

Knowledge and Awareness of Age Related Eye Diseases: a Population-Based Survey

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Purpose: To determine general awareness and knowledge about cataracts, glaucoma and diabetic retinopathy (DR), as common avoidable causes of blindness in an Iranian population.

Methods: This cross-sectional population-based survey was performed on residents over 45 years of age in Tehran. The sampling frame was the list of all landline phone numbers registered by the Telecommunications Center of Iran, through which systematic random sampling was performed. Data was collected by phone-call interviews and completing a semi-structured questionnaire. Awareness was defined as whether the respondent had ever heard of the disease. Knowledge was assessed by realizing different aspects of each disease.

Results: Of a total of 1,084 eligible people including 574 (52.9%) women and 510 (47.1%) men were included and 957 subjects (response rate, 88.3%) completed the interview. Awareness regarding glaucoma, cataract and DR was 46.6% (95% confidence interval [CI]:43.4 -49.8%), 82.9% (95% CI: 80.5 -85.3%) and 86.2% (95% CI: 84-88.4%). In addition, 19.2% (95% CI: 16.7 -21.7%), 57.3% (95% CI: 54.2-60.4%) and 72% (95% CI: 69.2 -74.8%) of respondents could give at least a basic definition of the mentioned diseases, respectively. Only 22.6% (95% CI: 20-25.2%) and 41.6% (95% CI: 38.5-44.7%) realized glaucoma and DR as a treatable condition; in contrast, 77.2% (95% CI: 74.5-79.9%) categorized cataract as treatable. Only 19% and 7.1% knew that DR and glaucoma may commence without any apparent symptoms.

Conclusion: Compared with cataract and DR, most participants had limited information about glaucoma. In addition, few of the respondents were familiar with the initial symptoms of DR and glaucoma.

Keywords: Public Health; Health Education; Glaucoma; Cataract; Diabetic Retinopathy

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INTRODUCTION

Avoidable conditions, which can be influenced by socioeconomic factors such as low education and poverty, account for the majority of blindness

in the elderly population worldwide.^{1,2} With increased life expectancy in different countries, an upward trend in the prevalence of age-related eye diseases is expected in the future unless appropriate modifications are made in both eye

care delivery systems and lifestyles.

According to a recent population-based study in Iran,³ close to 44% of blinding conditions are attributed to cataracts (31.7%), diabetic retinopathy (DR, 9.8%) and glaucoma (2.4%) which is in line with global and regional studies in this field. Therefore, in the current study we focused specifically on these three avoidable diseases.

Health promotion can reduce the burden of eye diseases and will ultimately limit avoidable causes of blindness and low vision.⁴ For instance, many studies have reported the importance of glycemic and blood pressure control in the development and progression of diabetic retinopathy.⁵ Studies on knowledge, attitudes and practice (KAP studies) can help health providers design better health promotion and education programs.

In recent years, the level of public awareness of major causes of blindness has been reported by some researchers; the results are not encouraging, even in developed countries.⁶⁻¹¹ Previous studies in our country, Iran, reflect less acceptable eye care behaviour in diabetic patients as only 22% of patients with diabetes had regular eye examinations.¹² In another population-based study in Tehran, only 40% of people with visual defects had a history of previous eye examinations, which points to inadequacy of the health services.¹³

The current study evaluates the knowledge, awareness and practice of people from the capital city of Iran, Tehran. The population of Tehran constitutes about one-fifth of the total population of the nation and is a mixture of different ethnic groups from all over the country.

METHODS

This cross-sectional study was performed with the approval of the Ethics Committee of the Ophthalmic Research Center at Shahid Beheshti University of Medical sciences. Five trained assistants collected data through telephone interviews with residents of Tehran. The interviewers received 4 hours of training about the general interviewing principles and the study

protocol. Corresponding questionnaires were completed after explaining the purpose of the study and obtaining oral informed consent from all individuals. All the researchers observed the tenets of the Declaration of Helsinki throughout the study.

