

Assessment of quality of life in patients with epiphora: a cross-sectional study using a structured clinical performa

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ABSTRACT

Aims: This study aims to evaluate the impact of epiphora (watery eyes) on various daily life activities and to assess the overall quality of life in adult patients suffering from epiphora.

Methods: A cross-sectional study analysed the quality of life of 298 patients who visited the ophthalmic department of a tertiary-level hospital in North India. Patients presented with complaints of epiphora at the Eye OPD of Jawaharlal Nehru Medical College in Aligarh between January 2025 and May 2025. A self-designed structured performa was used to collect demographic details (age, gender), patient's history, and other clinical features of epiphora (continuous or occasional tearing). We used the Chi-square test for this analysis to check if there's a significant association between the variables being studied. The results show how they relate to each other. The analysis was performed using SPSS version 26.0 and Python.

Results: This study reveals that females are more prone to epiphora than males. Out of 298 patients, there were 206 (69.10%) women, while 92 (30.9%) were men. The Chi-square goodness-of-fit tests revealed statistically significant differences between the observed and expected distributions for all variables in the study. For onset, the result ($\chi^2=4.35$, $p=0.037$) shows that the distribution between acute and chronic cases differs from what was expected. The side involved showed a highly significant difference ($\chi^2=290.54$, $p<0.0001$), indicating unequal distribution between unilateral and bilateral cases. Wiping times also differed significantly ($\chi^2=77.07$, $p<0.0001$), as did the diagnosis categories ($\chi^2=126.55$, $p<0.0001$). These results confirm that the variations observed are statistically significant and not due to random chance. The majority of patients reported frequent eye wiping (5 to 10 times) (39.59%), blurred vision (65.4%), epiphora, and symptoms variations in the evening (46.66%), morning (37.24%), and during specific activities (49.32%). Difficulty in activities such as reading (9.39%), driving (22.48%), and using digital devices (9.73%) and other activities (58.72%) are commonly observed by this condition.

Conclusion: This study suggested that in many individuals, epiphora affects nearly every part of their daily activities. Constant wiping creates difficulties in performing various tasks, such as driving and, for females, completing household chores. It also leads to challenging social interactions, feelings of embarrassment, self-consciousness, and frustration.

Keywords: Blur vision, conjunctivitis, dry eye syndrome, epiphora, ocular surgery, tearing

INTRODUCTION

The eye, as a delicate and finely tuned organ, maintains its function and integrity through a precise balance of tear production and drainage. Disruption of this equilibrium often brings excessive tears, a medical condition called epiphora or watering of eye.¹ It is one of the most common complaints among patients in ophthalmology and oculoplastic clinics. During the process of tearing, the lacrimal gland produces

tears, which are then spread over the ocular surface to maintain lubrication, protection, and support clear vision.² Periodic blinking helps in an even distribution of a thin layer of tear (tear film) across the surface of the eye, and some of the tears evaporate from the eye's surface, while the remaining tears drain through the nasolacrimal duct.³ True epiphora refers to excessive tearing due to impaired tear drainage,

