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Original Research Article

Establishing the Clinical Profile of Ocular Morbidity: A Cross-Sectional Study

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Abstract

Background: Ocular morbidity remains a major public-health concern, particularly in low- and middle-income regions where preventable and treatable eye conditions are common.

Objective: To establishing the clinical patterns of ocular morbidity and to assess associations between demographic factors, systemic comorbidities, and significant ocular disease among patients presenting to a tertiary care ophthalmology outpatient department.

Methods: This descriptive, cross-sectional study included 800 patients presenting to the department of ophthalmology, Katihar Medical College, Katihar between 15 June 2025 and 15 January 2026. Data were collected using a structured proforma and included demographics, presenting symptoms, ophthalmic examination findings, and systemic comorbidities. Diagnoses were categorized into major morbidity groups.

Results: Refractive errors were the most common ocular morbidity (37.0%), followed by conjunctival disorders (24.0%), cataracts (16.0%), corneal diseases (13.0%), and retinal diseases (7.0%). Age demonstrated a strong association with cataract, glaucoma, and retinal disease ($p < 0.001$). Systemic comorbidities such as diabetes and hypertension showed significant clustering with retinopathy and lens-related pathology ($p < 0.001$). Manual labour occupation was associated with ocular trauma and corneal injury ($p < 0.001$). Logistic regression identified age ≥ 50 years (AOR 4.62), poor presenting visual acuity (<6/18) (AOR 5.42), diabetes mellitus (AOR 3.94), hypertension (AOR 2.21), and manual labor occupation (AOR 2.85) as independent predictors of clinically significant ocular morbidity.

Conclusion: Ocular morbidity in this population is dominated by preventable and treatable conditions, with strong influences from age, systemic comorbidities, occupation, and visual acuity at presentation.

Keywords: ocular morbidity, refractive error, conjunctivitis, cataract, corneal disease, retinal disease, glaucoma.
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Introduction

Ocular morbidity is one of the most underestimated public-health issues on the planet, being affected by its enormous burden on the quality of life, productivity, and long-term disability [1]. The reason why it is particularly significant is that most of the ocular ailments are preventable or treatable. It is estimated that there are hundreds of millions of individuals worldwide with some amount of visual morbidity (the majority of which is preventable), comprising uncorrected refractive errors, cataracts, and ocular surface disorders [2]. This is disproportionately borne by the low- and middle-income populations, in which disparities in awareness, screening, and access to the specialised eye care predispose common eye diseases to chronic and disabling phases [3]. Such discrepancy of disease severity and healthcare availability underscores ocular morbidity as a clinical issue rather than a population-health priority requiring organized assessment. The ocular morbidity spectrum encompasses a wide scale of disorders, which range from the self-limiting, benign ones up to chronic, sight-threatening diseases [4]. Diseases such as allergic conjunctivitis, dry eye disease, refractive errors, and lid diseases are very prevalent among the young populations and may negatively impact on academic performance, concentration, and daily functioning [5]. On the other hand, older age groups are dominated by cataracts, glaucoma, diabetic retinopathy, and age-related macular degeneration, with their interaction of age, systemic comorbidity, and cumulative environmental

exposures [6]. The prevalence of certain conditions in the various communities is also determined by environmental irritants, excessive use of digital devices, lack of hygiene, ultraviolet radiation, and allergens [7]. This inconsistency implies that ocular morbidity cannot be addressed as a standard issue its patterns change with climate, lifestyle, socioeconomic status, and cultural practices [8]. Delayed presentation is a great fuel to the burden. Patients often fail to notice early signs such as itching, watering, redness, blur of vision, or headache, and often explain them by fatigue or other environmental factors instead of ocular pathology. Self-medication and improper use of over-the-counter steroids and antibiotic drops also complicate the clinical picture, concealing the symptoms and aggravating the underlying pathology [9]. Trauma is yet another critical factor and it is more so the case in areas where there are low occupational safety standards. Agricultural workers, laborers, and industrial employees are exposed to foreign bodies, chemicals, UV light, and high-speed particles daily, which significantly contributes to the development of the risk of preventable injuries [10]. Under these conditions, ocular trauma becomes a chronic cause of unilateral visual impairment among otherwise economically productive populations of youth. Children are a highly vulnerable group [11]. Uncorrected refractive errors have continued to be among the major contributors to reduced vision in children of school-going age, which directly affects learning capacity, performance on scholarly subjects, as well as, psychosocial growth. Ocular disorders such as amblyopia, congenital cataracts, congenital glaucoma, eyelid disorders, and childhood corneal diseases have to be detected early so as to avoid perennial blindness [12].

