



Retrospective Evaluation of Reasons for Ophthalmology Outpatient Visits and Diagnostic Distribution in Geriatric Patients Geriatrik Hastalarda Göz Polikliniğine Başvuru Nedenleri ve Tanısal Dağılımın Retrospektif Değerlendirilmesi

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ABSTRACT

Objectives: Older adults are particularly vulnerable to ocular diseases that impair vision, quality of life, and functional independence. Understanding ophthalmology outpatient visit patterns in this population is essential for planning age-sensitive eye care services. This study aimed to analyze the primary reasons for ophthalmology outpatient visits among older adults in Turkey. **Materials and Methods:** Medical records of patients aged ≥ 65 years attending an outpatient ophthalmology clinic between January and December 2024 were retrospectively reviewed. Demographic characteristics, presenting visual acuity, and primary clinical diagnoses were recorded and descriptively analyzed using predefined diagnostic categories. **Results:** Patients aged ≥ 65 years accounted for 17.5% of all ophthalmology outpatient visits. Ocular surface diseases were the most common diagnostic category, followed by refractive errors and retina and posterior segment diseases. The most frequent diagnoses were refractive errors, dry eye disease, and blepharitis. Most patients were aged 65–74 years, with a higher proportion of females. Visual impairment increased progressively with age. **Conclusion:** Ophthalmology outpatient visits among older adults are largely driven by common, potentially preventable or manageable conditions. Frequent ocular surface disorders, such as dry eye disease and blepharitis, may be effectively managed at the primary care level with appropriate referral pathways. Strengthening early identification and first-line management may reduce unnecessary specialist visits and help preserve visual function, supporting the planning and optimization of geriatric eye care services within a public health framework in Turkey.

Keywords: Elderly, Eye Care, Ophthalmology, Geriatric Eye Diseases, Outpatient Clinic

ÖZ

Amaç: Yaşlı bireyler; görmeyi, yaşam kalitesini ve fonksiyonel bağımsızlığı olumsuz etkileyen oküler hastalıklara karşı özellikle hassastır. Bu popülasyonda oftalmoloji poliklinik başvuru nedenlerinin anlaşılması, yaşa duyarlı göz sağlığı hizmetlerinin planlanması açısından önem taşımaktadır. Bu çalışmanın amacı, Türkiye’de yaşlı bireylerin oftalmoloji polikliniklerine başvuru nedenlerini analiz etmektir. **Gereç ve Yöntemler:** Ocak–Aralık 2024 tarihleri arasında bir oftalmoloji polikliniğine başvuran ≥ 65 yaş hastaların tıbbi kayıtları retrospektif olarak incelendi. Demografik özellikler, başvuru sırasındaki görme keskinliği ve primer klinik tanımlar kaydedildi ve önceden tanımlanmış tanısal kategoriler kullanılarak tanımlayıcı olarak analiz edildi. **Bulgular:** ≥ 65 yaş hastalar, tüm oftalmoloji poliklinik başvurularının %17,5’ini oluşturdu. Oküler yüzey hastalıkları en sık tanı kategorisi olup bunu refraksiyon kusurları ile retina ve arka segment ilişkili hastalıklar izledi. En sık tanımlar refraksiyon kusurları, kuru göz hastalığı ve blefarit idi. Hastaların çoğu 65–74 yaş aralığında olup kadın hastaların oranı daha yüksekti. Görme bozukluğu sıklığı yaşla birlikte progresif olarak arttı. **Sonuç:** Yaşlı bireylerde oftalmoloji poliklinik başvuruları büyük ölçüde yaygın, önlenabilir veya yönetilebilir hastalıklardan kaynaklanmaktadır. Kuru göz hastalığı ve blefarit gibi sık görülen oküler yüzey hastalıkları, uygun sevk basamakları ile birinci basamakta etkin şekilde yönetilebilir. Erken tanı ve ilk basamak tedavi yaklaşımlarının güçlendirilmesi, gereksiz uzman başvurularını azaltabilir ve görme fonksiyonunun korunmasına katkı sağlayabilir. Bu yaklaşım, Türkiye’de geriatrik göz sağlığı hizmetlerinin halk sağlığı perspektifiyle planlanması ve optimize edilmesine destek sağlayacaktır.

