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Why are there gender inequalities in visual impairment?

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Abstract

Background: In high-income countries the prevalence of blindness and visual impairment is higher among women, regardless of age although the mechanisms that produce these gender inequalities are not well understood. The objectives of this study were to analyse gender inequalities in the prevalence of blindness and visual impairment, age of onset, diagnosed and undiagnosed status, and related eye diseases among visually impaired individuals.

Methods: Data were obtained from the 2008 Spanish Survey on "Disability, Personal Autonomy and Dependency Situations, (n=213,626) participants 360 blind (160 men and 200 women), and 5,560 with some visual impairment (2,025 men and 3,535 women). The prevalence of blindness and visual impairment, age of onset of visual impairment, and diagnosed and undiagnosed eye diseases was calculated. Hierarchical multiple logistic regression models were fit to test gender differences.

Results: Women were more likely to report visual impairment [crude OR=1.6 (95% CI:1.56-1.74)]. Prevalence of diagnosed cataract was higher among visually impaired women [crude OR=1.4 (95% CI: 1.25-1.67)] whereas undiagnosed eye disease [crude OR=0.7 (95% CI: 0.64-0.81)] or diagnosed glaucoma [(aORsex=0.8 (95% CI: 0.65-0.93)] were more frequent among visually impairment men. These associations were not explained by age or educational level.

Conclusions: Strong gender inequalities were observed, with a higher prevalence of visual impairment and related cataracts among women, which could be related to gender inequalities in access to health care, and undiagnosed eye disease and related glaucoma among men, which could be related to their gender socialization resulting in less frequent and effectively use of health care services.

Keywords: Vision Disorders, Blindness, Sexism, Epidemiology

INTRODUCTION

Blindness and low vision are widely recognized as a global public health problem and as important causes of impairment.(1) It is estimated that 32.4 million people were blind in 2010 (60% women), and 191 million had moderate or severe visual impairment (57% women).(2) The cost of visual impairment is estimated at about $3 trillion per year worldwide, and this burden is expected to increase by approximately 20% within 10 years.(3) Globally, visual impairment is generally more prevalent among women, regardless of age,(4) with the female/male prevalence ratio estimated to be 1.1 to 1.5 in 2010.(2) The prevalence of blindness and visual impairment is also higher among women in high-income countries, regardless of age,(4,5) although the mechanisms that produce these gender inequalities are not well understood. Gender inequalities could be the result of gender differences in incidence or in the causes that converts incidence in persistent prevalence, such as lower health care access or the chronification of the health problem. .

Gender inequalities can be related to mechanisms that differ by sex, including access barriers to health care services (6) and lower treatment effort (7,8) among women, or less help-seeking behaviour resulting in delayed diagnosis and treatment among men. Women are generally more likely to use health care services,(8) and a growing body of evidence from gender-specific studies highlights the tendency among men to delay seeking help when they become ill. Social norms regarding traditional masculinity constrain help-seeking among men, mainly due to the their attributed role of self-sufficiency and restrained emotional expressivity, influencing their perception of symptoms and weakness.(9,10) For example, an Australian study found that women were more likely to use optometrist services, a fact that was not explained by incidence

or barriers to access, but probably by differences in their attitude to when and how to seek health services.(11)

Examining gender differences in visual impairment according to current age, age of onset, the diagnosed or undiagnosed reason of visual impairment, and the causes of blindness and visual impairment among people with a diagnosis could contribute to the better understanding of the mechanism that underlie gender inequalities in blindness and visual impairment. Evaluating gender inequalities according to current age and age of onset could allow us to understand whether gender inequalities can be related to an earlier or later incidence by sex. Describing gender inequalities according to the diagnosed or undiagnosed reason of visual impairment could help understanding the role of eye care services and demands, and finally, reporting the causes of blindness and visual impairment among people with a diagnosis may help understanding what eye diseases could be involved and concretize the actions to reduce the inequalities, if needed and possible.

Thus, the objectives of this study were to analyse gender inequalities in: 1) the prevalence of blindness and visual impairment; 2) the age of onset of visual impairment; 3) the prevalence of diagnosed and undiagnosed eye disease among visually impaired people; and 4) the cause of blindness or visual impairment among people with a diagnosis.