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while pseudoepiphora is excessive tearing due to increased tear production (hyperlacrimation). It can be caused by reflex hypersecretion from ocular surface disease.⁴ It is due to various factors, including environmental irritants, allergies, infections, or structural problems with the tear drainage pathways.⁵ Exposure to smoke, bright light or chemical fumes can trigger the eyes to produce more tears as a protective mechanism.⁶ Moreover, Allergic reactions to pollen, dust, or pet dander can cause severe inflammation and increased tear production. Infections such as conjunctivitis (pink eye) and keratitis can lead to excessive tearing along with other symptoms like redness and pain.^{7,8} Similarly, dry eye syndrome can cause reflex tearing as the eyes try to compensate for the lack of lubrication. A retrospective studies of 180 patients at Kim's Eye Hospital, in Seoul of South Korea, identified that, In the 320 eyes of 180 patients, the most common etiology of epiphora was reflex tearing due to dry eye syndrome, which occurred in 167 eyes (52.19%). The other etiologies of epiphora included anatomical abnormality (68 eyes, 21.25%), multifactorial (60 eyes, 18.75%), functional epiphora (14 eyes, 4.38%), ocular surface disease (seven eyes, 2.19%), and eyelid abnormality (four eyes, 1.25%).⁹ Furthermore, several other studies have discussed the causes and treatment outcomes of epiphora, and some have specifically reported its causes. In another study by Woog¹⁰ reported that the typical annual rate of symptomatic acquired lacrimal outflow obstruction is 30.47 cases for every 100,000 individuals, and this rate is observed to increase as age advances. For some individual, epiphora may be merely a minor annoyance, while for others, it can have a considerable impact on patients' vision-related quality of life (QoL). This has been evident in outdoor activities, prolonged focus such as driving, using a computer, and other digital devices, and tasks that require looking down, like reading or going downstairs and cooking, may become frustrating and thus increase tearing. The physical discomfort and functional limitations associated with epiphora, along with the psychological distress of dealing with a visible symptom, can lead to increased stress levels and, in some cases, contribute to the development or worsening of depressive symptoms.^{13,14} For example, a study by Guo et al.¹⁵ investigated the prevalence and risk factors for depression and anxiety in 344 patients with nasolacrimal duct obstruction (NLDO). They identified high prevalence of depression and anxiety disorders among NLDO patients along with hypertension and dry eye disease (DED) as significant risk factors.¹⁶ The results indicated that the tendency for anxiety and depression was closely associated with DED and sleep disorders.^{17,18}

This study addresses underestimated symptoms of epiphora which is often neglected in many individuals. Unlike headaches, eyestrain, or other asthenopic symptoms, people are often unaware of epiphora, even though it can cause severe issues such as acquired NDLO in advanced stages. Many studies have focused solely on the etiology, management, and treatment of epiphora rather than on existing experiences. This study provides an overview of the impact of epiphora on patient's QoL and its overlooked effects on daily activities. Unlike other studies that utilize vision-related QoL questionnaires, this study is designed around a self-made performa, which has several advantages, including a direct focus on the individual's epiphora issues. It captures missed questions unlike typical questionnaires, it is more flexible, and easily adaptable for different patients. It improves relevancy by allowing for qualitative inputs and enables the collection of both qualitative and quantitative data. This study aims to

evaluate the impact of epiphora on various daily life activities and to assess the overall quality of life in adult patients.

METHODS

This study was approved by the Jawaharlal Nehru Medical College Faculty of Medicine Aligarh Muslim University Ethics Committee (Date: 10.06.2025, Decision No: IECJNMC/1855, <https://jnmc.edu/institutional-ethics-committee/>). All procedures were carried out in accordance with the ethical rules and the principles of the Declaration of Helsinki. This study involved a cross-sectional analysis of 298 patients visiting the ophthalmic department of a tertiary-level hospital in North India. Patients presented with complaints of epiphora at the Eye OPD of Jawaharlal Nehru Medical College in Aligarh, India between January 2025 and May 2025. Informed consent was obtained from all participants before enrolment (Figure 1).

Patient Evaluation Performa for Epiphora		
1. Demographic Information		
Name: _____	Age/Sex: _____	
Occupation: _____	Address: _____	
Date of Examination: _____		
2. Past History		
History of eye trauma and surgery:	YES [☐]	NO [☐]
Diabetes:	YES [☐]	NO [☐]
Hypertension:	YES [☐]	NO [☐]
On Medication:	YES [☐]	NO [☐]
Any congenital anomalies:	YES [☐]	NO [☐]
3. Chief Complaint		
Duration (months): _____		
Onset of Epiphora: Acute / Chronic		
Side Involved: Unilateral / Bilateral		
Tearing: Continuous/Ocasionally		
4. Impact on daily life		
Number of wiping times: _____		
Blur vision: YES/NO		
Worse during: Morning/Evening /Specific activities		
Difficulty in: Driving [☐] Reading [☐] Mobile/Laptop [☐] Other activity [☐]		
Emotional effect: Embarrassment [☐] Frustration [☐] Social Withdrawal [☐]		
5. Consent: "I have been informed of the procedure in my language. I voluntarily consent to the epiphora examination study. The information provided is accurate, and I sign without duress. I'm willing to be enrolled in this study.		
Signature: _____		

Figure 1. This structured clinical performa is designed to systematically assess the quality of life (QoL), symptom severity, and daily functional impact in patients presenting with epiphora. It also records relevant demographic, medical, and emotional factors for comprehensive evaluation

Inclusion Criteria

The study included patients aged 20-70 years who had persistent epiphora for over one month and a history of exposure to dusty environments, particularly those residing near industrial areas or employed as factory workers and labours.