Objective: To establish the clinical patterns of ocular morbidity and to assess associations between demographic factors, systemic comorbidities, and significant ocular disease among patients presenting to a tertiary care ophthalmology outpatient department.

Methodology

This descriptive, cross-sectional study was conducted in the department of ophthalmology at Katihar Medical College, Katihar from 15 June 2025 to 15 January 2026. The sample size calculated was 800. Study subjects were enrolled using non-probability consecutive sampling technique, first 25 patients fulfilling the selection criteria per day, conducted two days per week. This process continued until the desired sample size was reached.Patients of all ages and either gender belonging to Katihar districtwith any ocular symptoms or clinical findings that were suggestive of ocular morbidity were included in the study. This was an inclusive coverage of conditions that included refractive errors, conjunctival conditions, corneal conditions, lid and adnexal conditions, lens opacities, retinal disorders, neuro-ophthalmic disorders, and ocular trauma. Patients who were ready to have a full ophthalmic check and gave informed consent were recruited. Patients who had incomplete clinical records, uncooperative patients who could not undergo a complete ophthalmic examination and those who only came to replenish their prescription but without active symptoms or clinical evidence were excluded. Those that received emergency ophthalmic care that did not necessitate urgent intervention were also ruled out because the examination could not be put under the study.

Data Collection: A structured and pre-designed proforma was used to collect data. All patients were given a comprehensive history that involved presenting complaints, duration of symptoms, any past ocular disease, systemic comorbidities, medications use and occupational or environmental exposure. The visual acuity was determined by the help of a standard Snellen chart, and pinhole tests were used when necessary. Anterior segment examination was done by applying a torchlight to the eye and then a slit-lamp biomicroscopy. The indirect ophthalmoscopy or slit-lamp biomicroscopy with +90D lens was used to examine the posterior segment. When the indications were taken, intraocular pressure was also measured using applanation tonometry. Further examination, such as refraction, corneal staining, Schirmer test, ultrasonography, or optical coherence tomography, was done according to clinical necessity. The variables documented in the study were extensive (age, gender, presenting symptoms, duration of symptoms, and laterality, clinical diagnosis, type of ocular morbidity, visual acuity categories, and related systemic diseases). The diagnoses were further classified into major groups that included refractive errors, conjunctival disorders, corneal diseases, cataracts, retinal diseases, glaucoma, lid disorders, neuro-ophthalmic conditions and ocular trauma.

Data Analysis: Data were entered and analyzed using SPSS v26. Descriptive statistics, including frequency distributions and percentages, were used to summarize categorical variables, while mean and standard deviation were calculated for continuous variables such as age. The prevalence of ocular conditions was calculated, and subgroup analyses were performed by age group, gender, and diagnostic category to identify notable patterns. A p-value of <0.05 was considered significant.

Results

A total of 800 patients were included in the study. The largest age group was 21–35 years, representing 240 patients (30.0%), followed closely

by those aged 36–50 years at 216 patients (27.0%). Patients aged 51–65 years made up 168 cases (21.0%), while those aged 1–20 years represented 96 cases (12.0%). The smallest age group was individuals above 65 years, accounting for 80 cases (10.0%). Gender distribution was nearly balanced, with 392 males (49.0%) and 408 females (51.0%). Most patients presented with bilateral symptoms, totalling 552 cases (69.0%), whereas unilateral symptoms were reported in 248 cases (31.0%).

Table 1: Demographic Characteristics of Study Participants (N = 800)

Variable	Category	n (%)
Age Groups	1–20 years	96 (12.0)
	21–35 years	240 (30.0)
	36–50 years	216 (27.0)
	51–65 years	168 (21.0)
	>65 years	80 (10.0)
Gender	Male	392 (49.0)
	Female	408 (51.0)
Laterality	Unilateral Symptoms	248 (31.0)
	Bilateral Symptoms	552 (69.0)

Blurring of vision emerged as the most common presenting symptom, reported by 420 patients (52.5%). Redness of the eyes was seen in 288 cases (36.0%), while watering or epiphora was noted in 264 cases (33.0%). Itching was present in 240 cases (30.0%), and ocular pain in 168 patients (21.0%). Foreign-body sensation was reported in 152 cases (19.0%), and headache or eye strain in 204 cases (25.5%). Less frequent symptoms included photophobia (84 cases; 10.5%), flashes or floaters (48 cases; 6.0%), and trauma-related symptoms (40 cases; 5.0%). Refractive errors were the most common ocular morbidity, diagnosed in 296 patients (37.0%). Conjunctival disorders including allergic and infective conjunctivitis were identified in 192 patients (24.0%). Cataract was the third most common condition, found in 128 cases (16.0%), followed by corneal diseases such as dry eye, keratitis, and ulcers in 104 patients (13.0%). Lid and adnexal disorders were seen in 88 patients (11.0%). Retinal diseases, including diabetic retinopathy, age-related macular degeneration, and hypertensive retinopathy, accounted for 56 cases (7.0%).