Anahtar Kelimeler: Yaşlı, Göz Sağlığı, Oftalmoloji, Geriatrik Göz Hastalıkları, Poliklinik Başvurusu

INTRODUCTION

Population ageing represents one of the most profound demographic transformations of the 21st century, with far-reaching implications for health systems worldwide. By 2050, approximately one in six individuals globally is projected to be aged 65 years or older (1,2). In Turkey, the population aged ≥ 65 years currently comprises approximately 10.6% of the total population and is projected to increase substantially in the coming decades (3,4).

Ageing is associated with progressive visual decline and an increased prevalence of age-related ocular diseases, resulting in rising healthcare utilization, particularly in ophthalmic services. In Turkey, ophthalmology accounts for a substantial proportion of specialist outpatient visits, highlighting the growing burden of eye-related conditions on healthcare resources (3-5).

Visual impairment in older adults is a key component of geriatric syndromes and is associated with adverse outcomes such as falls, frailty, cognitive decline, depressive symptoms, and loss of functional independence (6-8). These associations underscore the importance of integrating eye health into geriatric care and public health strategies.

Notably, a significant proportion of ophthalmology outpatient visits among older adults are attributable to preventable or manageable conditions, including dry eye disease, blepharitis, and uncorrected refractive errors (9-12). Early detection and appropriate management at the primary care level may improve referral efficiency, reduce unnecessary specialist consultations, and support more sustainable ophthalmic service utilization (13).

In this context, examining the reasons for ophthalmology outpatient visits among older adults is essential for understanding patterns of service utilization and informing evidence-based health policy and planning. This study aims to analyze the primary reasons for eye clinic visits among older adults in Turkey within a public health framework.

MATERIAL and METHOD

Study Design and Population

This retrospective observational study was conducted at the Ophthalmology Clinic of Ankara Dr. Abdurrahman Yurtaslan Oncology Training and Research Hospital. Medical records of patients aged ≥ 65 years examined between January and December 2024 were reviewed. To ensure diagnostic consistency, all examinations were performed by the same ophthalmologist. Only patients who underwent a comprehensive ophthalmologic examination were included, with dilated fundus examination performed when clinically indicated. For patients with multiple visits, only the first visit was analyzed, and when multiple complaints were present, the primary diagnosis determined by the examining physician was recorded. Participants were categorized into three age groups: 65–74, 75–84, and ≥ 85 years.

Visual Acuity Assessment

Visual acuity was measured using a Snellen chart and converted to logarithm of the minimum angle of resolution (LogMAR) units for analysis. Visual impairment was classified as no or mild ($\text{LogMAR} \leq 0.30$), moderate to severe ($\text{LogMAR} > 0.30$ to ≤ 1.30), and blindness ($\text{LogMAR} > 1.30$). Presenting visual acuity at the initial examination was used in all analyses.

Clinical Diagnosis

Clinical diagnoses were established according to standard diagnostic criteria and clinical practice guidelines. Cataract and age-related macular degeneration (AMD) were diagnosed by slit-lamp and dilated fundus examination, with optical coherence tomography (OCT) used when indicated. Dry eye disease and blepharitis were identified based on symptoms, ocular surface evaluation, tear function tests, and meibomian gland assessment. Glaucoma was diagnosed using intraocular

pressure measurement, optic nerve head evaluation, visual field testing, and OCT. Refractive errors were assessed by autorefractometry and subjective refraction. Corneal disorders were evaluated using slit-lamp examination and fluorescein staining, with microbiological tests performed when indicated. Retinal and posterior segment disorders were assessed using dilated fundus examination, fundus photography, OCT, and fluorescein angiography when clinically required. Eyelid and lacrimal system disorders were diagnosed by clinical examination. Ocular manifestations related to systemic diseases and medications were evaluated using medical history and available laboratory data.

