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# Rapid assessment of avoidable blindness in Uruguay: results of a nationwide survey

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**ABSTRACT**

**Objective.** *To investigate and describe the prevalence and causes of blindness and moderate and severe visual impairment in older adults living in Uruguay.*

**Methods.** *All individuals aged ≥ 50 years old living in randomly selected clusters were eligible to participate. In each census enumeration unit selected, 50 residents aged 50 years and older were chosen to participate in the study using compact segment sampling. The study participants underwent visual acuity (VA) measurement and lens examination; those with presenting VA (PVA) < 20/60 also underwent direct ophthalmoscopy. Moderate visual impairment (MVI) was defined as PVA < 20/60–20/200, severe visual impairment (SVI) was defined as PVA < 20/200–20/400, and blindness was defined as PVA < 20/400, all based on vision in the better eye with available correction.*

**Results.** *Out of 3 956 eligible individuals, 3 729 (94.3%) were examined. The age- and sex-adjusted prevalence of blindness was 0.9% (95% confidence interval (CI): 0.5–1.3). Cataract (48.6%) and glaucoma (14.3%) were the main causes of blindness. Prevalence of SVI and MVI was 0.9% (95% CI: 0.5–1.3) and 7.9% (95% CI: 6.0–9.7) respectively. Cataract was the main cause of SVI (65.7%), followed by uncorrected refractive error (14.3%), which was the main cause of MVI (55.2%). Cataract surgical coverage was 76.8% (calculated by eye) and 91.3% (calculated by individual). Of all eyes operated for cataract, 70.0% could see ≥ 20/60 and 15.3% could not see 20/200 post-surgery.*

**Conclusions.** *Prevalence of blindness in Uruguay is low compared to other Latin American countries, but further reduction is feasible. Due to Uruguay's high cataract surgical coverage and growing proportion of people ≥ 50 years old, the impact of posterior pole diseases as a contributing factor to blindness might increase in future.*

**Key words** Eye health, blindness, prevention & control; cataract extraction; Uruguay.

Worldwide, an estimated 223.4 million people have visual impairment (presenting visual acuity (PVA) < 20/60), and 32.4 million of them are blind (PVA < 20/400) (1). In 1999, the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB) launched the global initiative known as ''VISION 2020: the Right to Sight,'' which calls for the elimination of avoidable blindness by the year 2020 (2). Five years later the initiative was launched in Latin America as a three-way partnership of the Pan American Health Organization (PAHO; representing WHO in the region); the IAPB; and the Pan-American Association of Ophthalmology (PAAO) (3). At the time (2004), little was known about the prevalence and causes of blindness in the region. With the development of the Rapid Assessment of Cataract Surgical Services (RACSS) and later the Rapid Assessment of Avoidable Blindness (RAAB) (4), a standard methodology could be applied in different scenarios, including those with limited resources, and results could be compared between countries/

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regions and/or over time. Using this methodology, population-based studies on prevalence and causes of blindness in older adults were performed in multiple Latin American countries (subnational studies in Argentina (5), Brazil (6), Chile (7), Cuba (8), Ecuador (9), Guatemala (10), Mexico (11, 12), and Peru (13), and nationwide studies in Dominican Republic (14), Paraguay (15–17), and Venezuela (18), plus Argentina, El Salvador, Honduras, Panama, and Peru (not yet published).

According to WHO estimates for 2010, approximately 26.6 million people in Latin America had visual impairment, and 3.2 million of them were blind (17). Latin America is heterogeneous in terms of ethnicity, geography, socioeconomics, and access to eye care, among other variables. Some countries have no data on prevalence and causes of blindness and estimates are generated based on extrapolations of the data available in the region.

Uruguay (known officially as the Eastern Republic of Uruguay) is a South American country that borders Argentina, Brazil, and the Atlantic Ocean (19). It is divided into 19 departments and has a total of 3 286 314 inhabitants (94.7% urban) (20), most of whom live in its capital city, Montevideo. Uruguay is part of the WHO Americas-B (AMR-B) subregion, along with Argentina, Brazil, Chile, Dominican Republic, Mexico, Paraguay, and Venezuela, and 18 other countries. With a gross national income per capita of US$ 13 580, Uruguay is a high-income country, according to World Bank criteria (21). About 14% of its population is 65+ years of age, the highest percentage for this age group in Latin America (21). Little is known about the causes of eye diseases in Uruguay (3).