METHODS

Sample

Data were obtained from the 2008 Spanish Survey on "Disability, Personal Autonomy and Dependency Situations" a cross-sectional survey based on a representative sample of the non-institutionalized population of Spain. The methods of the survey are described elsewhere (12). The questionnaire included self-reported information on visual impairment and socio-demographic data. The sample size, which was the largest produced in Spain, collected variables of visual impairment and blindness and was selected using a multi-stage random sampling strategy. The first- and second stage units were census tracts and family households, respectively. One adult aged ≥15 years was selected from each household to complete the questionnaire. A total of 213,626 people were interviewed (103,093 men and 110,533 women). Data were collected through face-to-face interviews at home between November 2007 and February 2008. Response rate was 96.1%, 64.6% of individuals were those initially selected, and the rest were replaced (Ministerio de Sanidad y Consumo, 2006). Once a household was selected, failed initial attempts to contact the interviewee were followed up with several additional attempts before replacing households where all attempts failed.

Measures

Vision outcomes

The definition of visual impairment was based on three questions focused on blindness, near visual impairment, and distance visual impairment. To determine the severity of visual impairment, the following question was asked: "Are you blind or only able to differentiate between light and darkness?" Information on visual impairment was elicited using the following questions: "Do you have significant difficulty reading

newspaper print, even when wearing glasses or contact lenses?" and "Do you have significant difficulty recognizing someone across the street (four meters distance), even when wearing glasses or contact lenses?" Blind individuals, and those with near or distance visual impairment were classified as having "some visual impairment". The classification for blindness and visual impairment used in the Survey follows the International Classification of Impairments, Disabilities and Handicaps (ICIDH). Respondents who were blind or had some visual impairment were asked, "Have you been diagnosed with any of the following illnesses? (cataract, diabetic retinopathy, glaucoma, macular degeneration), and those who responded affirmatively were classified as having been diagnosed with each specific eye disease. Individuals who responded that they had never being diagnosed with these diseases (representing 90% of blindness in Europe) (13) nor with myopia magna or retinitis pigmentosa were classified as undiagnosed.

Predictor variables

Age groups were constructed as follows: <25 (16 to 24) years, 25 to 64 years, 65 to 79 years, and ≥80 years.

To detect congenital and perinatal conditions, data were collected on the age of onset of visual impairment, and were categorised as follows: ≤2 years, 3 to 24 years, 25 to 64 years, 65 to 79 years, and ≥80 years.

A four-category co variable for educational level was constructed depending on the level attained within the Spanish education system, as follows: 1) illiterate (unable to read or write), 2) incomplete primary education), 3) complete primary education (or equivalent) and 4) secondary or higher (including first and second stage secondary education, intermediate and higher vocational studies, and university degree or

equivalent). When educational level was introduced for adjusting purposes in the regression model, an eight-category co variable was included in the analysis.

Statistical analysis

First, the prevalence of blindness, visual impairment, diagnosed and undiagnosed eye disease, and age of onset of visual impairment were calculated for each gender, and also separately for each age group and educational level. Second, hierarchical multiple logistic regression models were fit to test gender differences, with men as the reference category. Model 1 was adjusted for age (within the age strata), Model 2 educational level and Model 3 for age and educational level. All analyses were stratified by age group at the time of the interview and educational level and were carried out using SPSS v17.0.

RESULTS

Description of the sample

The general description of the sample is shown in Table 1. In both sexes the prevalence of visual impairment and blindness was higher among individuals over 65 years, and those with less than primary education. Different sex patterns ($p< 0.001$) in the prevalence of visual impairment and blindness were observed for age, educational level.

Gender inequalities in the prevalence of visual impairment but not blindness

The prevalence of visual impairment was generally higher among women than men [age adjusted OR=1.4 (95% CI:1.30-1.46)] (Table 2); this observation was not fully explained by age or educational level. The overall prevalence of blindness was 0.2 % and no significant differences were observed between men and women [OR=1.2 (95% CI: 0.95-1.44)] (Table 3).

Gender inequalities by age group and age of onset of visual impairment

Among individuals over 24 years, the prevalence of visual impairment was higher among women than men (Table 2), and this gender difference became more marked in the >65 years age group; again, this observation was not explained by age within the age group or by educational level. However, we observed no notable increase in visual impairment in the ≥80 years group compared to the 65 to 80 years group. No significant gender differences were observed for blindness (Table 3). Gender differences did not vary markedly after adjusting for age and educational level (Table 2).