Exclusion Criteria

The exclusion criteria encompassed patients with other ocular diseases, a history of ocular surgery, congenital anomalies affecting the lacrimal system, or medications that influence tear secretion.

A self-designed patient evaluation performa was used to collect demographic details (age, gender, occupation, address) and to evaluate the impact of epiphora on patients' QoL and their daily life activities. Such self-designed performa have previously been utilized in gathering research data.^{19,20}

This performa was designed after reviewing the literature and having informal discussions with other ophthalmologists to ensure it addressed the most common and relevant problems experienced by many individuals. It served as the primary data collection tool and consists of five sections. The first section includes demographic data such as the patient's name, age/sex, occupation, and address. It aims to identify trends associated with socio-demographic influences and relationships. In the second section, the patient's history was gathered to exclude specific conditions from the exclusion criteria. Similarly, third Section contains information about the patient's chief complaints. In this section, the duration (months) is acute and chronic epiphora with unilateral and bilateral involvement. The tearing pattern of epiphora is classified into continuous and occasional tearing to correlate with the patient's QoL for better consideration. The fourth section evaluates the impact on the patient's daily life, including psychosocial aspects. Several wiping times refer to the frequency of wiping tears each day. Patients were interrogated about how epiphora affects their daily tasks. Also asked about the watering of the eye is more in the morning, evening, or while doing any specific task, such as while driving, reading, using digital devices, or studying. Physical and emotional distresses were also recorded for every individual, including feelings of awkwardness and hindrance. The last section consists of the patient's consent and their signature.

RESULTS

All Chi-square tests require that no more than 20% of expected cell counts are below 5 and that all expected counts exceed 1. For onset and side involved, both expected counts were around 150, so all were greater than 5 and the assumptions were met. In the wiping times analysis, all categories (" <5 ," "5-10," " >10 ") had expected counts above 5, so the assumption was also satisfied. For diagnosis, some rare categories had expected counts below 5, so they were combined into an "other" group to ensure all expected counts were at least 5 before performing the Chi-square test (Figure 2).

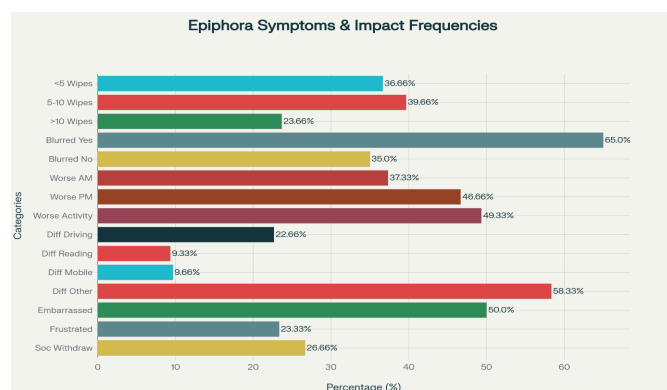


Figure 2. Bar chart illustrating the frequencies (percentages) of key symptoms and impacts reported by patients with epiphora

A p-value is the probability of observing data as extreme as the sample results if the null hypothesis is true, and we conclude by rejecting the null when the p-value is less than the chosen significance level (.05). If the p-value is low (typically