WHO considers epidemiological research a key component of both 1) baseline situation analysis and 2) measurement of the impact of actions taken to reduce avoidable blindness (2). Uncertainties regarding the estimates of prevalence of blindness in the region could be minimized by conducting more population-based surveys in countries where no data are available (1). High-quality studies mapping the prevalence and causes of blindness would help increase awareness among potential stakeholders and policy-makers and thus could help improve eye care services (22). Prevalence of blindness in Uruguay was estimated based on published data on the prevalence of blindness in neighboring countries. Using the RAAB methodology, the authors investigated and described the prevalence and causes of blindness and other types of visual impairment in older adults living in Uruguay. The RAAB methodology, which has been successfully applied in multiple countries, is the updated version of the RACSS, a population-based, cross-sectional study on the prevalence and causes of blindness and visual impairment in subjects aged ≥ 50 years (4).

## MATERIALS AND METHODS

After explanation of the nature and aims of the study, informed verbal consent was obtained from those who agreed to participate. The study was performed in accordance with the Declaration of Helsinki, with institutional ethics committee approval from Fundación Visión in Asunción, Paraguay (project #01/2011). Individuals needing medical assistance were either treated or referred to the nearest medical unit.

The entire country of Uruguay was selected as the survey area. According to the preliminary data from the 2011 national census, the total population at the time of the study was estimated at 3 251 526 (1 561 236 men and 1 690 290 women). The sample size was calculated using the special systematic sampling module in the cost-free RAAB software package for data entry and analysis (RAAB version 5, International Centre for Eye Health, London, UK).

As the investigators considered the prevalence and causes of blindness in Uruguay to most closely resemble those in Paraguay and Venezuela, prevalence of blindness in Uruguayans aged ≥ 50 years was estimated at 2.5%, based on previous studies conducted in those two countries (15, 18). For an estimated prevalence of 2.5% and noncompliance of 7.0%, a sample size of about 4 000 was determined to be powerful enough for a variation of 25.0% above and below the estimate of 2.5% at 95% probability.

In data from Uruguay's National Statistics Institute (*Instituto Nacional de Estadística*, INE), the country's population is divided into 60 036 census enumeration areas (EAs). The investigators for this study obtained the complete list of all 60 036 EAs and selected 80 using the RAAB software systematic sampling module. This process ensured a random selection of EAs from across the entire country with a probability proportional to the size of the population of each EA. The corresponding maps for each EA were also available from INE. In each of the selected EAs, 50 residents aged ≥ 50 years were selected by compact segment sampling for examination.

The study was conducted by 10 teams composed of one third-year ophthalmology resident or senior ophthalmologist, one ophthalmic assistant, and a local guide, all trained by a coauthor of this study who was also an expert RAAB trainer (HL), prior to study initiation. Inter-observer variation, composed of visual acuity (VA) measurement, lens status assessment, and determination of the primary cause of PVA < 20/60 was assessed to ensure standardization of the ophthalmic examination. All 10 teams achieved a kappa value ≥ 0.60, indicating good to very good agreement across the different teams. The data collection (fieldwork) was performed between April and December 2011.

The survey protocol used in this study was similar to that used in previous RAAB surveys (4). A Spanish version of the standard RAAB survey record was completed for each eligible subject. Visual acuity of eligible subjects was measured with a tumbling Snellen "E" chart with a size 200 optotype on one side and a size 60 optotype on the other, at a distance of 10 or 20 feet, inside or in front of study participants' houses, in daylight. PVA was measured for both eyes with available correction. The larger optotype (size 200) was shown first at a distance of 20 feet. If the symbol was read correctly, the smaller optotype (size 60) was shown. If both symbols were read correctly, PVA was recorded as ≥ 20/60 (no visual impairment). If the larger optotype was read correctly but the smaller one was not, PVA was recorded as < 20/60–20/200. If the larger optotype (size 200) was not read correctly, the reading distance was decreased to 10 feet and a correct reading was recorded as PVA < 20/200–20/400 while an incorrect reading was recorded as < 20/400. Visual acuity < 20/60 was assessed with a pinhole to determine if an uncorrected refractive error (URE) was the cause of the visual impairment. In all subjects, distant direct ophthalmoscopy was performed to assess lens status in a dark room (normal, mild opacification, evident opacification, aphakia, pseudophakia with posterior capsule opacification (PCO), or pseudophakia without PCO). Fundus examination (direct ophthalmoscopy) was performed and pupil dilation with tropicamide and phenylephrine eye drops was performed when necessary. The main cause of PVA < 20/60 per eye and per person were classified into the following categories: URE, uncorrected aphakia, untreated cataract, surgical complication, trachomatous corneal opacity, non-trachomatous corneal opacity, phthisis bulbi, glaucoma, diabetic retinopathy, age-related macular degeneration (AMD), other posterior segment, or globe/central nervous system disorders.