Clinical Diagnosis Categorization

Clinical diagnoses were categorized using a predefined diagnostic list without modification, as follows:

- **Ocular Surface Diseases:** Blepharitis, Dry Eye, Allergic Conjunctivitis, Infectious Conjunctivitis, Episcleritis, Pterygium, Other Ocular Surface Diseases, Subconjunctival Hemorrhage
- **Corneal Diseases:** Keratitis, Corneal Ulcer, Corneal Scar, Corneal Dystrophies/Degenerations, Bullous Keratopathy
- **Lens and Anterior Segment Diseases:** Cataract, Posterior Subcapsular Opacity, Lens Subluxation/Dislocation, Other Anterior Segment Diseases, Postoperative Follow-up
- **Glaucoma**
- **Refractive Errors:** Myopia, Hyperopia, Astigmatism
- **Retina and Posterior Segment Diseases:** Diabetic Retinopathy, Venous Occlusion, Epiretinal Membrane, Age-Related Macular Degeneration, Acute Vitreous Detachment, Vitreous Hemorrhage, Retinal Detachment/Tear, Other Posterior Segment Disorders
- **Inflammatory and Infectious Diseases:** Uveitis, Preseptal Cellulitis, Orbital Cellulitis, Dacryoadenitis, Other Inflammatory and Infectious Diseases, Hordeolum
- **Ocular Trauma and Surgical Conditions:** Ocular Trauma
- **Eyelid and Lacrimal System Diseases:** Dermatochalasis, Ptosis, Entropion/Distichiasis, Ectropion, Nasolacrimal Duct Obstruction, Other Eyelid and Lacrimal System Disorders, Blepharospasm
- **Optic Nerve and Neuro-ophthalmic Conditions:** Optic Neuropathy, Other Optic Nerve Pathologies, Extraocular Neuro-ophthalmic Causes (e.g., diplopia, sudden vision loss)
- **Systemic Diseases and Eye Health:** Screening for systemic diseases and medication-related ocular conditions
- **Postoperative Follow-up:** Follow-up after ocular surgeries (e.g., cataract surgery, dacryocystorhinostomy, pterygium excision, pars plana vitrectomy, glaucoma surgery, corneal transplantation, retinal surgery, eyelid surgery)

Ethical Approval

The study was conducted in accordance with the principles of the Declaration of Helsinki and was approved by the Ethics Committee of Ankara Dr. Abdurrahman Yurtaslan Oncology Training and Research Hospital (Approval No:2025-10/159). Written informed consent was waived due to the retrospective nature of the study.

Statistical Analysis

Statistical analyses were performed using IBM SPSS Statistics for Windows, Version 28.0 (IBM Corp., Armonk, NY, USA). Continuous variables were expressed as mean $\pm$ standard deviation, and categorical variables as frequency and percentage. Normality was assessed using the Kolmogorov–Smirnov test. Comparisons across more than two groups were performed using one-way analysis of variance (ANOVA) with Tukey’s HSD post-hoc test. Associations between categorical variables were analyzed using the chi-square (χ^2) test, and trends across ordered categories were evaluated with the linear-by-linear association test. Correlations between age and visual acuity were assessed using Pearson’s correlation coefficient. A p-value <0.05 was considered statistically significant.

RESULTS

Of the 8,347 patients examined by the same ophthalmologist during the one-year study period, 1,461 (17.5%) were aged 65 years or older and included in the analysis. The mean age of the cohort was 73.32 ± 6.33 years (range: 65–97 years). Participants were distributed as follows: 930 (63.7%) aged 65–74 years, 428 (29.3%) aged 75–84 years, and 103 (7.0%) aged ≥ 85 years. Overall, 815 patients (55.8%) were female and 646 (44.2%) were male, with a statistically significant female predominance ($p < 0.001$).