≤ 0.05), this suggests the results are statistically significant and unlikely to be due to random chance. We would reject the null hypothesis in favour of the alternative hypothesis. If the p-value is high (typically ≥ 0.05), this suggests the results are not statistically significant. The observed data could plausibly be due to chance, so you would fail to reject the null hypothesis. The p-value of this result is <0.05 . The standard deviation and average age of an individual are 16.70 and 40.80, respectively. This study's results reveal the crucial findings associated with the patient's daily life activities, which are affected by epiphora. 298 patients were enrolled in this study, who visit the Eye OPD of Jawaharlal Nehru Medical Hospital in North India. Also, indicating that females are more prone to epiphora than males. Out of 298 patients, there were 206 (69.10%) women, while 92 (30.9%) were men. Epiphora duration was evaluated in months and was classified into subgroups in (Figure 3). Out of the 298 patients who experienced epiphora for 1 to 25 months were 238 (79.7%) were individuals, 26 to 50 months were experienced by 42 (14%) individuals, and for 51 to 75 months were experienced by 8 patients (2.67%). For 76 to 100 months, 3 (1%) individuals, for 101 to 125 months, 5 (1.67%) individuals, for 126 to 150 months, 1 (0.33%) individual, and for 176 to 200 months were experienced by 2 (0.66%) individuals. Out of 298 patients, 167 (56%) individuals have chronic epiphora, while 131 (44%) individuals have acute epiphora. Based on side involvement, 60 (20.1%) patients have unilateral epiphora, while 238 (79.9%) patients have bilateral epiphora. Continuous tearing was encountered by 225 (75.55%) patients, while occasional tearing was experienced by 73 (24.49%) individuals as mentioned in (Table 1, Figure 4).

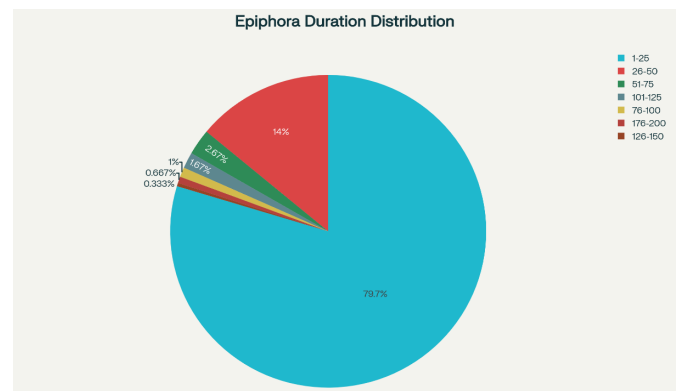


Figure 3. Duration of epiphora in months, representing 1 to 25 months, epiphora is more prevalent than the other. The Chi-square goodness-of-fit test shows a highly significant deviation from equal distribution across duration categories ($\chi^2=1076.39$, $p<0.0001$), confirming that the 1-25-month category is disproportionately large

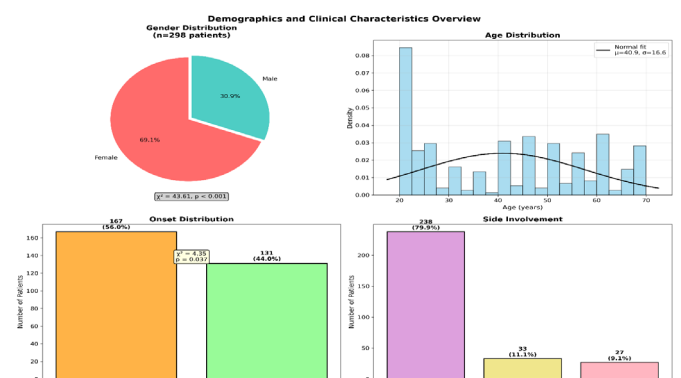


Figure 4. The onset of epiphora, acute is more than chronic. Laterality involved more cases of bilateral epiphora, while in the tearing pattern, continuous tearing is more than occasional tearing

Table 1. Demographic information of patients		
Age	20-70 years	
Average age	40.80	
Standard deviation of age	16.70	
Gender	Total	Percentage
Male	92	30.9%
Female	206	69.1%
Duration of epiphora (month)		
1 to 25	238	79.7%
26 to 50	42	14%
51 to 75	8	2.67%
76 to 100	3	1%
101 to 125	5	1.67%
126 to 150	1	0.33%
176 to 200	2	0.66%
Onset of epiphora		
Acute	131	44%
Chronic	167	56%
Laterality		
Bilateral	238	79.9%
Unilateral	60	20.1%
Tearing pattern		
Continuous	225	75.55%
Occasionally	73	24.49%

The Chi-square test for onset ($\chi^2=4.35$, $p=0.037$) shows a significant difference from an equal distribution, meaning that acute and chronic cases are not evenly represented. The test for side involved ($\chi^2=290.54$, $p=8.11 \times 10^{-64}$) reveals a highly significant difference, with bilateral involvement being much more common than unilateral. These results suggest that both onset and side involvement are important factors with uneven distributions in the study population.