Moderate visual impairment (MVI) was defined as PVA < 20/60–20/200 in the better eye with available correction. Severe visual impairment (SVI) was defined as PVA < 20/200–20/400 in the better eye with available correction. Blindness was defined as PVA < 20/400 in the better eye with available correction. The primary cause of blindness or visual impairment per eye and per person was assessed. If there were two or more causes of visual loss and it could not be determined which cause was the primary disorder, then the WHO convention of recording the cause that is easiest to treat or to prevent was applied (4).

Cataract surgical coverage (CSC) was defined as the percentage of eyes (or people) who received cataract surgery divided by the number of eyes (or people) with pseudoaphakia, aphakia, or operable cataract (23). Visual outcomes after cataract surgery were defined as "good" (PVA ≥ 20/60), "borderline" (PVA < 20/60–20/200), or "poor" (PVA < 20/200). Causes of poor visual outcome were categorized as 1) case selection ("selection"), if patients chosen for surgery had a visual-impairing condition other than cataract; 2) surgical complications ("surgery"), if problems occurred during or immediately after cataract removal (e.g., vitreous loss); 3) need for proper corrective lens ("spectacles") (i.e., URE), when patients did not have glasses, their glasses' prescription was not correcting refractory problems such as post-operative astigmatism, or their intraocular lens (IOL) had the wrong power; and 4) late post-operative complications ("sequelae"), when conditions such as retinal detachment or PCO developed long after the procedure. In those with PVA < 20/200 with available correction and operable cataract, the barriers to cataract services were assessed and classified into six different categories: "considered unnecessary," "fear of surgery or poor result," "can not afford operation," "treatment denied by provider," "unaware that treatment is possible," and "no access to treatment."

The RAAB software program was used for data entry and automatic standardized data analysis (24). Data was double-entered into the RAAB software and checked for consistency and potential typing errors. Sample and age- and sex-adjusted prevalence of blindness and moderate and severe visual impairment were calculated, along with the respective 95% confidence intervals (CIs), for cluster sampling.

## RESULTS

The study sample pool included 3 956 eligible subjects (people ≥ 50 years old), of whom 3 729 were examined (94.3%), including 1 571 men (42.1%) and 2 158 women (57.9%). The 227 subjects excluded from the study included 77 (1.9%) who were absent, 148 (3.7%) who refused to participate, and two (0.1%) who were not capable of participating.

The age- and sex-adjusted prevalence of blindness was 0.9% (95% CI: 0.5–1.3) (Table 1). The leading cause of blindness was cataract (48.6%), followed by glaucoma (14.3%), AMD (8.6%), cataract surgical complications (8.6%), other posterior pole diseases (8.6%), and diabetic retinopathy (5.7%) (Table 2). Cataract was the main cause of SVI (65.7%) and the second leading cause of MVI (39.7%), after URE (55.2%) (Table 2). Most cases of blindness (54.4%) were treatable (cataract, uncorrected aphakia, and URE) and 28.6% were preventable (cataract surgical complications, glaucoma, and diabetic retinopathy).

A total of 76.8% of all eyes in Uruguay determined to be blind due to cataract had been operated upon. That means that for every three eyes operated for cataract there was one eye still blind due to cataract. Of all eyes with PVA < 20/200 due to cataract, 68.0% were operated, along with 42.5% of eyes with PVA < 20/60, indicat-

**TABLE 1. Age- and sex-adjusted prevalence of blindness, SVI,[a] and MVI[b] in adults ≥ 50 years old, Uruguay, April–October 2011**

| Visual impairment | Male | | | Female | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | No. | % | 95% CI[c] | No. | % | 95% CI | No. | % | 95% CI |
| Blindness | 2 974 | 0.7 | 0.3–1.1 | 5 704 | 1.0 | 0.5–1.6 | 8 678 | 0.9 | 0.5–1.3 |
| SVI | 1 978 | 0.5 | 0.1–0.8 | 6 538 | 1.2 | 0.6–1.8 | 8 516 | 0.9 | 0.5–1.3 |
| MVI | 23 355 | 5.6 | 4.3–6.9 | 51 714 | 9.6 | 7.1–12.2 | 75 068 | 7.9 | 6.0–9.7 |

[a] SVI: severe visual impairment.
[b] MVI: moderate visual impairment.
[c] CI: confidence interval.

