Original Research

PATTERN OF OCULAR MORBIDITIES IN PATIENTS ATTENDING OPHTHALMOLOGY OPD

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ABSTRACT

Introduction: Ocular morbidities constitute a significant proportion of outpatient attendances in ophthalmology departments and represent an important cause of visual impairment and reduced quality of life. Understanding the pattern of ocular diseases in ophthalmology outpatient departments (OPD) helps in planning preventive strategies and allocating healthcare resources effectively.

Aims: To study the pattern of ocular morbidities among patients attending the Ophthalmology OPD.

Materials and Methods: This study was designed as a hospital-based observational cross-sectional study conducted in the Department of Ophthalmology, Narayana Medical College and Hospital, Chinthareddypalem, Nellore, Andhra Pradesh, India. The study was carried out over a period of one year. The study population included all patients attending the Ophthalmology OPD with various ocular complaints during the study period. A total sample size of 100 patients was included for analysis.

Results: In the present study, a total of 100 patients were evaluated, out of which 50 were diabetic and 50 were non-diabetic. Among diabetic patients, 18 patients (36%) had DR while 32 patients (64%) did not show any evidence of DR. In contrast, among non-diabetic patients, only 2 patients (4%) had DR whereas 48 patients (96%) were free from DR changes. The association between diabetes status and presence of diabetic retinopathy was found to be highly statistically significant with a p value of <0.0001.

Conclusion: The pattern of ocular morbidities in OPD patients shows that refractive errors and cataract remain the leading causes of eye-related complaints. Early detection and timely management through regular eye screening programs can significantly reduce the burden of avoidable visual impairment.

Keywords: Ocular morbidity, Ophthalmology OPD, Refractive errors, Cataract, Visual impairment, Eye diseases, Hospital-based study.

INTRODUCTION

Ocular morbidities represent a wide spectrum of eye disorders ranging from simple refractive errors to sight-threatening conditions such as glaucoma, cataract, and retinal diseases. These conditions are among the leading causes of visual impairment and blindness worldwide, significantly affecting quality of life, productivity, and socio-economic development. According to global estimates, at least 2.2 billion people have vision impairment or blindness, and nearly half of these cases are due to preventable or treatable causes such as cataract and refractive errors [1].

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The burden of ocular diseases is particularly high in developing countries due to limited access to eye care services, delayed diagnosis, and inadequate awareness among the population [2].

In India, ocular morbidities constitute a major public health concern due to the large population size, diverse socio-economic conditions, and uneven distribution of healthcare facilities. Studies have shown that refractive errors, cataract, conjunctival diseases, and ocular infections are the most commonly reported conditions in ophthalmology outpatient departments [3]. Cataract remains the leading cause of avoidable blindness in India, accounting for nearly 50–60% of blindness cases, despite the availability of effective surgical treatment [4]. Similarly, uncorrected refractive errors are a major cause of visual impairment among school-going children and working-age adults, contributing significantly to productivity loss [5].

The pattern of ocular morbidities in ophthalmology OPD varies according to age, gender, occupation, environmental exposure, and associated systemic diseases such as diabetes mellitus and hypertension. Elderly individuals are more prone to cataract, glaucoma, and age-related macular degeneration, whereas younger populations often present with refractive errors, allergic conjunctivitis, and ocular trauma [6]. Occupational exposure to dust, chemicals, and prolonged screen time has also been associated with increased incidence of dry eye disease and digital eye strain, especially in urban populations [7].

In recent years, the epidemiological transition and changing lifestyle patterns have further influenced the pattern of eye diseases. The increasing prevalence of diabetes mellitus has led to a rise in diabetic retinopathy cases, which is now emerging as a major cause of preventable blindness in adults [8]. Similarly, hypertension-related ocular changes and age-related degenerative disorders are becoming more common with increasing life expectancy [9]. These trends highlight the importance of regular ophthalmic screening and early detection of ocular morbidities in both rural and urban populations.

Hospital-based studies on ocular morbidity patterns provide valuable insights into the disease burden encountered in clinical settings and help in identifying priority areas for eye care services. Such studies also assist in planning targeted intervention programs, strengthening ophthalmic infrastructure, and improving community awareness regarding eye health (10). Understanding the pattern of diseases presenting to ophthalmology OPD is essential for optimizing diagnostic and therapeutic strategies and for reducing the burden of avoidable visual impairment.