The number of wiping times has this categorical description; patients who wipe less than 5 times per day number 109 (36.57%), those who wipe 5-10 times per day total 118 (39.59%), while patients who wipe more than 10 times per day count 71 (23.82%) (Figure 5). Blurred vision was reported by 195 out of 298 patients (65.4%). This symptom was more frequent among patients with chronic epiphora compared to those with acute symptoms. Epiphora is worse either in the morning among 111 patients (37.24%), in the evening among 139 patients (46.66%), or during specific tasks noted in 147 patients (49.32%). Many patients have difficulty driving, totaling 67 patients (22.48%). Reading difficulties were reported by 28 patients (9.39%), while 29 patients (9.73%) experienced trouble using mobile devices and laptops, and 174 patients (58.72%) faced challenges doing other activities. Many patients reported feelings of embarrassment (149 patients, 50%), frustration (70 patients, 23.48%), and social withdrawal (79 patients, 26.51%) in (Table 2, Figure 6).

The Chi-square test for wiping times ($\chi^2=312.15$, $p=1.66 \times 10^{-57}$) shows a strongly significant difference from equal frequencies, indicating that wiping times vary widely among participants and are not evenly distributed across categories.

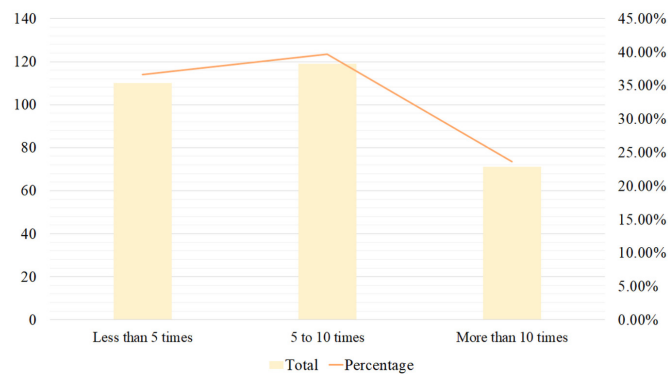


Figure 5. The number of wiping their tears per day by an individual. 5 to 10 wiping times are more prevalent

Table 2. Summary of patient-reported experiences and symptoms related to epiphora

Number of wiping times per day	Total	Percentage
Less than 5 times	109	36.57%
5 to 10 times	118	39.59%
More than 10 times	71	23.82%
Blurred vision	195	65.4%
Epiphora symptoms are worse during		
Morning	111	37.24%
Evening	139	46.66%
Specific activity	147	49.32%
Difficulty in doing tasks		
Driving	67	22.48%
Reading	28	9.39%
Mobile/laptop	29	9.73%
Other activities	174	58.72%
Effect of epiphora on the well-being of patients		
Embarrassment	149	50%
Frustration	70	23.48%
Social withdrawal	79	26.51%

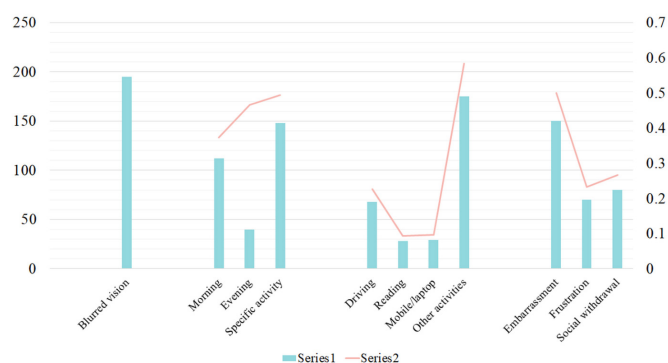


Figure 6. The bar graph (series 1) shows the frequency of symptoms and activity impairments, while the line graph (series 2) indicates the severity or impact level of each factor on daily life

Each variable shows a statistically significant deviation from an expected uniform distribution, indicating that the frequencies of categories differ strongly from equal proportions in the dataset. For example, "side involved" is dominated by 'bilateral' cases, and "onset" is more skewed towards chronic cases. Similarly, "wiping times" and "diagnosis" have uneven distributions across their categories (Table 3).