Sample size was based on an assumed general awareness of 50% and an ability to detect 3% difference, yielding a sample size of 1,084 individuals. A set of landline telephone numbers of people residing in Tehran was provided by the Telecommunications Company of Iran. Eligible individuals were selected by systematic random sampling. People who were not mentally or physically able to communicate, as well as those who did not consent to participate in the study or dropped out of the three follow-ups were considered as non-responders. In order to avoid information bias (recall bias) and to eliminate the possible correlation between individuals living in the same place, for each contact number, only one person was randomly selected to take part in the study.

The data collection tool was a semi-structured questionnaire (Appendix 1) that contained questions on demographic information, awareness, attitudes and practice with regard to visual impairment in general, and the three major age-related diseases, (glaucoma, cataract and DR). The content of the questionnaire was verified by an expert panel considering previous published studies in this field. In a pilot study, 40 questionnaires were completed and based on the results, the questionnaire was modified. The results of the pilot phase were not used in the final data analysis. During the study, five percent of the questionnaires were randomly re-evaluated by a supervisor.

The questionnaire included four boxes that were completed by the interviewers during the phone conversation. The first box corresponded to demographic data, overall eye health, the use of ophthalmologic services and overall attitude and performance regarding eye diseases and visual health.

Each of the three next boxes related to a major age-related eye disease. In these boxes, the first question, which evaluated the individual's awareness, consisted of general information

about the disease and whether the respondent had ever heard the name of the disease. If the answer to the first question was positive, subsequent questions including definition, initial symptoms, curability and worst visual effects, indicating the participants' knowledge, were asked. The source of information was also recorded. Knowledge consisted of providing at least one simple and correct definition of the disease and overall knowledge was defined as having more information about other subsequent questions, too. If a person was unaware of a disease, the subsequent questions in the related box were left blank.

For each question a series of answers were provided in the questionnaires, but these answers were not read for the interviewees. Instead, the interviewer matched the participant's response with the closest answer in the questionnaire.

Simple and multiple logistic regression analyses were used to study the relationship between the studied variables and demographic data stated as simple and adjusted odds ratio (OR). The ANOVA test and t-test were used when necessary. Data was analyzed by SPSS software (version 17; SPSS, Chicago, IL, USA).

RESULTS

From 1,084 eligible persons, including 510 male (47.1%) and 574 female (52.9%) subjects, 957 answered the questionnaire (response rate, 88.3%). There was a significant difference in the level of illiteracy between responders and non-responders (10.9% vs. 25.3%, $P=0.02$). In contrast, no significant difference was observed in terms of gender ($P=0.6$), history of ophthalmic

therapy ($P=0.6$) and the type of insurance ($P=0.4$) between these two groups.

The mean age of participants, including 509 women (53.2%) and 448 men (46.8%) was 56.2 ± 9.0 (range 45 to 95) years. There was no significant difference in the mean age of women and men (55.8 ± 8.4 vs. 56.7 ± 9.7 , $P=0.103$). The age and sex composition of participants and the survey area are compared in Table 1.

Table 2 shows the demographic characteristics and also general vision care practice of the participants. The proportion of male and female individuals was almost equal and around 10% of participants were illiterate. The coverage of complete or partial insurance in our sample was 83.8% while 16.2% were not covered by any kind of insurance. Only around one third of the participants were employed at the time of the interview, while the other two thirds were retired, housewives or unemployed. The majority of the interviewees (85.6%) mentioned that they have problems in near and/or far vision. Among participants, 28.1% did not use any form of spectacles and 22.6% had not been prescribed any spectacles.

To approximate the attitude of participants toward eye health care, they were asked how much visual loss would affect their daily performance. Around two thirds (60.2%) of the participants believed that vision loss would profoundly affect their daily performance, 15.1% believed in a moderate effect and 16.2% believed in a minimal effect; surprisingly, 8.4% believed that vision loss would have no effect on their daily performance at all.

The results of the awareness and knowledge regarding three major age-related eye diseases are presented separately as follows.