The aim of this study is to assess the pattern of ocular morbidities among patients attending the Ophthalmology OPD. The primary objective is to identify and categorize the various eye diseases commonly presenting in the OPD setting, such as refractive errors, cataract, conjunctival disorders, glaucoma, and other ocular conditions. The secondary objective is to determine the distribution of ocular morbidities according to age, gender, and associated systemic illnesses, and to highlight the most prevalent conditions requiring early diagnosis and management. This study also aims to provide useful data for planning effective eye care services and preventive strategies to reduce avoidable visual impairment.

MATERIALS AND METHODS

Study Design: This study is a hospital-based observational cross-sectional study.

Study Place: The study was conducted in the Department of Ophthalmology, Narayana Medical College and Hospital, Chinthareddypalem, Nellore, Andhra Pradesh, India..

Study Duration: 1 year.

Study Population: The study population included all patients attending the Ophthalmology OPD with various ocular complaints during the study period.

Sample Size: A total of 100 patients

Study variables:

- Age group
- Sex
- Diabetes Status
- Residence
- Spectacle Use

Inclusion Criteria:

- Patients of all age groups attending Ophthalmology OPD
- Patients presenting with ocular symptoms or diagnosed ocular diseases
- Patients willing to participate and give informed consent

Exclusion Criteria:

- Patients who are not willing to participate in the study
- Patients with incomplete clinical records
- Patients requiring emergency surgical intervention at the time of presentation
- Critically ill patients unable to undergo complete ophthalmic examination

Statistical Analysis

For statistical analysis data were entered into a Microsoft excel spreadsheet and then analyzed by SPSS (version 27.0; SPSS Inc., Chicago, IL, USA) and GraphPad Prism version 5. Data had been summarized as mean and standard deviation for numerical variables and count and percentages for categorical variables. Two-sample t-tests for a difference in mean involved independent samples or unpaired samples. Paired t-tests were a form of blocking and had greater power than unpaired tests. A chi-squared test ($\chi 2$ test) was any statistical hypothesis test wherein the sampling distribution of the test statistic is a chi-squared distribution when the null hypothesis is true. Without other qualification, 'chi-squared test' often is used as short for Pearson's chi-squared test. Unpaired proportions were compared by Chi-square test or Fischer's exact test, as appropriate.

Explicit expressions that can be used to carry out various t-tests are given below. In each case, the formula for a test statistic that either exactly follows or closely approximates a t-distribution under the null hypothesis is given. Also, the appropriate degrees of freedom are given in each case. Each of these statistics can be used to carry out either a one-tailed test or a two-tailed test.

Once a t value is determined, a p-value can be found using a table of values from Student's t-distribution .If the calculated p-value is below the threshold chosen for statistical significance (usually the 0.10,

the 0.05, or 0.01 level), then the null hypothesis is rejected in favour of the alternative hypothesis.

P-value ≤ 0.05 was considered for statistically significant**.**

RESULT

Table 1: Age Group vs Refractive Error (n = 100)

Age group	Refractive Error Present	Refractive Error Absent	Total	P value
<40 years	28 (56%)	22 (44%)	50 (100%)	< 0.001
≥40 years	12 (24%)	38 (76%)	50 (100%)	
Total	40 (40%)	60 (60%)	100 (100%)	

Table 2: Sex Distribution vs Cataract (n = 100)

Sex	Cataract Present	Cataract Absent	Total	P value
Male	22 (44%)	28 (56%)	50 (100%)	0.03
Female	30 (60%)	20 (40%)	50 (100%)	
Total	52 (52%)	48 (48%)	100 (100%)	

Table 3: Diabetes Status vs Diabetic Retinopathy (n = 100)

Diabetes Status	DR Present	DR Absent	Total	P value
Diabetic	18 (36%)	32 (64%)	50 (100%)	< 0.0001
Non-diabetic	2 (4%)	48 (96%)	50 (100%)	
Total	20 (20%)	80 (80%)	100 (100%)	

Table 4: Residence vs Conjunctivitis (n = 100)

Residence	Conjunctivitis Present	Conjunctivitis Absent	Total	P value
Rural	26 (52%)	24 (48%)	50 (100%)	0.02
Urban	14 (28%)	36 (72%)	50 (100%)	
Total	**40 (40%)**	**60 (60%)**	**100 (100%)**	

Table 5: Spectacle Use vs Severity of Refractive Error (n = 100)

Spectacle Use	Moderate/Severe RE	Mild/No RE	Total	P value
Using spectacles	30 (60%)	20 (40%)	50 (100%)	< 0.0001
Not using spectacles	10 (20%)	40 (80%)	50 (100%)	
Total	**40 (40%)**	**60 (60%)**	**100 (100%)**	