Men were more likely to become visually impaired [(ORsex=0.7 (95% CI: 0.56-0.89)] or blind [(ORsex=0.4 (95% CI: 0.19-0.76)] earlier in life (before age 3 years), and women later in life [65 to 79 years: ORsex=1.4 (95% CI: 1.18-1.60), and ORsex=1.8 (95% CI: 1.11-2.99), respectively] (Table 2 and 3). Gender differences were partly explained by

variation in age within each age group.

Gender inequalities in the prevalence of diagnosed and undiagnosed eye disease

Among individuals with some visual impairment, men (39.8%) were more likely than women (32.3%) to report that they had not been diagnosed with eye disease, and this difference was not explained by age or educational level [OR=0.8 (95% CI: 0.71-0.90)] (Table 2). No gender differences were observed for blindness (Table 3).

Gender inequalities in the cause of blindness or visual impairment

Among visually impaired individuals who had been diagnosed with eye disease, the prevalence of cataracts was significantly higher among women [age and educational level adjusted OR=1.3 (95% CI: 1.08-1.47)], whereas glaucoma was more prevalent among men [(OR_{sex}=0.8 (95% CI: 0.66-0.95)], and these differences were not explained by age or educational level (Table 2). The prevalence of other diagnoses was also higher among women after adjustment for age (OR_{sex}=1.2 (95% CI: 1.02-1.51)]. We observed no gender differences among diagnosed blind individuals in the prevalence of eye disease, except for glaucoma [(OR_{sex}=0.5 (95% CI: 0.28-0.86)] (Table 3).

DISCUSSION

This study produced three main findings: 1) the prevalence of visual impairment was higher among women (after age 24 years) and increased with age; we observed no gender differences in the prevalence of blindness; 2) undiagnosed eye disease was more common among visually impaired men; 3) among visually impaired people with a diagnosed eye disease, cataracts and "other diagnoses" were more common among women, and glaucoma was more common among men.

As far as we know this is the first study describing gender inequalities on the most prevalent diagnosed eye diseases among the visually impaired population. The results are important to help focus on mechanism and determinants for specific eye diseases associated with the higher prevalence of visual impairment among women. Additionally, this is the first time that non-diagnosis eye diseases among the visually impaired and the gender inequalities related are described, as well as the gender inequalities related to age of onset the visual impairment.

This study was based on a large, representative sample of all regions of Spain, a high-income country, and for the first time we were able to overcome some of the previous research limitations due to the exceptionally large data set. This allowed the research to stratify the analyses by sex, age, age of onset, diagnosis status, and eye disease, while controlling for age and educational level. Finally, at the time of this study, Spain had free universal access to health care.

Gender inequalities in the prevalence of visual impairment

Our results are consistent with those of other studies reporting a higher prevalence of visual impairment among women (2,4). Since there is no evidence of gender differences in the incidence of visual impairment (14,15) or ocular diseases (16,17), and women are

more likely to seek early health care assistance (11,18), these results may be partly due to gender inequalities in diagnosis or treatment effort. The Spanish National Health System offers free and universal eye care services for diagnosis and treatment of eye disease. However, of all surgeries and outpatient clinics in Spain, cataract surgery and outpatient ophthalmology visits have the longest waiting lists and the greatest number of waiting days (19). Among women, less intense therapeutic effort related to differences in waiting list prioritization as well as lower capacity to pay for private services could underlie the gender inequalities observed (7,20,21).

Visual impairment was more common in males aged ≥24 years, or who had become visually impaired or blind before 2 years of age. While childhood blindness and visual impairment is relatively rare compared to adult blindness, it remains a significant problem. In Europe, the prevalence of childhood blindness is between 0.1 and 0.4 per 1000 children (22). Biological factors such as preterm birth are associated with blindness and visual impairment among children (23), and boys born before 25 weeks gestation are more susceptible to visual impairment than girls (24). While gender differences have not been examined in detail, blindness and visual impairment was found to be more prevalent among Swedish boys (25) which is consistent with our findings.

The absence of gender differences in blindness may be because the tendency among women to seek treatment earlier and be diagnosed earlier than men is compensated by the delay in treatment produced by their lower therapeutic effort (e.g. women wait almost twice as long as men to be operated, 2.9 and 1.73 months, respectively)(26). This effect, combined with long waiting lists for cataract surgery in Spain and the use of a relatively low mean Visual Acuity (VA) at which cataract surgery is indicated by

ophthalmologists in Spain (mean VA=0,07 in Spain vs mean VA = 0.17 in Denmark) (27), could explain why gender inequalities tend to disappear as visual impairment deteriorates and becomes blindness.