Table 1. Age and sex constitution of individuals over 45 years of age living in Tehran and in the study participants

Age (years)	Men (%)		Women (%)		Total (%)	
	Survey Area	Participants	Survey Area	Participants	Survey Area	Participants
45 -49	246,788 (25.8%)	122 (27.1%)	246,425 (27.03%)	136 (26.6%)	493,213 (26.4%)	258 (23.6%)
50 -54	204,449 (21.4%)	103 (23%)	195,527 (21.4%)	121 (23.8%)	399,976 (21.4%)	224 (23.4%)
55 -59	147,780 (15.5%)	71 (15.9%)	139,638 (15.3%)	81 (15.9%)	287,418 (15.4%)	152 (15.9%)
60 -64	112,843 (11.8%)	63 (14.1%)	104,196 (11.4%)	90 (17.7%)	217,039 (11.6%)	153 (16.02%)
65 -69	87,814 (9.2%)	30 (6.7%)	79,107 (8.6%)	30 (5.9%)	166,921 (8.9%)	60 (6.2%)
70 -74	72,965 (7.6%)	32 (7.2%)	64,842 (7.1%)	34 (6.7%)	137,807 (7.3%)	66 (6.9%)
75 -79	43,125 (4.5%)	13 (2.9%)	41,897 (4.5%)	14 (2.8%)	85,022 (4.5%)	27 (2.8%)
+80	37,647 (3.9%)	14 (3.1%)	40,008 (4.3%)	3 (0.6%)	77,655 (4.1%)	17 (1.7%)
Total	953,411 (100%)	448 (100%)	911,640 (100%)	509 (100%)	1,865,051 (100%)	957 (100%)

Table 2. Demographic features and general eye care practice among the study participants

	Number	(%)
Sex		
Female	509	(53.2)
Male	448	(46.8)
Education		
Illiterate	104	(10.9)
<6	237	(24.9)
6-12	385	(40.5)
College or university	224	(23.6)
Job		
Employed	269	(28.6)
Retired	254	(27)
Unemployed	34	(3.6)
Housewife	385	(40.9)
Insurance coverage		
None	154	(16.2)
Partial	601	(63.4)
Complete	193	(20.4)
Self-reported refractive errors		
Hyperopia	419	(44.4)
Myopia	102	(10.8)
Both	287	(30.4)
None	135	(14.3)
Spectacle prescription		
Hyperopia	399	(42.2)
Myopia	90	(9.5)
Both	242	(25.6)
None	214	(22.6)
Spectacle use		
Hyperopia	394	(42.2)
Myopia	89	(9.5)
Both	188	(20.2)
None	262	(28.1)
History of eye examination by an ophthalmologist		
No	136	(14.7)
Yes	791	(85.3)
History of ophthalmic medical or surgical treatment		
No	771	(81.8)
Yes Compliance	150	(15.9)
Yes Non-compliance	21	(2.2)

Note: Any discrepancies between the total number and the sum of the subgroup figures are due to missing data

Cataracts

Out of 957 participants, 793 (82.9%) had heard about cataracts before the interview and 548 (57.3%) could give a simple, correct definition of cataract. About half (47.6%) of the participants mentioned cataract as a cause of vision loss and 77.2% believed that the disease is treatable (Table 3). The main sources of information were friends and relatives in 66.8%, and the media in 17.9% of participants (Table 4).

The overall level of knowledge about cataracts was 1.48 times higher in women as compared to men. There was no significant difference in cataract awareness by type of insurance (partial vs. complementary); however, the overall knowledge was 2.2 times higher in those with complementary insurance than subjects with no insurance at all. There was no correlation between occupation and overall knowledge about the disease. Overall knowledge was 1.5 times higher in individuals with a history of self-reported visual problems than those with no history of previous ophthalmic disease. Compared with illiterate people, individuals with academic education (university or college) and those with 6 to 12 years of school education had 1.9 and 1.8 times higher knowledge, respectively (Table 5).

Diabetic Retinopathy

Among participants, 86.2% were aware of and 72% had basic knowledge about diabetic retinopathy. The majority (71.4%) of individuals mentioned DR as a reason for vision loss and 41.6% believed that the disease is treatable (Table 3). Two thirds of individuals mentioned their friends and relatives and 29.8% of individuals mentioned the media as their main source of information, respectively (Table 4).