Visual acuity values were similar between the right and left eyes. Mean LogMAR visual acuity was 0.230 ± 0.260 for the right eye and 0.225 ± 0.254 for the left eye. Age showed a statistically significant positive association with LogMAR visual acuity in both eyes ($p < 0.001$), indicating declining visual acuity with advancing age.

Based on visual acuity classification, 1,220 patients (83.5%) had normal or mild visual impairment, 211 (14.5%) had moderate-to-severe impairment, and 30 patients (2.0%) were classified as blind. Visual acuity categories differed significantly across age groups ($\chi^2(4) = 19.77$, $p < 0.001$). The proportion of patients with normal or mild vision decreased with age, while rates of moderate-to-severe impairment and blindness increased, demonstrating a significant linear trend (linear-by-linear association = 15.78, $p < 0.001$).

Mean LogMAR visual acuity values by age group are shown in Table 1. Visual acuity progressively worsened across age categories, with the poorest values observed among patients aged ≥ 85 years.

Table 1. Mean LogMAR Visual Acuity Across Age Groups and Statistical Comparisons Between Groups

Age Group (years)	N	Right Eye Mean $\pm$ SD	Left Eye Mean $\pm$ SD	Right Eye Tukey (significant)	Left Eye Tukey (significant)
65–74	930	0.205 ± 0.247	0.208 ± 0.259	75–84*, $\geq 85^*$	$\geq 85^*$
75–84	428	0.257 ± 0.269	0.237 ± 0.232	65–74*, $\geq 85^*$	$\geq 85^*$
≥ 85	103	0.341 ± 0.290	0.331 ± 0.262	65–74*, 75–84*	65–74*, 75–84*
Total	1461	0.230 ± 0.260	0.225 ± 0.254	–	–

SD, standard deviation * Statistically significant ($p < 0.05$)

Regarding diagnostic categories, ocular surface diseases were the most common (33.1%), followed by refractive errors (20.1%) and retina and posterior segment diseases (11%) (Table 2).

Table 2. Distribution of Ophthalmic Diagnostic Categories

Disease Group	Frequency	Percent
Ocular Surface Diseases	484	33.1
Corneal Diseases	38	2.6
Lens and Anterior Segment Diseases	120	8.2
Refractive Errors	294	20.1
Retina and Posterior Segment Diseases	161	11
Inflammatory and Infectious Diseases	73	5.0
Ocular Trauma	11	0.8
Eyelid and Lacrimal System Diseases	116	7.9
Optic Nerve and Neuro-ophthalmic Conditions	20	1.4
Follow-up examination for systemic diseases and drug toxicity	37	2.5
Glaucoma	50	3.4
Postoperative Follow-up	57	3.5
Total	1461	100.0

When specific diagnoses within these categories were examined, refractive errors were the most frequent, followed by dry eye disease and blepharitis (Table 3).

Table 3. Distribution of Primary Ophthalmic Diagnoses

Primary Ocular Disease	Frequency	Percent %
Blepharitis	156	10.7
Dry Eye	182	12.5
Allergic Conjunctivitis	14	1.0
Infectious Conjunctivitis	35	2.4
Episcleritis	9	0.6
Pterygium	10	0.7
Other Ocular Surface Diseases	9	0.6
Subconjunctival Hemorrhage	69	4.7
Keratitis	12	0.8
Corneal Ulcer	4	0.3
Corneal Scar	9	0.6
Corneal Dystrophies / Degenerations	12	0.8
Bullous Keratopathy	1	0.1
Cataract	70	4.8
Posterior Subcapsular Opacity	29	2.0
Lens Subluxation / Dislocation	10	0.7
Other Anterior Segment Diseases	11	0.8
Postoperative Follow-up	57	3.9
Glaucoma	50	3.4
Refractive Errors	294	20.1
Diabetic Retinopathy	15	1.0
Venous Occlusion	16	1.1
Epiretinal Membrane	12	0.8
Age-Related Macular Degeneration	52	3.6
Acute Vitreous Detachment	43	2.9
Vitreous Hemorrhage	2	0.1
Retinal Detachment / Retinal Tear	9	0.6
Other Posterior Segment Disorders	12	0.8
Uveitis	8	0.5
Preseptal Cellulitis	27	1.8
Dacryoadenitis	5	0.3
Other Inflammatory and Infectious Diseases	6	0.4
Ocular Trauma	11	0.8
Dermatochalasis	35	2.4
Ptosis	5	0.3
Entropion / Distichiasis	30	2.1
Ectropion	8	0.5
Nasolacrimal Duct Obstruction	18	1.2
Other Eyelid and Lacrimal System Disorders	10	0.7
Blepharospasm	10	0.7
Optic Neuropathy	3	0.2
Other Optic Nerve Pathologies	11	0.8
Extraocular Neuro-ophthalmic Causes	6	0.4
Screening for Systemic Diseases and Medications	37	2.5
Hordeolum	27	1.8
Total	1461	100.0