Gender differences in the prevalence of non-diagnosed visual impairment

Non-diagnosis of eye diseases among the visually impaired does not explain the gender differences observed in visual impairment, as it is more frequent among men (39.8% of men and 32.2% of women). The role of traditional masculinity and the consequences in relation to the use of health care services, could again be involved in the higher prevalence of non-diagnosis of eye diseases observed. The traditional social model of hegemonic masculinity conditions men to control themselves, be active, strong, endure pain, and not seek help (28,29). This social model is associated with risky behaviors that are also linked to their lower life expectancy compared to women, including: difficulty in admitting that they have symptoms of body alarm,; postponing discomfort as it is experienced as an uncontrollable threat of his body, delaying attendance at health services because it is perceived as a failure of self-sufficiency; and poor adherence to treatment (9,10,30). For example it has been reported that 41.7% of men in the US who reported visual impairment but did not seek care, indicating "no need" as the main reason, compared to 28.7% of women.(18)

Gender differences in the diagnosed causes of visual impairment

Cataract accounted for most of the gender inequalities observed and it was more common among visually impaired women (71.6% vs 63.6%). This is a highly treatable ambulatory condition that is provided free for Spanish citizens and as a consequence, no major clinical or economic barriers would be expected. However, of all surgeries and outpatient clinics in Spain, cataract surgery has the largest waiting lists and the greatest

number of waiting days.(31) The lack of objective criteria in the prioritization of cataract surgery waiting lists in Spain (32) has being pointed out as a determinant factor for inequalities and gender discrimination as women wait almost twice as long as men to be operated on in the Spanish public system (2.9 and 1.73 months, respectively). (26) In addition, patients may experience a "post-referral waiting" that is, between referral and inclusion in the waiting list.(33) The consequence of gender discrimination as an easier acceptance and higher priority among men for the cataract surgery waiting list (34) could explain why while women compose 68,9% of the diagnosed cataract, they only represented 57,2% of the cataract surgeries reported in the public system according to Spanish data.(35) However, this is speculative and deserves further research.

The role of traditional masculinity and the consequences in relation to the use of health care services, as men's tendency to delay health care attendance and non-compliance for regular check-ups and treatments (9,10), may cause them to develop advanced disease that can no longer be treated and could explain the higher prevalence of glaucoma as the cause of visual impairment and blindness among men. According to multiple studies, approximately half of people with glaucoma are unaware of it, which is particularly worrying because glaucoma leads to irreversible loss of vision.(36) For this reason, going to regular check-ups is crucial in detecting glaucoma symptoms and lowering intraocular pressure that prevents loss of vision.

In conclusion, we observed strong gender inequalities in visual impairment in Spain, with a higher prevalence of visual impairment and related cataracts among women, and undiagnosed eye disease and related glaucoma among men. Women discrimination, especially when prioritizing cataract surgery waiting lists, and hegemonic masculinity

cunductual behaviors related to men's less frequent and effective use of health care services could be associated with the gender inequalities observed. These results highlight the need to implement policies to reduce gender inequalities in the prevalence of visual impairment related to health care access. Sensitization actions to prevent discrimination of women when prescribing treatment or prioritizing for waiting list among professionals are recommended. Awareness campaigns and programs focused on detecting visual impairment and related eye disease among men are also suggested. More research is needed to clarify the potential economic reasons for the gender inequalities observed.

Limitations

While clinical examinations were not conducted in this study, previous studies support the validity of self-reported data on visual impairment when compared with visual acuity measurements (37,38). Nonetheless, a higher sensitivity between low visual acuity and self reported visual impairment is found among women (39), which could again be associated with traditional masculinity, in that men are more likely to deny their impairment when interviewed. This could lead us to underestimate the prevalence of visual impairment among men.

The variable for undiagnosed eye disease included individuals who were not diagnosed with cataract, diabetic retinopathy, glaucoma and macular degeneration (representing 90% of blindness in Europe) (1), as well as myopia magna and retinitis pigmentosa. However, gender differences in other, uncommon, eye diseases could partly explain the gender inequalities observed, although we found no evidence of this.