Table 2: Presenting Symptoms Among Patients (N = 800)

Symptom	n (%)
Blurring of vision	420 (52.5)
Redness of eyes	288 (36.0)
Watering / Epiphora	264 (33.0)
Itching	240 (30.0)
Ocular pain	168 (21.0)
Foreign-body sensation	152 (19.0)
Headache / Eye strain	204 (25.5)
Photophobia	84 (10.5)
Flashes / Floaters	48 (6.0)
Trauma-related symptoms	40 (5.0)
Diagnostic Category	
Refractive errors	296 (37.0)
Conjunctival disorders (allergic/infective)	192 (24.0)
Cataract	128 (16.0)
Corneal diseases (dry eye, keratitis, ulcers)	104 (13.0)
Lid and adnexal disorders	88 (11.0)
Retinal diseases (DR, ARMD, HR)	56 (7.0)
Glaucoma	44 (5.5)
Neuro-ophthalmic disorders	16 (2.0)
Ocular trauma	40 (5.0)
Others (uveitis, congenital anomalies)	36 (4.5)

Refractive errors predominated across all age groups, especially among individuals aged more than 65 years (67.5%) and 51-65 years (48.8%). Conjunctival disorders followed a similar pattern, showing highest frequencies in older patients aged more than 65 years (32.5%) and in patients aged 51-65 years (28.0%). Cataract demonstrated a clear age-related pattern, with the majority of cases occurring in older patients aged more than 65 years (50.0%%) flowed by age 51-65 years (34.0%) and

minimum in age group 1-20 years (1.0%). Retinal diseases and glaucoma showed strong clustering in older age categories, with nearly all cases occurring after age 36, and the highest proportions seen in those above 65 years. Ocular trauma was most frequent among younger patients, with 31 (12.9%) of all cases among 21–35-year age group patients and 5 (5.2%) in those aged 1–20 years.

Table 3: Age-Wise Distribution of Major Ocular Morbidities (N = 800)

Ocular Condition	1–20 yrs % (n=96)	21–35 yrs % (n=240)	36–50 yrs % (n=216)	51–65 yrs % (n=168)	>65 yrs % (n=80)
Refractive errors	23 (24.0)	68 (28.3)	69 (32.0)	82 (48.8)	54 (67.5)
Conjunctival disorders	16 (16.7)	52 (21.7)	51 (23.6)	47 (28.0)	26 (32.5)
Cataract	1 (1.0)	11 (4.6)	19 (8.8)	57 (34.0)	40 (50.0)
Corneal diseases	7 (7.2)	21 (8.8)	31 (14.4)	27 (16.0)	18 (22.5)
Retinal diseases	0 (0.0)	4 (1.7)	12 (5.6)	20 (11.9)	20 (25.0)
Glaucoma	0 (0.0)	4 (1.7)	8 (3.7)	12 (7.1)	20 (25.0)
Ocular trauma	5 (5.2)	31 (12.9)	4 (1.9)	0 (0.0)	0 (0.0)

Poor visual acuity (<6/18) was the strongest predictor (AOR 5.42). Age ≥ 50 years also demonstrated a strong association (AOR 4.62), indicating a markedly increased risk of advanced ocular disease. Systemic diseases were significant contributors, with diabetes mellitus (AOR 3.94) and hypertension (AOR 2.21) showing strong independent associations. Manual labour occupation increased risk nearly threefold (AOR 2.85), reflecting higher exposure to trauma and corneal injury. Unilateral symptoms (AOR 1.92) and a history of allergic disease (AOR 1.76) were also significant predictors. Male gender was not a statistically significant predictor (p = 0.264).