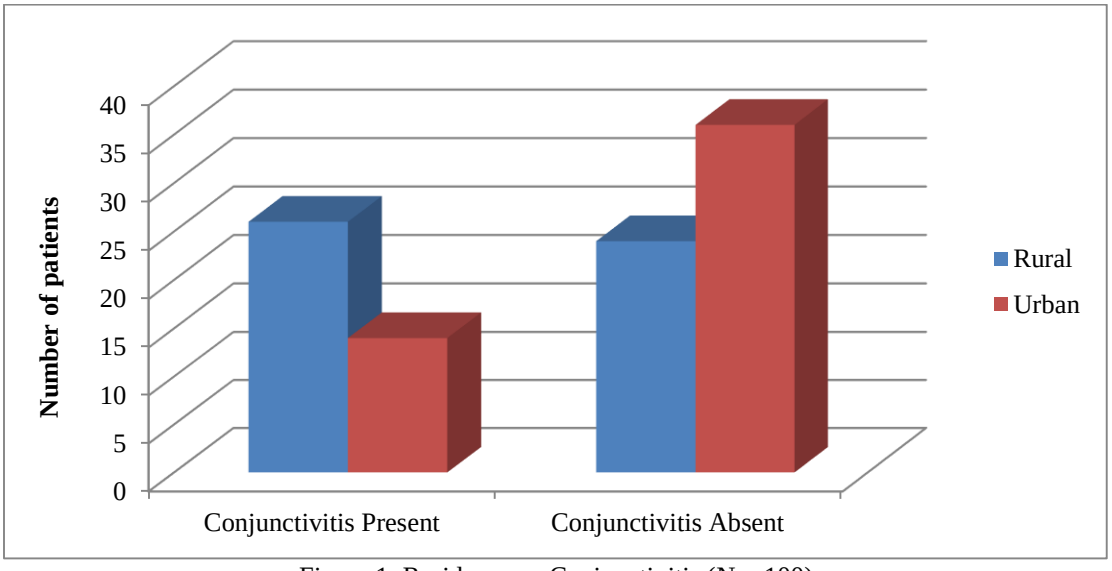

Figure 1: Residence vs Conjunctivitis (N = 100)

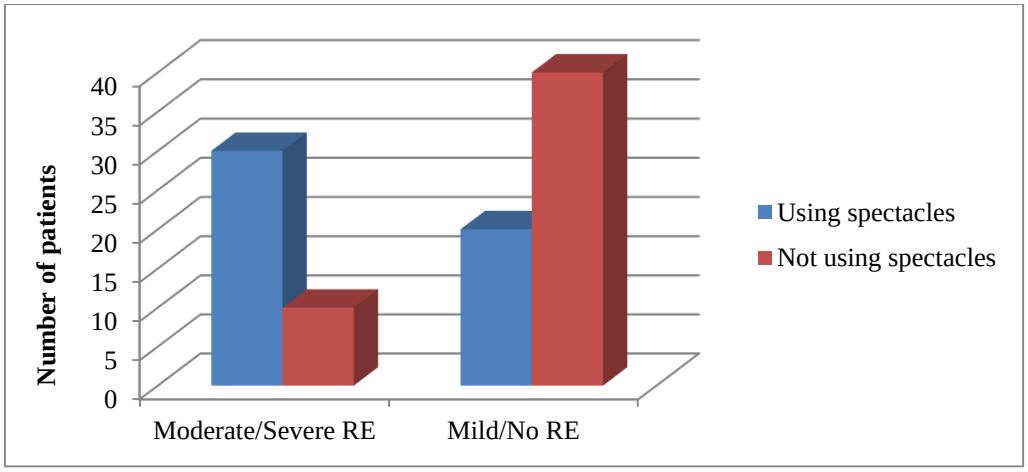

Figure 2: Spectacle Use vs Severity of Refractive Error (N = 100)

In the present study, a total of 100 patients were evaluated, out of which 50 patients were aged <40 years and 50 patients were aged ≥40 years. Refractive error was found to be significantly more common in the younger age group. Among patients aged <40 years, 28 patients (56%) had refractive error, while 22 patients (44%) did not have refractive error. In contrast, among patients aged ≥40 years, only 12 patients (24%) had refractive error, whereas 38 patients (76%) were free from refractive error. The difference in distribution of refractive error between the two age groups was found to be statistically highly significant with a p value of <0.001.