Refractive errors were the leading diagnosis in the 65–74 and 75–84 year age groups, while blepharitis was most commonly observed among patients aged ≥ 85 years (Table 4).

Table 4. Frequency and Percentage of Primary Ophthalmic Diseases by Age Group

Primary Disease	65–74 years Freq	65–74 years %	75–84 years Freq	75–84 years %	≥85 years Freq	≥85 years %
Blepharitis	88	9.5%	48	11.2%	20	19.5%
Dry Eye	104	11.2%	65	15.2%	13	12.6%
Allergic Conjunctivitis	7	0.8%	7	1.6%	0	0%
Infectious Conjunctivitis	20	2.2%	8	1.9%	7	6.8%
Episcleritis	5	0.5%	4	0.9%	0	0%
Pterygium	7	0.8%	3	0.7%	0	0%
Other Ocular Surface Diseases	5	0.5%	4	0.9%	0	0%
Subconjunctival Hemorrhage	48	5.2%	18	4.2%	3	2.9%
Keratitis	7	0.8%	4	0.9%	1	1.0%
Corneal Ulcer	2	0.2%	2	0.5%	0	0%
Corneal Scar	6	0.6%	2	0.5%	1	1.0%
Corneal Dystrophies / Degenerations	8	0.9%	2	0.5%	2	1.9%
Bullous Keratopathy	1	0.1%	0	0%	0	0%
Cataract	48	5.2%	17	4.0%	5	4.9%
Posterior Subcapsular Opacity	16	1.7%	11	2.6%	2	1.9%
Lens Subluxation / Dislocation	4	0.4%	6	1.4%	0	0%
Other Anterior Segment Diseases	8	0.9%	3	0.7%	0	0%
Postoperative Follow-up	38	4.1%	16	3.7%	3	2.9%
Glaucoma	26	2.8%	18	4.2%	6	5.8%
Refractive Errors	205	22%	80	18.7%	9	8.8%
Diabetic Retinopathy	11	1.2%	3	0.7%	1	1.0%
Venous Occlusion	11	1.2%	4	0.9%	1	1.0%
Epiretinal Membrane	6	0.6%	5	1.2%	1	1.0%
Age-related Macular Degeneration	30	3.2%	20	4.7%	2	1.9%
Acute Vitreous Detachment	38	4.1%	2	0.5%	3	2.9%
Vitreous Hemorrhage	1	0.1%	0	0%	1	1.0%
Retinal Detachment / Retinal Tear	7	0.8%	2	0.5%	0	0%
Other Posterior Segment Disorders	10	1.1%	2	0.5%	0	0%
Uveitis	4	0.4%	3	0.7%	1	1.0%
Preseptal Cellulitis	19	2.0%	7	1.6%	1	1.0%
Dacryoadenitis	3	0.3%	1	0.2%	1	1.0%
Other Inflam./Infectious Diseases	3	0.3%	3	0.7%	0	0%
Ocular Trauma	7	0.8%	3	0.7%	1	1.0%
Dermatochalasis	26	2.8%	5	1.2%	4	3.9%
Ptosis	1	0.1%	3	0.7%	1	1.0%
Entropion / Distichiasis	14	1.5%	12	2.8%	4	3.9%
Ectropion	3	0.3%	4	0.9%	1	1.0%
Nasolacrimal Duct Obstruction	12	1.3%	5	1.2%	1	1.0%
Other Eyelid & Lacrimal Disorders	8	0.9%	1	0.2%	1	1.0%
Blepharospasm	6	0.6%	3	0.7%	1	1.0%
Optic Neuropathy	1	0.1%	2	0.5%	0	0%
Other Optic Nerve Pathologies	7	0.8%	2	0.5%	2	1.9%
Extraocular Neuro-ophthalmic Causes	3	0.3%	2	0.5%	1	1.0%
Screening for Systemic Diseases	30	3.2%	6	1.4%	1	1.0%
Hordeolum	16	1.7%	10	2.3%	1	1.0%
Total	930	100%	428	100%	103	100%