Table 3. Awareness and knowledge of people over 45 years of age in Tehran about three avoidable causes of blindness

	Glaucoma		Cataract		Diabetic Retinopathy		P-value
	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	
Awareness	446 (46.6)	43.4 to 49.8	793 (82.9)	80.5 to 85.3	825 (86.2)	84 to 88.4	<0.001
Knowledge (knowing the definition)	184 (19.2)	16.7 to 21.7	548 (57.3)	54.2 to 60.4	689 (72)	69.2 to 74.8	<0.001
Knowledge (realized it as a blinding disease)	311 (32.5)	29.5 to 35.5	456 (47.6)	44.4 to 50.8	683 (71.4)	68.5 to 74.3	<0.001
Knowledge (realized the disease as a treatable condition)	216 (22.6)	20 to 25.2	739 (77.2)	74.5 to 79.9	398 (41.6)	38.5 to 44.7	<0.001

CI, confidence interval

Table 4. Source of information in people over 45 years of age in Tehran who had overall knowledge about three avoidable causes of blindness

Information Source	Glaucoma		Cataract		Diabetic Retinopathy		P-value
	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	
Ophthalmologists	37 (8.4)	6.6 to 10.2	100 (12.8)	10.7 to 14.9	36 (4.4)	3.1 to 5.7	<0.001
Health workers	16 (3.7)	2.5 to 4.9	20 (2.6)	1.6 to 3.6	50 (6.2)	4.7 to 7.7	<0.001
Family / Friends	272 (62.1)	59 to 65.2	523 (66.8)	63.8 to 69.8	483 (59.6)	56.5 to 62.7	<0.001
Media	113 (25.8)	23 to 28.6	140 (17.9)	15.5 to 20.3	242 (29.8)	26.9 to 32.7	<0.001

CI, confidence interval

Only 19% of individuals believed that the disease may start without any signs or symptoms and most of them had no information about the initiating symptoms.

In this study, women’s knowledge of DR was 1.84 times higher than that of men. Moreover, individuals with academic education had 2.2 times and individuals with 6 to 12 years of school education had 2.1 times more information about the disease as compared to illiterate respondents, respectively. There was no significant correlation between history of previous ophthalmic disease or occupation with the level of knowledge (Table 5).

Glaucoma

Only 46.6 % of participants had heard about glaucoma and only 19.2 % could give a simple

correct definition of the disease. About one third of individuals (32.5%) mentioned glaucoma as a cause of vision loss and 22.6% of the participants believed that the disease is treatable (Table 3). Sixty-two percent of participants mentioned their friends and relatives and 25.8% of participants mentioned the media as their main source of information, respectively (Table 4).

In all fields, the participants had significantly less information about glaucoma in comparison with the other two diseases ($P < 0.001$ for all comparisons, Table 3).

Only 31 participants (7.1%) believed that the onset of glaucoma may be without any signs or symptoms and the majority of individuals had no information about the initiating symptoms. Women were two times more likely to know about glaucoma than men. There was no

Table 5. Demographic factors associated with overall knowledge of Tehran residents above 45 years of age