Funding

None

Conflicts of interest

The authors declare no competing financial interests

Key-points

- Strong gender inequalities in visual impairment in Spain, with a higher prevalence of visual impairment and related cataracts among women, and undiagnosed eye disease and related glaucoma among men are observed.
- As far as we know this is the first study describing gender inequalities on the non-diagnosed and diagnosed eye diseases among the visually impaired population.
- Sensitization actions to prevent discrimination of women when prescribing treatment or prioritizing for waiting list among professionals are recommended.
- Awareness campaigns and programs focused on detecting visual impairment and related eye disease among men are also suggested.
- More research is needed to help focusing on mechanisms and determinants for the higher prevalence of visual impairment and cataract among women.

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Table 1. General description of the sample (in percentages). *Survey on Disability, Personal Autonomy and Dependency*.

Variables	Total Population			Blindness			Some Visual Impairment		
	Males (%) N=103,093	Females (%) N=110,533	p-value[a]	Males (%) N = 160	Females (%) N = 200	p-value[a]	Males (%) N = 2025	Females (%) N = 3535	p-value[a]
Age group (years)			< 0.001			0.004			< 0.001
16-24	12.8	11.5		3.8	1.0		1.6	0.8	
25-64	67.9	65.2		26.9	18.0		32.8	23.8	
65-79	14.9	16.4		34.4	28.5		36.5	36.6	
≥80	4.4	6.8		35.0	52.5		29.0	38.8	
Educational level			< 0.001			0.003			< 0.001
Illiterate	1.8	3.7		12.0	24.2		8.1	16.7	
Less than Primary	13.5	15.9		34.6	35.4		36.8	39.4	
Complete Primary	27.9	26.6		28.3	27.3		31.2	28.3	
Secondary or higher	56.9	53.8		25.2	13.1		23.9	15.5	

[a] Chi-squared test/Fisher's exact test comparing distribution among men compared to women

Table 2. Crude Prevalence, OR, Adjusted OR and 95% Confidence Interval (CIs) for gender inequalities in the prevalence of some visual impairment, and diagnosed and undiagnosed eye diseases. *Survey on Disability, Personal Autonomy and Dependency*.

	SOME VISUAL IMPAIRMENT														
	Prevalence %			ORc (IC 95%)			ORa (IC 95%) Model 1 Adjusted for Age			ORa (IC 95%) Model 2 Adjusted for educational level			ORa (IC 95%) Model 3 Adjusted for age and educational level		
	Men	Women	P-value[a]	OR	95% CI	P-value[a]	aOR	95% CI	P-value[a]	aOR	95% CI	P-value[a]	aOR	95% CI	P-value[a]
Total	2.0	3.2		1.6	(1.56, 1.74)	< 0.001	1.4	(1.30, 1.46)	< 0.001	1.5	(1.46, 1.63)	< 0.001	1.3	(1.27, 1.42)	< 0.001
Age group															
16-24	0.3	0.2		0.9	(0.51, 1.41)	0.526	0.9	(0.51, 1.42)	0.543	1.0	(0.59, 1.64)	0.98	1.0	(0.61, 1.71)	0.93
25-64	1.0	1.2		1.2	(1.11, 1.36)	< 0.001	1.2	(1.10, 1.35)	< 0.001	1.2	(1.12, 1.37)	< 0.001	1.2	(1.08, 1.33)	0.001
65-79	4.8	7.1		1.5	(1.39. 1.67)	< 0.001	1.5	(1.36, 1.64)	< 0.001	1.4	(1.32, 1.59)	< 0.001	1.4	(1.31, 1.58)	< 0.001
≥80	13.0	18.2		1.5	(1.35, 1.66)	< 0.001	1.4	(1.25, 1.54)	< 0.001	1.5	(1.34, 1.65)	< 0.001	1.4	(1.24, 1.53)	< 0.001
Age of onset[b]			< 0.001												
<3	12.6	8.5		0.7	(0.56, 0.89)	0.003	1.0	(0.77, 1.27)	0.941	0.7	(0.57, 0.89)	0.003	1.0	(0.77, 1.28)	0.962
3-24	11.1	9.1		0.9	(0.69, 1.11)	0.264	1.2	(0.90, 1.48)	0.249	0.9	(0.70, 1.11)	0.277	1.2	(0.91, 1.48)	0.243
25-64	38.4	34.6		1.0	(0.84, 1.10)	0.55	1.0	(0.90, 1.19)	0.619	1.0	(0.84, 1.10)	0.556	1.0	(0.89, 1.17)	0.74
65-79	25.9	31.4		1.4	(1.18, 1.60)	< 0.001	1.2	(1.00, 1.36)	0.058	1.3	(1.10, 1.49)	0.002	1.1	(0.98, 1.33)	0.101
≥80	11.9	16.4		1.5	(1.25, 1.89)	< 0.001	1.0	(0.78, 1.28)	0.987	1.5	(1.24, 1.88)	< 0.001	1.0	(0.78, 1.28)	0.982
Diagnosis status[b]			< 0.001												
Diagnosed eye disease	60.2	67.8		1.4	(1.24, 1.56)	< 0.001	1.3	(1.11, 1.40)	< 0.001	1.4	(1.24, 1.56)	< 0.001	1.3	(1.12, 1.41)	< 0.001
Undiagnosed eye disease	39.8	32.3		0.7	(0.64, 0.81)	< 0.001	0.8	(0.71, 0.90)	< 0.001	0.7	(0.64, 0.81)	< 0.001	0.8	(0.71, 0.90)	< 0.001
Diagnosed eye disease[c,d]			< 0.001												
Cataract	63.6	71.6		1.4	(1.25, 1.67)	< 0.001	1.3	(1.08, 1.47)	0.003	1.4	(1.24, 1.66)	< 0.001	1.3	(1.08, 1.47)	0.003
Glaucoma	19.4	15.7		0.8	(0.65, 0.93)	0.006	0.8	(0.66, 0.95)	0.011	0.8	(0.65, 0.93)	0.006	0.8	(0.66, 0.95)	0.011
Macular degeneration	8.9	10.6		1.2	(0.96, 1.54)	0.108	1.1	(0.89, 1.43)	0.317	1.2	(0.96, 1.54)	0.105	1.1	(0.89, 1.44)	0.304
Diabetic retinopathy	13.2	13.6		1.0	(0.85, 1.27)	0.737	1.1	(0.87, 1.32)	0.500	1.0	(0.83, 1.24)	0.909	1.0	(0.85, 1.28)	0.685
Other diagnosis	16.2	16.2		1.0	(0.83, 1.21)	1.000	1.2	(1.02, 1.51)	0.035	1.0	(0.83, 1.21)	0.976	1.2	(1.01, 1.51)	0.036