**TABLE 2. Causes of blindness, SVI,[a] and MVI[b] in adults ≥ 50 years old, Uruguay, April–October 2011**

| Cause | Blindness | | SVI | | MVI | |
|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % |
| Cataract | 17 | 48.6 | 23 | 65.7 | 123 | 39.7 |
| Glaucoma | 5 | 14.3 | 1 | 2.9 | 2 | 0.6 |
| AMD[c] | 3 | 8.6 | 0 | 0.0 | 6 | 1.9 |
| Cataract surgical complications | 3 | 8.6 | 0 | 0.0 | 1 | 0.3 |
| Other posterior segment disease | 3 | 8.6 | 0 | 0.0 | 3 | 1.0 |
| Diabetic retinopathy | 2 | 5.7 | 0 | 0.0 | 0 | 0.0 |
| Aphakia, uncorrected | 1 | 2.9 | 2 | 5.7 | 1 | 0.3 |
| Refractive error, uncorrected | 1 | 2.9 | 5 | 14.3 | 171 | 55.2 |
| All other globe/CNS[d] abnormalities | 0 | 0.0 | 3 | 8.6 | 3 | 1.0 |
| Corneal opacity | 0 | 0.0 | 1 | 2.9 | 0 | 0.0 |

[a] SVI: severe visual impairment.
[b] MVI: moderate visual impairment.
[c] AMD: age-related macular degeneration.
[d] CNS: central nervous system.

**TABLE 3. Cataract surgical coverage for blindness, SVI,[a] and MVI[b] in adults ≥ 50 years old (calculated per person), Uruguay, April–October 2011**

| Visual impairment | Male (%) | Female (%) | Total (%) |
|---|---|---|---|
| Blindness (PVA[c] < 20/400) | 93.1 | 90.3 | 91.3 |
| SVI (PVA < 20/200) | 89.1 | 84.3 | 86.0 |
| MVI (PVA < 20/60) | 59.5 | 51.7 | 54.4 |

[a] SVI: severe visual impairment.
[b] MVI: moderate visual impairment.
[c] PVA: presenting visual acuity.

ing that many cataract patients undergo the operation at a relative early stage. Of all persons bilaterally blind due to cataract, 91.3% underwent the procedure for one or both eyes (93.1% in men and 90.3% in women) (Table 3).

Of all eyes operated for cataract, 70.0% could see 20/60 or better ("good" outcome) and 15.3% could not see 20/200 ("poor" outcome) with available correction (Table 4). Using a pinhole, the results improved to 80.9% ("good" outcome) and 12.3% ("poor" outcome). The visual outcome of eyes operated up to three years before the study (73.4%, "good"; 7.2% "poor") was better than those operated four to six years prior to study execution (70.7% "good"; 18.4% "poor"), and much better than those operated seven or more years earlier (61.5% "good"; 26.2% "poor").

Need for proper corrective lenses ("spectacles") or URE was the main cause of "borderline"/"poor" outcome (40.0%), followed by case selection (25.7%) and sequelae (20.0%) (Table 5). Of all cataract operations, 96.3% had an IOL implanted, 50.7% were conducted in a government hospital, 48.7% in a private hospital, and 0.6% in voluntary/charitable hospitals.

All subjects with bilateral cataract and PVA < 20/200 were asked why their eyes had not been operated for cataract. Accessibility and utilization of services was the main barrier to cataract surgery (32.3%), followed by fear (22.9%) and treatment denied by provider (19.8%).

**TABLE 4. Outcome after cataract surgery (PVA[a]; calculated by eye) in adults ≥ 50 years old, Uruguay, April–October 2011**

| | Male | | Female | | Total | |
|---|---|---|---|---|---|---|
| Visual outcome | No. | % | No. | % | No. | % |
| Good (PVA ≥ 20/60) | 96 | 70.0 | 150 | 70.0 | 246 | 70.0 |
| Borderline (PVA < 20/60–20/200) | 19 | 13.8 | 32 | 14.9 | 51 | 14.5 |
| Poor (PVA < 20/200) | 22 | 16.0 | 32 | 14.9 | 54 | 15.3 |
| Total | 137 | 100.0 | 214 | 100.0 | 351 | 100.0 |

[a] PVA: presenting visual acuity.