	Glaucoma		Cataract		Diabetic Retinopathy	
	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)	OR (95% CI)	AOR (95% CI)
Age (per 10 years)	0.92 (0.73,1.15)	0.94 (0.71,1.23)	0.94 (0.82,1.07)	1.02 (0.86,1.2)	0.92 (0.79,1.06)	1.08 (0.91,1.29)
Sex						
Male	Ref	Ref	Ref	Ref	Ref	Ref
Female	2.01* (1.3,3.1)	1.93* (1.13,3.32)	1.48* (1.15,1.92)	1.48 (1.06,2.06)	1.59* (1.21,2.09)	1.84* (1.29,2.62)
Education						
Illiterate	Ref	Ref	Ref	Ref	Ref	Ref
<6	1.53 (0.55,4.26)	1.41 (0.49,4.11)	1.04 (0.65,1.68)	1.0 (0.6,1.67)	0.97 (0.57,1.64)	1.03 (0.59,1.8)
6-12	2.42 (0.93,6.29)	2.64 (0.96,7.26)	1.76* (1.13,2.76)	1.8* (1.1,2.97)	1.84* (1.13,2.99)	2.11* (1.23,3.61)
Academic	4.17* (1.59,10.93)	5.32* (1.89,14.99)	1.93* (1.2,3.12)	1.97* (1.15,3.37)	1.78* (1.06,2.97)	2.23* (1.25,3.97)
Insurance coverage						
None	Ref	Ref	Ref	Ref	Ref	Ref
Partial	2.14* (1.4,5.6)	2.01 (0.93,4.37)	1.36 (0.95,1.95)	1.31 (0.9,1.92)	0.83 (0.57,1.21)	0.85 (0.57,1.25)
Complete	3.49* (1.56,7.84)	2.44* (1.06,5.62)	2.29* (1.48,3.53)	1.77* (1.12,2.79)	1.22 (0.79,1.89)	0.98 (0.61,1.56)
Self-reported visual problems						
None	Ref	Ref	Ref	Ref	Ref	Ref
Yes	1.63 (0.82,3.21)	1.12 (0.55,2.27)	1.81* (1.24,2.66)	1.52* (1.02,2.27)	1.25 (0.84,1.86)	1.1 (0.73,1.67)
Job						
Employed	Ref	Ref	Ref	Ref	Ref	Ref
Other	2.11* (1.23,3.63)	1.89 (0.98,3.65)	1.32 (0.99,1.75)	1.17 (0.8,1.7)	1.22 (0.9,1.65)	0.95 (0.64,1.41)

OR, odds ratio; CI, confidence interval; AOR, adjusted odds ratio; Ref, reference group; *P value<0.05

significant difference between those with or without partial insurance in terms of the level of glaucoma awareness; however, participants with complete insurance were 2.4 times more aware than those without any kind of insurance. Similarly, participants with academic education had 5.3 times more information about the disease than those who were illiterate. There was no significant correlation between history of self-reported visual problems or occupation and the level of disease knowledge (Table 5).

DISCUSSION

To the best of our knowledge, this is the first Iranian study on awareness, knowledge and attitude of individuals aged 45 years or above with regard to major age-related eye diseases, i.e. glaucoma, cataract and diabetic retinopathy. The significance of such studies in community health planning becomes more evident in light of the fact that these diseases are the main causes of blindness in many countries.¹ In this study, the participants' level of awareness about glaucoma was much lower than cataracts and diabetic retinopathy (46.6% vs. 82.9% and 86.2%, respectively). Lack of glaucoma awareness is a major health problem also reported in India,⁷ China¹⁴ and Nepal.¹⁵

Participants had significantly less knowledge about glaucoma than they did about either cataracts or DR. In a comparable study conducted in Australia, most people had high knowledge of cataracts (74%), whereas their knowledge of glaucoma was low (19%).⁸

Table 6 compares the level of awareness and

knowledge of individuals about glaucoma and cataract in other countries.

Based on our findings, women had higher knowledge regarding all three diseases. These results have also been reported in studies from the USA¹⁷ and Australia.¹⁸ Women's knowledge has been reported to be lower than men's in regions like southern India¹⁹ and Nepal,¹⁵ but equal in Switzerland,⁹ Germany,²⁰ USA²¹ and Australia.²² In the current study the second source of information was the media. As elderly women in Iran are usually housewives or retired, compared to men, they may have more time to be in touch with educational programs broadcast from different types of media. This may explain the higher level of knowledge about eye disease in women in this study.

In our survey, no correlation was noted between age and knowledge of eye diseases. As the level of education and gender was comparable in different age groups in our study, we do not expect a significant relationship between age and the level of knowledge. The same result has been reported elsewhere; in Switzerland⁹ and the USA,⁶ studies also reported that knowledge of glaucoma was independent of age. There are, however, other studies in which older people were more aware of glaucoma.^{7,16} It seems that there are different patterns of correlation between age, sex and knowledge of these diseases, probably due to differences in culture and educational systems in various communities. As expected, people with higher education were more well-informed about all three diseases compared to illiterate people. This result is similar to several other reports.^{8,17,19}

Table 6. Awareness and knowledge about glaucoma and awareness of cataract in various countries