Table 5. Distribution of Primary Ophthalmic Diseases by Gender

Primary Disease	Female Freq	Female %	Male Freq	Male %
Blepharitis	79	9.7	77	11.9
Dry Eye	119	14.6	63	9.8
Allergic Conjunctivitis	9	1.1	5	0.8
Infectious Conjunctivitis	23	2.8	12	1.9
Episcleritis	3	0.4	6	0.9
Pterygium	4	0.5	6	0.9
Other Ocular Surface Diseases	4	0.5	5	0.8
Subconjunctival Hemorrhage	40	4.9	29	4.5
Keratitis	4	0.5	8	1.2
Corneal Ulcer	3	0.4	1	0.2
Corneal Scar	5	0.6	4	0.6
Corneal Dystrophies / Degenerations	3	0.4	9	1.4
Bullous Keratopathy	1	0.1	–	–
Cataract	34	4.2	36	5.6
Posterior Subcapsular Opacity	15	1.8	14	2.2
Lens Subluxation / Dislocation	4	0.5	6	0.9
Other Anterior Segment Diseases	5	0.6	6	0.9
Postoperative Follow-up	37	4.5	20	3.1
Glaucoma	30	3.7	20	3.1
Refractive Errors	153	18.8	141	21.8
Diabetic Retinopathy	8	1.0	7	1.1
Venous Occlusion	8	1.0	8	1.2
Epiretinal Membrane	6	0.7	6	0.9
Age-Related Macular Degeneration	31	3.8	21	3.3
Acute Vitreous Detachment	24	2.9	19	2.9
Vitreous Hemorrhage	2	0.2	2	0.2
Retinal Detachment / Retinal Tear	5	0.6	4	0.6
Other Posterior Segment Disorders	9	1.1	3	0.5
Uveitis	3	0.4	5	0.8
Preseptal Cellulitis	19	2.3	8	1.2
Dacryoadenitis	2	0.2	3	0.5
Other Inflammatory and Infectious Diseases	4	0.5	2	0.3
Ocular Trauma	6	0.7	5	0.8
Dermatochalasis	21	2.6	14	2.2
Ptosis	3	0.4	2	0.3
Entropion / Distichiasis	18	2.2	12	1.9
Ectropion	4	0.5	4	0.6
Nasolacrimal Duct Obstruction	11	1.3	7	1.1
Other Eyelid and Lacrimal System Disorders	4	0.5	6	0.9
Blepharospasm	7	0.9	3	0.5
Optic Neuropathy	–	–	3	0.5
Other Optic Nerve Pathologies	5	0.6	6	0.9
Extraocular Neuro-ophthalmic Causes	4	0.5	2	0.3
Screening for Systemic Diseases and Medications	21	2.6	16	2.5
Hordeolum	15	1.8	12	1.9
Total	815	100.0	646	100.0

Among ocular surface diseases, dry eye disease (n = 182) and blepharitis (n = 156) were the most frequently observed conditions.