Table 4: Logistic Regression Predicting Significant Ocular Morbidity

Predictor	AOR	95% CI	p-value
Age ≥ 50 years	4.62	3.10–6.89	<0.001
Diabetes mellitus	3.94	2.60–5.95	<0.001
Hypertension	2.21	1.44–3.47	<0.001
Poor visual acuity (<6/18)	5.42	3.45–8.50	<0.001
Manual labour occupation	2.85	1.78–4.53	<0.001
Unilateral symptoms	1.92	1.31–2.85	0.001
Allergic disease	1.76	1.14–2.62	0.011
Male gender	1.18	0.87–1.61	0.264

Discussion

This hospital based descriptive study of 800 patients offers a comprehensive view of the incidence and clinical trends of ocular morbidity in a tertiary care unit. The results show that most of the cases can be caused by common, preventable, and easily curable conditions, and the prevalent clinical presentations are refractive errors, conjunctival disorders, cataracts, and corneal diseases. These findings support the understanding of other researchers around the world that preventable factors frequently contribute to visual impairment and that screening initiatives and systematic screening approaches are still indispensable. The most common ocular morbidity was the refractive errors which represented over a third of the cases. This tendency is similar to that of the earlier studies, which constantly emphasize the presence of uncorrected refractive errors as the main source of visual impairment in all ages. The disproportionate rate in older patients in this study is due to presbyopic age, cataract and also relatively high usage of digital devices, visual strain, and little adoption of regular vision screening are likely to increase. There was also the frequent occurrence of conjunctival diseases especially allergic and infective conjunctivitis. The prevalence of allergic conjunctivitis is consistent with the environmental exposure, seasonal trends, and increased allergic susceptibility in other comparable groups [13].

Cataracts were one of the significant morbidities in older adults as the degeneration of the lens by age is indicative. Almost 84 percent of the occurrences of cataracts were seen in people who were above 50 years. This distribution is in line with other data published in the past that indicated that age is the best predictor of cataract formation. The same was the case with retinal diseases and glaucoma as there was a great clustering in older age groups and among patients with systemic diseases like diabetes mellitus and hypertension. Patients who had long-standing diabetes were often diagnosed with diabetic retinopathy, which underscores the need to treat like integrated care [14]. Morbidity was also a large proportion of corneal diseases. Dry eye disease, superficial keratitis, and corneal abrasions were also common especially in people who work

in their offices and those who are exposed to environmental irritants. The morbidity was made up of ocular trauma, mostly in younger male manual labourers. The trend is typical of such communities where occupational safety measures and especially using protective eyewear are minimal. The statistical significance of the occupational influence demonstrated the necessity to focus on workplace safety interventions [15-17].The paper also revealed that there were high correlations between presenting symptoms and the ultimate diagnoses. Blurring of vision was found to be strongly linked with refractive errors and cataracts, whereas redness, watering, and itching were linked to conjunctival and corneal surface diseases. Bad visual acuity at presentation was significantly correlated with cataracts, glaucoma and retinal diseases, and was one of the strongest predictors of significant morbidity in logistic regression analysis [18]. Comorbidities of a systemic nature contributed immensely to ocular outcome. Retinal and lens related pathologies were strongly related to diabetes and hypertension.

The logistic regression analysis showed that age over 50 years, presenting poor visual acuity, diabetes, hypertension and manual labour occupation were independent predictors of clinically significant ocular morbidity. Such results are in line with previous reports focusing on the interaction between the burden of disease systemically and the result of ocular health. This research study has a number of limitations that can be considered to interpret the results [19]. The cross-sectional study gives a picture of the ocular morbidity trends, but fails to reveal the seasonal trends, the course over time, and the treatment results [20-22]. Since the research was carried out in a tertiary care hospital, the population of the patients might not adequately reflect the trends in the community, with people having more intense or chronic symptoms being more inclined to pursue specialist attention.

The consecutive sampling used might have caused a selection bias especially those who are under-represented and who do not regularly access ophthalmic services. To the extent that it was clinically necessary, some diagnostic assessments were not done, including optical coherence tomography and visual field testing, which could have caused underprocessing some conditions such as early glaucoma or mild retinal disease. Also, the socioeconomic determinants, health-seeking behaviour, and environmental exposures were not evaluated, and these might also be used to explain differences in the ocular morbidity.

Conclusion

It is concluded that ocular morbidity in this population is predominantly driven by common, preventable, and treatable conditions, with refractive errors, conjunctival disorders, cataracts, and corneal diseases forming the majority of clinical presentations.

Age, systemic comorbidities, occupation, and presenting visual acuity were significant predictors of clinically important ocular disease, underscoring the multifactorial nature of ocular morbidity. The strong association of older age with cataract, glaucoma, and retinal pathology, as well as the clustering of diabetic and hypertensive eye disease in affected individuals, reinforces the need for integrated systemic and ocular health strategies.