Study	Year	Country	Age (year)	Setting	Glaucoma (%)		Cataract (%)
					Awareness	Knowledge	Awareness
Livingston et al ⁸	1998	Australia	>40	PB	79.0	19.0	92.0
Gasch et al ²¹	2000	USA	All ages	CB	72.0	-	-
Dandona et al ⁷	2001	India	16-70	PB	2.3	2.0	69.8
Lau et al ¹⁴	2002	China	>45	PB	78.4	10.2	90.0
Saw et al ¹⁰	2003	Singapore	>35	CB	22.9	-	-
Mansouri et al ⁹	2006	Switzerland	35-70	PB	24.7	-	-
Tenkir et al ¹¹	2010	Ethiopia	40-80	CB	2.4	-	-
Thapa et al ¹⁵	2011	Nepal	>40	PB	2.4	1.1	6.7
Current study	2014	Iran	>45	PB	46.9	19.5	83.0

PB, population-based; CB, clinical-based

In the current study, the main source of information was family and friends followed by the media. This is consistent with previous studies in Ethiopia,¹¹ Germany²⁰ and India⁷ where the most important source of information was also close family and friends. In a study from Switzerland, ophthalmologists were the primary source of information for patients.⁹ In another study in the rural population of India, the media was in the first degree of importance.¹⁹

Although glaucoma is one of the main causes of blindness worldwide, only 32.5% of individuals recognized it as a blinding disease. This is similar to a study in Nepal where only about a quarter of individuals (26.5%) identified glaucoma as a cause of blindness.¹⁵ Conversely, in Philadelphia, 74% of participants believed that glaucoma caused blindness.⁶ The results of these studies indicate that awareness and knowledge of people about glaucoma is lower than the other two diseases; therefore, planning is necessary to increase public awareness to identify symptoms and complications of this disease.

Our study had some limitations that should be taken into account. We only studied residents who lived in households and had landline phone numbers. Although this group of people includes the majority of inhabitants in the capital city of Iran, they may not be representative of the whole population, which may have lower socioeconomic status.

In summary, although the majority of people aged more than 45 years in Tehran have a positive attitude toward the importance of vision loss and have heard about common vision threatening eye diseases including cataract and DR, their knowledge about symptoms, complications, treatment and prognosis of these diseases was inadequate. Lack of knowledge and awareness about glaucoma was another predominant finding of this study, which was obvious in most study participants. In the current survey, men, illiterate subjects, people without health insurance and those without a history of self-reported visual problems were less well-informed regarding common and avoidable eye diseases. Therefore, eye health educational programs should be targeted toward these subgroups.

Conflicts of Interest

None.

