Table (7): The most important sources of information about poor vision

			Which of the following is the most important source of information about poor vision?						Chi-Square test
			Relatives N=24 (1.6%)	Friends N=48 (3.2%)	Family N=424 (28.6%)	Private clinic N=288 (19.4%)	Media N=700 (47.2%)	Total N=1484 (100.0%)	P
Sex	Female	N	12	30	326	216	506	1090	0.011*
		%	50.0%	62.5%	76.9%	75.0%	72.3%	73.5%	
	Male	N	12	18	98	72	194	394	
		%	50.0%	37.5%	23.1%	25.0%	27.7%	26.5%	
Residence	Urban	N	14	38	362	242	606	1262	0.003*
		%	58.3%	79.2%	85.4%	84.0%	86.6%	85.0%	
	Rural	N	10	10	62	46	94	222	
		%	41.7%	20.8%	14.6%	16.0%	13.4%	15.0%	
College	Health sciences	N	0	12	142	80	334	568	<0.001*
		%	0.0%	25.0%	33.5%	27.8%	47.7%	38.3%	
	Science	N	6	2	24	18	8	58	
		%	25.0%	4.2%	5.7%	6.2%	1.1%	3.9%	
	Engineering & computer	N	0	2	22	32	54	110	
		%	0.0%	4.2%	5.2%	11.1%	7.7%	7.4%	
	Arts	N	10	18	150	88	144	410	
		%	41.7%	37.5%	35.4%	30.6%	20.6%	27.6%	
	Others	N	8	14	86	70	160	338	
		%	33.3%	29.2%	20.3%	24.3%	22.9%	22.8%	
Study year	First	N	6	22	86	42	104	260	<0.001*
		%	25.0%	45.8%	20.3%	14.6%	14.9%	17.5%	
	Second	N	4	6	52	52	116	230	
		%	16.7%	12.5%	12.3%	18.1%	16.6%	15.5%	
	Third	N	2	8	100	64	146	320	
		%	8.3%	16.7%	23.6%	22.2%	20.9%	21.6%	
	Fourth	N	4	8	90	54	134	290	
		%	16.7%	16.7%	21.2%	18.8%	19.1%	19.5%	
	Fifth	N	0	2	26	22	58	108	
		%	0.0%	4.2%	6.1%	7.6%	8.3%	7.3%	
	Sixth	N	4	2	42	26	80	154	
		%	16.7%	4.2%	9.9%	9.0%	11.4%	10.4%	
	Clinical training year	N	4	0	28	28	62	122	
		%	16.7%	0.0%	6.6%	9.7%	8.9%	8.2%	

*significant at p <0.05

DISCUSSION

This study was carried out to assess the level of awareness and knowledge about the problem of poor vision in Hail city among the Hail University students. The collected data could help in enhancing eye health promotion in order to reduce the increased needless suffering. A representative sample of 1484 subjects from both sexes, aged from 18-24 years completed a standardized questionnaire and involved in the study.

Regional studies assessing the awareness about low vision are scarce. To the best of our recent knowledge, this is the first study to throw light on the amount of information about the problem of poor vision in Hail city. This study identified high level of awareness (89.62%) among the university students about the problem of poor vision in Hail. Additionally, the study showed a number of factors significantly associated with low levels of awareness including gender, studying in non-scientific colleges and the earlier years of university education. This level of awareness is much higher than what was previously reported by **Alghamdi**⁽⁷⁾ who detected seventy percent of awareness about poor vision among Taif University students. But, the deficient awareness among Taif students was not significantly related to gender, type or level of education.

In this study, most of respondents (39.6%) reported that diminished vision is more common in elders than younger age groups. In contrast, the students in Taif University reported that the most frequently age affected with poor vision was teenagers (47%). Really, old age was reported as a risk factor associated with increasing risk of visual impairment and blindness in many studies⁽⁸⁻¹¹⁾. This is attributed to more prevalence of cataract and other age-related diseases, which are leading causes of visual impairment globally⁽¹²⁾. Another reason is the fact that elders are more likely to associate decline in vision with natural aging, less likely to present for surveillance, monitoring, and follow up⁽¹³⁾. Hence, there is a need for health education programs targeted at the elderly.

Whether there are gender differences in the prevalence of poor vision was discussed.

Nearly 25% of the participants considered females more vulnerable to diminished vision. But, more than half (56.2%) of the students did not know which gender is more affected. In this regard, **Wong *et al.***⁽⁹⁾ reported that poor vision is significantly slightly higher in females. **Stevens *et al.***⁽¹⁴⁾ also reported higher prevalence of blindness in women than men in all world regions. On the other hand, **Huang *et al.***⁽¹⁰⁾ identified no sex difference in the magnitude of visual impairment and blindness.

In the current study, more than one-third (37.5%) of the studied students thought that poor vision a genetic disorder. In addition, errors of refraction, cataract and senility were reported by 10.6%, 8.4% and 6.55% of the study participants respectively. However, relatively great percent (28.3%) of the students did not know exactly the predisposing causes of poor vision. This was more significant among females, urban residents, and participants from college of arts and the first four years. In comparison, the participants in the previous study of **Alghamdi**⁽⁷⁾ reported cataract, glaucoma and errors of refraction (22 % 19.7% and 17% respectively) as the common causes of poor vision. Studies on causes of poor vision from different regions revealed variable results⁽¹⁵⁾. **Huang *et al.***⁽¹⁰⁾ reported that refractive errors have been recognized as the leading cause of visual impairment in Chinese adults in Urban Southern China. Whereas, a study on adults in central Ethiopia revealed that cataract and age-related macular degeneration were the commonest causes of low vision⁽¹⁶⁾. Glaucoma was identified as the leading cause of low vision at Korle Bu Teaching Hospital, Accra, Ghana⁽¹⁵⁾.

In this survey, the student's perception about the possibility of poor vision prevention was favorable. Most of them suggested regular periodic examination of the eyes and prevention of the predisposing factors as the main methods guarding against diminished vision. Instead, increasing awareness about the problem was recommended by others. This is supported by **Saw *et al.***⁽⁸⁾ who stated that blindness and low vision are largely preventable and this depends mainly on timely and proper management of cataract and errors of refraction.

The main source of information of the study participants was media (47.2%) followed by their families (28.6%). Private clinics, friends and

relatives constituted other sources of their information (19.4%, 3.2% and 1.6% respectively).

CONCLUSION

This study has been useful in determining the current regional knowledge towards poor vision among Hail University students in Hail city, Saudi Arabia. The detected level of knowledge and awareness is still not the optimum especially among female students, non-scientific colleges and in the earlier levels of university education. This emphasizes the need to involve such students in a proper eye health education program. Furthermore, different types of media are considered appropriate methods to the university students that should be used to overcome barriers to the improvement of eye health. Certainly, well informed students are likely to increase the awareness and knowledge of others including their families, friends and relatives. This will help increasing the awareness of the community at large. Further much bigger collaborative national studies are recommended.

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