References

1. Dubey, Renu Shukla; Muduthanapally, Charani; Navatha, Kyatha[1]; Das, Sangeeta. Prevalence and causes of ocular morbidity among school children in urban and rural areas. Kerala Journal of Ophthalmology 36(2):p 133-136, May–Aug 2024. | DOI: 10.4103/kjo.kjo_59_23.
2. Abayo G, Gessesse GW, Asaminew T. Prevalence and Pattern of Ocular Morbidity among School Children in Southern Ethiopia. Ethiop J Health Sci. 2021 Jul;31(4):831-836. doi: 10.4314/ejhs.v31i4.18. PMID: 34703183; PMCID: PMC8512935.
3. Dube M, Gupta S, Sarkar D, et al. (August 07, 2024) Prevalence and Pattern of Ocular Diseases Among Children Aged 7-14 Years Visiting a Tertiary Care Teaching Hospital in Central India. Cureus 16(8): e66383. doi:10.7759/cureus.66383.
4. Pascolini D, Mariotti SP. Global estimates of visual impairment: 2010. Br J Ophthalmol. 2012;96(5):614–618. doi:10.1136/bjophthalmol-2011-300539.
5. Sayin N, Kara N, Pekel G. Ocular complications of diabetes mellitus. World J Diabetes. 2015;6(1):92–108. doi:10.4239/wjd.v6.i1.92.
6. Scott SC, Ajaiyeoba AI. Eye diseases in general out-patient clinic in Ibadan. Niger J Med. 2003;12(2):76–80. PMID: 12956012.
7. Singh MM, Murthy GV, Venkatraman R, et al. A study of ocular morbidity among elderly population in a rural area of central India. Indian J Ophthalmol. 1997;45(1):61–65. PMID: 9475015.
8. Haq I, Khan Z, Khalique N, et al. Prevalence of common ocular morbidities in adult population of Aligarh. Indian J Community Med. 2009;34(3):195–201. doi:10.4103/0970-0218.55283.
9. Jabbar Z, Begum SR, Islam MS. Pattern of eye diseases in Dhaka city district level and village areas in Bangladesh. J Ophthalmol Clin Res. 2021;5(1):1–5.

10. V, R. L. C. A. Prevalence and pattern of ocular morbidity and factors influencing ocular morbidity in a rural population in south India: a community based cross sectional study. Int J Community Med Public Health [Internet]. 2017 Jul. 22 [cited 2026 Jan. 29];4(8):2939-45. Available from: https://www.ijcmph.com/index.php/ijcmph/article/view/1357.
11. World Health Organization. Global data on visual impairments 2010. Available from: http://www.who.int/blindness/globaldatafinalforweb.pdf. Accessed 18 February 2017.
12. Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Pararajasegaram R, Pokharel GP, et al. Global data on visual impairment in the year 2002. Bull World Health Organ. 2004;82(11):844–851.
13. National Programme for Control of Blindness. Available from: http://npcb.nic.in/index.asp. Accessed 14 January 2017.
14. Kumar A, Srivastava AK, Mishra M, Srivastava VK. Prevalence of ocular morbidity in rural population of eastern Uttar Pradesh, India. Indian J Community Health. 2016;28(3):275–279.
15. Pisudde P, Taywade M, Sushma K, Mehendale A, Shukla A. An epidemiological study of common ocular morbidities among elderly population in the Wardha District, Maharashtra, India. Epidemiology. 2015;5(2):1161–1165.
16. Lawrence JM. Pattern of ocular findings among patients aged 40 years and above attending eye clinic at Juba Teaching Hospital in Southern Sudan. Nairobi: University of Nairobi; 2014.
17. Bhardwaj A. Incidence of cataract in tertiary care hospital. Indian J Appl Res. 2016;6(1):512–513.
18. Singh MM, Murthy G, Venkatraman R, Rao S, Nayar S. A study of ocular morbidity among elderly population in a rural area of central India. Indian J Ophthalmol. 1997;45(1):61–65.
19. Puri DS. Pattern and distribution of ocular morbidity in patients visiting the field practice area of tertiary care hospital of North India. J Biomed Pharmacol Res. 2013;2(2):42–46.
20. Sehgal RK, Garg R, Anand S, Dhot PS, Singhal P. A study of the morbidity profile of geriatric patients in rural areas of Ghaziabad, Uttar Pradesh. Int J Med Sci Public Health. 2016;5(2):176–180.
21. Mehari ZA, Yimer AW. Prevalence of refractive errors among schoolchildren in rural central Ethiopia. Clin Exp Optom. 2013;96(1):65–69.