Table 3. Significance testing of study variables using Chi-square method

Variable	Chi- square statistic	p-value	Summary
Onset	4.35	0.037	The distribution of onset (acute vs chronic) significantly Differs from equal distribution
Side involved	290.54	8.11e-64	Highly significant difference in the distribution; bilateral involvement is far more common
Wiping times	312.15	1.66e-57	Strongly significant difference from equal frequencies; wiping times vary widely
Diagnosis	126.55	1.28e-25	Diagnosis categories show significant deviation from equal distribution

DISCUSSION

This study provides a comprehensive assessment of epiphora on QoL in a large sample of 298 patients, broad age range (20-70 years) and focus on the targeted population. Our findings demonstrate that epiphora significantly affect the QoL in daily routine activities include reading, driving, using digital devices and other aspects such as physical, social, and psychological well-being. Epiphora has been reported to cause blurred vision, scabbing around eyes, eyelid swelling, facial skin irritation, and laxity of the lower eyelids from constant wiping. There are very few studies that have extensively explored the impact of this eye disease on patients’ lives.^{21,22} These findings of this study suggest that load of watery eye includes psychological inferences, mental, and physical discomfort. Also, many individuals who are enrolled in this study acknowledged that epiphora affects some activities of their day-to-day life. A 55-year-old lady expressed that continuous watering from her eye affects her life. The findings of Bohman et al.,²³ suggest that patients with epiphora often complain about the watering of eye with itching and irritation. Outdoor activities were the most consistently emphasised area in our study, the similar result with the hospital-based survey of 342 Korean patients in which glare-related embarrassment and reflex wiping were the principal drivers of social withdrawal.²⁴ Additionally, neither bilaterality nor duration of symptoms predicted summary scores once nasolacrimal obstruction grade was entered into the multivariable model, suggesting that anatomical severity rather than laterality or chronicity is the determinant of patient-perceived disability. This finding aligns with the WEQOL validation study of Schulz et al.,²⁵ where irrigation pattern explained 28% of the variance in QoL, whereas symptom duration was non-contributory. The observation that one in four patients delayed surgical referral despite functionally significant epiphora underscores the “tolerability threshold” phenomenon described by Usmani and Selva.²⁶ Constant wiping can obstruct focus on specific tasks. Some patients feel embarrassed in public due to tearing, which diminishes their confidence and may lead to the avoidance of social situations.²⁷ Epiphora is not merely a minor issue; in severe cases, such as chronic epiphora, it can negatively influence both physical comfort and emotional well-being.

CONCLUSION

This study demonstrates that epiphora significantly compromise QoL by affecting functional vision, daily routine tasks, emotional well-being, and social participation. For students, epiphora may be distracting; it worsens whenever an individual focuses on a screen while reading or studying. The results of this study highlight the importance of early detection of nasolacrimal duct blockage, as chronic epiphora leads to severe watering, which can disrupt people’s lives. Our findings highlight that the burden of epiphora extends

beyond physical symptoms and should not be underestimated in clinical practice. Timely diagnosis and appropriate management can lead to substantial improvements in patient-reported outcomes. Although the investigation was conducted at a single centre and employed a locally developed data-collection proforma, these constraints highlight opportunities for future work rather than weaknesses. Multi-centre studies that deploy validated, standardized QoL instruments will deepen our understanding and guide nationwide strategies to mitigate epiphora’s burden.

ETHICAL DECLARATIONS

Ethics Committee Approval

The study was carried out with the permission of the Jawaharlal Nehru Medical College Faculty of Medicine Aligarh Muslim University Ethics Committee (Date: 10.06.2025, Decision No: IECJNMC/1855).

Informed Consent

All patients signed and free and informed consent form.

Referee Evaluation Process

Externally peer-reviewed.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Financial Disclosure

The authors declared that this study has received no financial support.

Author Contributions

All of the authors declare that they have all participated in the design, execution, and analysis of the paper, and that they have approved the final version.

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Data Availability Statement

Research data can be provided on request through corresponding author.

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