**TABLE 5. Causes of borderline and poor cataract surgical outcome in adults ≥ 50 years old, Uruguay, April–October 2011**

| | Borderline[a] | | Poor[b] | | Total | |
|---|---|---|---|---|---|---|
| Cause | No. | % | No. | % | No. | % |
| Selection[c] | 7 | 13.7 | 20 | 37.0 | 27 | 25.7 |
| Surgery[d] | 4 | 7.8 | 11 | 20.4 | 15 | 14.3 |
| Spectacles[e] | 31 | 60.8 | 11 | 20.4 | 42 | 40.0 |
| Sequelae[f] | 9 | 17.6 | 12 | 22.2 | 21 | 20.0 |
| Total | 51 | 100.0 | 54 | 100.0 | 105 | 100.0 |

[a] Borderline visual outcome (presenting visual acuity (PVA) < 20/60–20/200).
[b] Poor visual outcome (PVA < 20/200).
[c] Patients selected for surgery had other pathologies causing visual impairment (e.g., glaucoma, age-related macular degeneration, diabetic retinopathy).
[d] Surgical complication or immediate post-surgical complication.
[e] Glasses prescription not correcting post-operative refractory problem (e.g., astigmatism), or wrong power intraocular lens.
[f] Late post-operative complications.

## DISCUSSION

This is the first nationwide population-based study on prevalence and causes of blindness conducted in Uruguay. The age- and sex-adjusted prevalence of blindness and visual impairment was 0.9% (95% CI: 0.5–1.3), considerably lower than the initial estimate based on neighboring countries. The proportion of blindness due to posterior segment disease is relatively high (32.7%), mainly because of the high CSC, and the high proportion of elderly population.

The prevalence of blindness found in Uruguay is the lowest for all RAAB studies performed in Latin America thus far, with previous studies reporting an age- and sex-adjusted prevalence (with available correction) ranging from 1.3% (95% CI: 0.9–1.6; in Buenos Aires, Argentina) (5) to 4.0% (95% CI: 3.2–4.8; in Piura and Tumbes districts, Peru) (13).

The cataract surgical rate (CSR), defined as the number of cataract surgeries executed per million population in a given place (25), is higher in Uruguay than most Latin American countries. The CSR in Uruguay was 2 000 in 2006, 1 898 in 2007, and 3 933 in 2008 (25). The low prevalence of blinding cataracts in Uruguay despite the high proportion of people over 65 years of age can most likely be attributed to the high CSR. Countries with a higher proportion of elderly individuals will have a higher need for cataract surgeries, as the vast majority of blindness-related cataract occurs in subjects ≥ 50 years. Recently, Lewallen et al. estimated the CSR required to eliminate visual impairment due to cataract in Latin American countries (26). The ideal CSR for Uruguay would be about the same as Cuba's (8 935), as both countries have almost the same percentage of people ≥ 50 years old in their population.

According to WHO's recommendations, there is still space for improvement in the percentage of people presenting good visual outcome after cataract surgery in Uruguay (27). The visual outcome for eyes operated up to three years before the study (73.4% "good"; 7.2% "poor") was better than those operated four to six years prior to study execution (70.7% "good"; 18.4% "poor"), and much better than those operated seven or more years earlier (61.5% "good"; 26.2% "poor"). This could be explained by multiple factors, including improvements in surgical facilities, and the fact that the more time that has passed since cataract surgery and the higher the age of the patient, the higher the risk of getting other sight-threatening eye diseases. Case selection was the major cause of poor outcome, followed by post-surgical complications such as PCO. Knowing the main causes of poor outcome enables the design of more effective interventions and thus improves both the quality of surgery and the visual outcome. Improving surgical outcomes would boost the credibility of cataract surgeons and motivate more patients to elect surgery. Adequate preoperative examination may reduce the selection of patients with concurrent blinding conditions that might prevent a good vision outcome post-surgery. Patients with concurrent blinding conditions may need counseling to ensure they have realistic expectations about their future vision. Review of surgical procedures and routine monitoring of cataract surgical outcome may help to improve both. Finally, the prescription and provision of glasses is likely to improve patients' post-surgical visual outcome considerably.