In the present study, a total of 100 patients were included, comprising 50 males and 50 females. Among male patients, 22 patients, (44%) had cataract while 28 patients, (56%) did not have cataract. Among female patients, 30 patients, (60%) had cataract and 20 patients, (40%) were free from cataract. The difference in the occurrence of cataract between males and females was found to be statistically significant with a p value of 0.03 .

In the present study, a total of 100 patients were evaluated, out of which 50 were diabetic and 50 were non-diabetic. Among diabetic patients, 18 patients (36%) had DR while 32 patients (64%) did not show any evidence of DR. In contrast, among non-diabetic patients, only 2 patients (4%) had DR whereas 48 patients (96%) were free from DR changes. The association between diabetes status and presence of diabetic retinopathy was found to be highly statistically significant with a p value of <0.0001 .

In the present study, a total of 100 patients were included, with 50 patients from rural areas and 50 from urban areas. Among rural patients, 26 patients, (52%) had conjunctivitis while 24 patients, (48%) did not have conjunctivitis. In contrast, among urban patients, 14 patients, (28%) had conjunctivitis and 36 patients, (72%) were free from conjunctivitis. The difference in the occurrence of conjunctivitis between rural and urban populations was found to be statistically significant with a p value of 0.02 .

In the present study, a total of 100 patients were included, out of which 50 patients were using spectacles and 50 patients were not using spectacles. Among patients using spectacles, 30 patients (60%) had moderate to severe refractive error, while 20 patients (40%) had mild or no refractive error. In contrast, among patients not using spectacles, 10 patients (20%) had moderate to severe refractive error, whereas 40 patients (80%) had mild or no refractive error. The association between spectacle use and severity of refractive error was found to be highly statistically significant with a p value of <0.0001 .

DISCUSSION

In the present study, refractive errors were significantly more common in patients aged <40 years compared to those aged ≥40 years ($p < 0.001$). Similar findings were reported by Schneider J et al [11] , who observed that uncorrected refractive errors predominantly affect younger populations and remain a leading cause of visual impairment globally . These findings suggest that refractive morbidity is higher in younger age groups mainly due to unmet corrective needs and lack of regular eye screening services.

In the present study, cataract was significantly more common among females compared to males ($p = 0.03$). A similar observation was made by Zetterberg M et al [12] who reported a higher incidence of cataract among females, which may be attributed to hormonal factors and longer life expectancy . Murthy GV et al. [13] also reported that cataract remains the leading cause of avoidable blindness in India, with a higher burden among females , supporting the findings of the present study.

In the present study, diabetic retinopathy showed a highly significant association with diabetes mellitus ($p < 0.0001$). This is consistent with Ghamdi AH et al [14] who reported that diabetes is the strongest risk factor for diabetic retinopathy, with disease

duration and glycemic control playing an important role in its progression . Teo ZL et al.[15] also highlighted that diabetic retinopathy is an increasingly important cause of preventable blindness worldwide , which correlates with the present study findings.

In the present study, conjunctivitis was significantly more common in rural patients compared to urban patients ($p = 0.02$). This finding is supported by Hoffman J, et al [16] who reported a higher prevalence of ocular surface infections in rural populations due to poor hygiene, environmental exposure, and limited access to eye care services. Similarly, Chen R et al.[17] reported that dust exposure and environmental irritants significantly contribute to conjunctival diseases .

In the present study, spectacle use was significantly associated with moderate to severe refractive error ($p < 0.0001$). This finding is in agreement with Hughes AR et al., [18] who reported that a large proportion of spectacle users still have uncorrected or under-corrected refractive errors due to inadequate follow-up and refractive services . Zhu M et al. [19] also emphasized that inadequate spectacle coverage remains a major contributor to visual impairment in developing countries, supporting the findings of the present study.

CONCLUSION

The present study highlights that ocular morbidities are highly prevalent among patients attending the Ophthalmology OPD, with refractive errors being more common in younger individuals and cataract being more frequent among females. A significant association was observed between diabetes mellitus and diabetic retinopathy, indicating the importance of regular screening in diabetic patients. Conjunctivitis was found to be more common in rural populations, reflecting the influence of environmental and hygiene-related factors, while spectacle use was significantly associated with moderate to severe refractive errors.

Overall, the study emphasizes that most ocular morbidities are preventable or treatable if detected early. Regular ophthalmic examination, timely diagnosis, appropriate refractive correction, and effective management of systemic diseases like diabetes can significantly reduce the burden of visual impairment. Strengthening awareness, improving access to eye care services, and promoting routine eye screening programs are essential measures to reduce avoidable blindness and improve quality of life in the population.

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