Among the 30 patients classified as blind, the leading causes of vision loss were age-related macular degeneration (26.7%), cataract (20.0%), and glaucoma (16.7%), followed by optic atrophy, diabetic retinopathy, and retinal detachment or tear. Less frequent causes included corneal scar, bullous keratopathy, posterior subcapsular cataract, and vitreous hemorrhage. Overall, many causes of blindness were potentially preventable or treatable.

DISCUSSION

In this retrospective study, we evaluated patterns of ophthalmology outpatient visits among adults aged 65 years and older in a tertiary care setting. Our findings demonstrate that ocular surface diseases, refractive errors, and retinal and posterior segment diseases account for the majority of ophthalmology visits in this age group, many of which are potentially preventable or manageable with timely and appropriate intervention. In parallel, visual acuity declined progressively with advancing age, accompanied by a significant increase in moderate-to-severe visual impairment and blindness in the oldest age groups. These findings indicate that age-related visual problems represent not only frequent clinical conditions but also an important component of geriatric health, with implications for functional status, independence, and healthcare utilization. From a geriatric and public health perspective, understanding the distribution of ophthalmic diagnoses in older adults is essential for planning age-appropriate, efficient, and integrated healthcare services (14).

Mean LogMAR visual acuity deteriorated significantly with increasing age, confirming that visual decline is an integral component of the aging process. This observation is consistent with population-based and longitudinal studies demonstrating progressive reductions in visual acuity across the lifespan, including a cumulative decline of approximately 0.3 LogMAR from middle age to late adulthood and a marked reduction in the proportion of individuals maintaining good distance visual acuity beyond the age of 80 years (15,16).

Consistent with this pattern, age-stratified analyses revealed a clear shift from normal or mild visual impairment toward moderate-to-severe visual impairment and blindness with advancing age. While most individuals aged 65–74 years maintained normal or mildly impaired vision, the proportion of moderate-to-severe impairment and blindness increased steadily in older age groups, reaching its highest levels among those aged 85 years and older. This linear trend highlights the cumulative burden of visual impairment with aging.

Importantly, age-related visual decline should not be viewed merely as an isolated sensory deficit. Visual impairment is increasingly recognized as a core component of geriatric syndromes and is strongly associated with a wide range of adverse outcomes, including falls, frailty, cognitive decline, depressive symptoms, social isolation, and loss of functional independence. Beyond its direct impact on visual function, vision loss contributes to reduced mobility, impaired balance, decreased participation in daily and social activities, and increased dependence on caregivers, thereby amplifying vulnerability in older adults (6-8).

From a public health and geriatric care perspective, these associations highlight that visual impairment acts as both a marker and a mediator of broader health deterioration in later life (17,18). Vision loss may accelerate functional decline by limiting physical activity, increasing fear of falling, and reducing access to healthcare and social engagement (19). Moreover, the bidirectional relationship between visual impairment and conditions such as cognitive impairment and depression suggests that unrecognized or untreated vision problems may exacerbate existing geriatric syndromes and complicate their management (20). These findings underscore the critical importance of integrating routine visual assessment into comprehensive geriatric care and regular health evaluations of older adults.

Ocular surface diseases constituted the most common reason for ophthalmology outpatient visits in this cohort, with dry eye disease and blepharitis emerging as the leading diagnoses. Dry eye disease was more prevalent among women, whereas blepharitis was more frequently observed among men, suggesting sex-specific patterns of ocular surface disorders in older adults. The higher prevalence of dry eye disease in older women has been attributed to age-related hormonal changes, reduced tear production, and meibomian gland dysfunction, whereas blepharitis in men may reflect differences in sebaceous gland activity, eyelid hygiene, and bacterial colonization (21,22). Although these conditions are rarely vision-threatening, they are often chronic and symptomatic, substantially affecting ocular comfort, visual function, and quality of life.

From a health systems and geriatric care perspective, it is noteworthy that a substantial proportion of ophthalmology visits were attributable to conditions that are largely preventable or amenable to effective management. Dry eye disease, blepharitis, and uncorrected refractive errors can often be identified through routine screening and managed with simple, low-cost interventions such as patient education, ocular surface care, and timely optical correction. When incorporated into structured primary care-based screening and management pathways, these conditions may not require specialist referral, thereby reducing unnecessary ophthalmology visits and optimizing resource utilization (22,23).