[a] Chi-squared test/Fisher's exact test comparing distribution among men and women

[b] Visually impaired or blind individuals only

[c] Among diagnosed individuals with some visual impairment

[d] Note that individuals can have more than one diagnosed eye disease

Table 3. Crude Prevalence, OR and 95% Confidence Interval (CIs) for gender inequalities in the prevalence of blindness, and diagnosed and undiagnosed eye diseases. *Survey on Disability, Personal Autonomy and Dependency*.

	BLINDNESS					
	Prevalence %			ORc (IC 95%)		
	Men	Women	p-value[a]	OR	95% CI	P-value[a]
Total	0.2	0.2		1.2	(0.95, 1.44)	0.148
Age group						
16-24	0.1	0.0		0.3	(0.07, 1.71)	0.193
25-64	0.1	0.1		0.8	(0.52, 1.27)	0.357
65-79	0.4	0.3		0.9	(0.61, 1.27)	0.490
≥80	1.2	1.4		1.1	(0.82, 1.57)	0.451
Age of onset[b]			0.001			
<3	16.5	6.6		0.4	(0.19, 0.76)	0.007
3-24	8.6	11.2		1.4	(0.68, 2.87)	0.362
25-64	38.8	29.1		0.7	(0.44, 1.06)	0.092
65-79	20.4	31.1		1.8	(1.11, 2.99)	0.017
≥80	15.8	21.9		1.6	(0.90, 2.69)	0.117
Diagnostic status[b]			0.822			
Diagnosed eye disease	66.3	67.5		1.1	(0.68, 1.65)	0.802
Undiagnosed eye disease	33.8	32.5		1.0	(0.61, 1.47)	0.802
Diagnosed eye diseases[c,d]			< 0.001			
Cataract	50.0	58.5		1.4	(0.85, 2.35)	0.188
Glaucoma	37.7	23.0		0.5	(0.28, 0.86)	0.013
Macular degeneration	9.4	17.8		2.1	(0.95, 4.56)	0.069
Diabetic retinopathy	18.9	20.7		1.1	(0.59, 2.13)	0.718
Other diagnosis	28.3	25.9		0.9	(0.50, 1.57)	0.680

[a] Chi-squared test/Fisher's exact test comparing distribution among men and women.

[b] Blind individuals only

[c] Among blind individuals with diagnosed eye disease

[d] Note that individuals can have more than one diagnosed eye disease