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Appendix 1. Questionnaire

<p>1-Age:</p> <p>2- Sex female <input type="checkbox"/> male <input type="checkbox"/></p> <p>3-Education: Illiterate<input type="checkbox"/> <6<input type="checkbox"/> 6-12 <input type="checkbox"/> College or university<input type="checkbox"/></p> <p>4-Employment Employed<input type="checkbox"/> Retired<input type="checkbox"/> Unemployed<input type="checkbox"/> Housewife<input type="checkbox"/></p> <p>5-Insurance: Complete <input type="checkbox"/> Partial<input type="checkbox"/> None<input type="checkbox"/> (For the questions 6, 7 and 8 please choose one of the following codes) Far vision (1) Near vision (2) Both (3) None (4)</p> <p>6- Have you ever had any visual problem? <input type="checkbox"/></p> <p>7-Have you ever been prescribed spectacles for near or far visual impairment? <input type="checkbox"/></p> <p>8-Which types of spectacles do you wear consistently? <input type="checkbox"/></p> <p>9-Has an ophthalmologist visited you so far? Yes because: I had eye problem <input type="checkbox"/> only for check-up <input type="checkbox"/> No because: no need felt<input type="checkbox"/> financial reasons<input type="checkbox"/> limited time<input type="checkbox"/> other reasons<input type="checkbox"/></p> <p>10-History of a major ophthalmologic treatment including surgery, laser or medical therapy? Yes<input type="checkbox"/> No<input type="checkbox"/></p> <p>11-How does vision loss affect your daily performance? Very high<input type="checkbox"/> High<input type="checkbox"/> Moderate<input type="checkbox"/> Low<input type="checkbox"/> None</p>	<p>17-Have you ever heard about <u>diabetic retinopathy (DR)</u>? Yes<input type="checkbox"/> No<input type="checkbox"/></p> <p>18-Give a simple definition of DR? It is a preventable side effect of diabetes or high blood sugar on eyes<input type="checkbox"/> It is a side effect of diabetes on posterior parts of eye<input type="checkbox"/> Any damage of retinal vessels in diabetic patients<input type="checkbox"/> A vision threatening condition caused by high blood sugar<input type="checkbox"/></p> <p>19-From the following items, which one is the main source of your information about DR? Ophthalmologist <input type="checkbox"/> Family Members or Friends<input type="checkbox"/> General Practitioner <input type="checkbox"/> Optometrist<input type="checkbox"/> Medical Staff<input type="checkbox"/> Media <input type="checkbox"/> Books or Magazines<input type="checkbox"/> Other.....</p> <p>20-What is the worst effect of DR? Blindness<input type="checkbox"/> Low Vision<input type="checkbox"/> Pain<input type="checkbox"/> Cosmetic Problems<input type="checkbox"/> Other.....</p> <p>21-Is DR a treatable condition? Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/></p> <p>22-What is the first presentation of DR in most cases? Visual loss<input type="checkbox"/> Pain<input type="checkbox"/> It may start without any alarming symptoms or signs<input type="checkbox"/> Other.....</p>
<p>12-Have you ever heard about <u>cataract</u>? Yes<input type="checkbox"/> No<input type="checkbox"/></p> <p>13-Give a simple definition of cataract It is white spot in the eye<input type="checkbox"/> It is a white pupil<input type="checkbox"/> The opacification of the lens <input type="checkbox"/> Any changes in eye lens which make it unclear or white<input type="checkbox"/> Visual loss due to a covering shield in front of light rays<input type="checkbox"/></p> <p>14-From the following items, which one is the main source of your information about cataract? Ophthalmologist <input type="checkbox"/> Family members or Friends<input type="checkbox"/> General Practitioner <input type="checkbox"/> Optometrist<input type="checkbox"/> Medical Staff<input type="checkbox"/> Media <input type="checkbox"/> Books or Magazines<input type="checkbox"/> Other.....</p> <p>15-What is the worst effect of cataract? Blindness<input type="checkbox"/> Low Vision<input type="checkbox"/> Pain<input type="checkbox"/> Cosmetic Problems<input type="checkbox"/> Other.....</p> <p>16-Is cataract a treatable condition? Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/></p>	<p>23-Have you ever heard about <u>glaucoma</u>? Yes<input type="checkbox"/> No<input type="checkbox"/></p> <p>24-Give a simple definition of glaucoma? High pressure of the eye <input type="checkbox"/> An eye disease which limits the visual field <input type="checkbox"/> An eye disease which damages the optic nerve<input type="checkbox"/> Increasing the internal liquid of eye<input type="checkbox"/></p> <p>25-From the following items, which one is the main source of your information about glaucoma? Ophthalmologist <input type="checkbox"/> Family Members or Friends<input type="checkbox"/> General Practitioner <input type="checkbox"/> Optometrist<input type="checkbox"/> Medical Staff<input type="checkbox"/> Media <input type="checkbox"/> Books or Magazines<input type="checkbox"/> Other.....</p> <p>26-What is the worst effect of glaucoma? Blindness<input type="checkbox"/> Low Vision<input type="checkbox"/> Pain<input type="checkbox"/> Cosmetic problems<input type="checkbox"/> Other.....</p> <p>27-Is glaucoma a treatable condition? Yes<input type="checkbox"/> No<input type="checkbox"/> Don't know<input type="checkbox"/></p> <p>28-What is the first presentation of glaucoma in most cases? Visual loss<input type="checkbox"/> Pain<input type="checkbox"/> It may start without any alarming symptoms or signs<input type="checkbox"/> Other</p>