The proportion of people aged ≥ 50 years in Uruguay is expected to increase from 27.2% in 2000 to 34.2% in 2030. Uruguay's aging trend alone will increase the demand for cataract surgery nationwide by about 24% between 2010 and 2030. Life expectancy at birth is expected to increase from 75 years in 2000 to 79 in 2030, leading to additional cases of blinding eye diseases. With these demographic developments the burden of disease in Uruguay for cataract alone is expected to increase between 2010 and 2030 (28).

## Limitations

This study had some limitations related to the sample size. In the study design, the authors assumed a prevalence of blindness of 2.5% and calculated that a sample size of about 4 000 would provide enough power to achieve a precision of 25.0% for the estimated prevalence with a 95% probability. The survey actually found an adjusted prevalence of blindness of 0.9% (95% CI: 0.5–1.3), a precision of 39.0% at 95% probability. For PVA < 20/200, the prevalence was 1.8% (95% CI: 1.2–2.4), a variation of 30.0%, and for PVA < 20/60 the prevalence was 9.7% (95% CI: 7.4–11.9), a variation of 23.0%. To achieve a precision of 25.0% for a prevalence of blindness of 0.9% a sample size of 10 400 would have been required, which was not possible with the available resources.

## Conclusions

Posterior pole diseases such as glaucoma, diabetic retinopathy, and AMD are major causes of visual impairment and are likely to become increasingly important in Uruguay and other developed countries with the expansion of the aging population and the resulting growth in the number of cataract surgeries performed countrywide. Because interventions targeting these diseases are usually costly and their success depends on patient adherence, the increasing burden of these eye diseases might prove challenging to policy-makers and eye health care workers.

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**Conflicts of interest.** None.

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**RESUMEN**

## Evaluación rápida de la ceguera evitable en Uruguay: resultados de un estudio a escala nacional

***Objetivo.*** Investigar y describir la prevalencia y las causas de la ceguera y de la discapacidad visual moderada y grave en los adultos mayores residentes en Uruguay.
***Métodos.*** Todas las personas de 50 años o más que vivían en los agrupamientos seleccionados aleatoriamente reunían los requisitos para participar. En cada unidad de enumeración censal seleccionada, se escogieron 50 residentes de ≥ 50 años de edad para participar en el estudio mediante el empleo de un muestreo por segmentos compactos. Los participantes fueron sometidos a una medición de la agudeza visual (AV) y a un examen del cristalino; los que mostraban una AV de presentación (AVP) < 20/60 también fueron sometidos a oftalmoscopia directa. La discapacidad visual moderada (DVM) se definió como una AVP < 20/60–20/200, la discapacidad visual grave (DVG) como una AVP < 20/200–20/400, y la ceguera como una AVP < 20/400, todas ellas basadas en la visión del ojo que obtuvo un mejor resultado con la corrección disponible.
***Resultados.*** De las 3 956 personas que reunieron los requisitos, se examinaron 3 729 (94,3%). La prevalencia ajustada por edad y sexo de la ceguera fue de 0,9% (intervalo de confianza (IC) de 95%: 0,5–1,3). La catarata (48,6%) y el glaucoma (14,3%) fueron las principales causas de ceguera. La prevalencia de la DVG y la DVM fue de 0,9% (IC de 95%: 0,5–1,3) y 7,9% (IC de 95%: 6,0–9,7), respectivamente. La catarata fue la causa principal de DVG (65,7%), seguida del error de refracción no corregido (14,3%), que fue la principal causa de DVM (55,2%). La cobertura quirúrgica de la catarata fue de 76,8% (calculada por ojo) y de 91,3% (calculada por persona). De todos los ojos operados de catarata, 70,0% presentaba una agudeza visual de ≥ 20/60 y 15,3% tenía una agudeza visual < 20/200 después de la intervención quirúrgica.
***Conclusiones.*** En Uruguay, la prevalencia de la ceguera es baja en comparación con otros países latinoamericanos, pero es factible lograr una reducción adicional. Como consecuencia de la alta cobertura quirúrgica de la catarata y la creciente proporción de personas de ≥ 50 años en Uruguay, la repercusión de las enfermedades de la cámara ocular posterior como factor contribuyente a la ceguera podría aumentar en el futuro.

**Palabras clave** Salud ocular; ceguera, prevención & control; extracción de catarata; Uruguay.