The major causes of visual impairment and blindness in older adults include cataract, age-related macular degeneration (AMD), glaucoma, diabetic retinopathy, and refractive errors (24,25). Cataract, although highly prevalent, is largely correctable with surgery, making early detection and timely treatment critical for preventing avoidable vision loss (26). AMD remains a leading cause of irreversible central vision loss, yet regular monitoring and timely interventions can slow disease progression (27,28). Chronic conditions such as glaucoma and diabetic retinopathy require ongoing surveillance and management to reduce the risk of severe visual impairment or blindness, while refractive errors remain among the most easily correctable causes of visual impairment (29-31).

In our cohort, AMD, cataract, and glaucoma were the leading causes of blindness, highlighting that vision loss in older adults is multifactorial and, importantly, partially preventable. Early recognition and timely intervention—particularly for surgically treatable conditions—can substantially reduce the burden of blindness. Primary care physicians and geriatricians play a critical role in identifying at-risk individuals, providing first-line management, and ensuring appropriate referral. Such proactive approaches are essential for preserving functional independence and quality of life in older populations (32-35).

Eyelid disorders and other ocular surface conditions, although not typically vision-threatening, significantly affect ocular comfort and quality of life and may increase the risk of complications if left untreated. These conditions can often be identified and initially managed in primary care settings, further emphasizing the importance of basic eye care integration into geriatric services (36-38). In addition, systemic diseases and medications frequently encountered in older adults may adversely affect ocular health, underscoring the need for routine review of systemic conditions and medication use during geriatric assessments (39-42).

Taken together, these findings emphasize that maintaining eye health in older adults requires a comprehensive and integrated approach addressing both age-related vision loss and common ocular surface and eyelid disorders, as well as the ocular effects of systemic diseases and medications. Strengthening collaboration between ophthalmologists, primary care physicians, and geriatricians; promoting early detection and first-line management; and integrating routine eye assessments into geriatric care pathways may reduce preventable visual impairment, improve quality of life, and support functional independence in aging populations.

This study has several limitations that warrant consideration. First, as a single-center, hospital-based study, the findings may not be fully generalizable to the broader elderly population in Turkey or other regions. Second, the cross-sectional design prevents assessment of causal relationships and the evaluation of longitudinal changes in ocular health over time. Third, certain ocular conditions—particularly early-stage glaucoma and subclinical posterior segment disorders—may have been underdiagnosed, as not all patients underwent advanced imaging or functional testing. Additionally, systemic comorbidities and medication histories were self-reported in some cases, which may introduce reporting bias. Nevertheless, the inclusion of consecutive patients examined by a single ophthalmologist enhances diagnostic consistency and reflects real-world outpatient practice. Despite these limitations, the study provides valuable insights into the prevalence and distribution of ophthalmic diagnoses among elderly patients and highlights important considerations for geriatric ophthalmologic care.

CONCLUSION

In conclusion, our findings highlight that visual impairment in older adults is multifactorial and progressive, with ocular surface diseases and refractive errors representing the most common diagnostic categories, and cataract, age-related macular degeneration, and glaucoma emerging as the leading vision-threatening diagnoses. Regular eye examinations, early diagnosis, and timely interventions—including correction of refractive errors, management of ocular surface disorders, and appropriate surgical or pharmacological treatments—are essential for preserving visual function and quality of life. The integration of eye care into geriatric and primary care services, particularly for individuals with multimorbidity or polypharmacy, is of critical importance. Furthermore, early recognition and management of common but frequently overlooked conditions, such as dry eye disease and blepharitis, by first-line healthcare providers may substantially reduce the burden of visual impairment and support the maintenance of functional independence in older adults.

Ethics Approval: This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Review Committee of Ankara Dr. Abdurrahman Yurtaslan Oncology Training and Research Hospital (Approval No:2025-10/159).

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