



KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING RED EYE AMONG PATIENTS VISITING A TERTIARY EYE CARE CENTRE: A CROSS-SECTIONAL STUDY

Ophthalmology

Dr. Manjot Kaur Junior resident, Government Medical College, Amritsar

Dr. Karamjit Singh Professor, Government Medical College, Amritsar

Dr. Rajesh Kumar* Associate Professor, Government Medical College, Amritsar*Corresponding Author

Dr. Saroj Bala Professor, Government Medical College, Amritsar,

ABSTRACT

Background: Red eye is a common ocular complaint ranging from benign conditions to sight-threatening diseases. Lack of awareness may lead to delayed diagnosis and inappropriate management. **Aims & Objectives:** To assess the knowledge, attitude, and practices (KAP) regarding red eye among the general population visiting a tertiary eye care centre. **Methods:** This observational study was conducted among 292 patients aged ≥ 18 years presenting with red eye at a tertiary care hospital. A pre-validated, self-designed questionnaire was used to assess sociodemographic profile and KAP. Data were analyzed using descriptive statistics and chi-square test, with $p < 0.05$ considered significant. **Results:** Majority of participants were aged 41–50 years (32.1%) and females (57.5%). While 53.4% were aware that all red eyes are not conjunctivitis, only 29.5% knew about serious complications and 9.2% were aware of potential vision loss. Most participants (59.5%) were unsure whether red eye requires medical attention. Self-medication was common, with 49.5% using over-the-counter eye drops. Although 70.5% were aware of protective eyewear, only 15.5% practiced its use. Significant associations were observed between sociodemographic factors and certain practices, but not with overall knowledge. **Conclusion:** There are significant gaps in knowledge, attitude, and practices regarding red eye, with a high prevalence of self-medication and poor risk perception. Targeted health education is essential to improve awareness and promote appropriate healthcare-seeking behavior.

KEYWORDS

Red Eye, Knowledge, Attitude, Practice, Self-medication, Ocular Health

INTRODUCTION

Red eye is one of the most common ophthalmic complaints encountered in clinical practice and accounts for a significant proportion of visits to primary care physicians, emergency departments, and ophthalmology outpatient departments. It is a nonspecific clinical sign that may result from a wide spectrum of ocular conditions ranging from benign, self-limiting disorders such as conjunctivitis to potentially sight-threatening conditions such as keratitis, uveitis, and acute glaucoma (1,2).

Among the various causes of red eye, conjunctivitis remains the most frequent etiology worldwide. It is characterized by inflammation of the conjunctiva and may be caused by infectious agents such as viruses and bacteria or by non-infectious factors including allergens and irritants. Viral conjunctivitis is the most common subtype, followed by bacterial and allergic conjunctivitis (3). Conjunctivitis contributes substantially to the global burden of ocular morbidity and is responsible for a large number of outpatient visits (3,4).

Epidemiological studies suggest that eye-related complaints constitute approximately 2–5% of all general practice consultations, with conjunctivitis accounting for nearly one-third of these cases (5). In developing countries such as India, seasonal outbreaks of conjunctivitis, particularly during monsoon periods, further increase the burden on tertiary eye care centers (6).

Despite its high prevalence, red eye is often poorly understood by the general population. Many individuals are unable to distinguish between minor and serious causes, resulting in delayed presentation, inappropriate self-medication, and use of potentially harmful traditional remedies (7). The widespread availability of over-the-counter medications, including topical steroids, further contributes to inappropriate practices and increases the risk of complications (8).

Knowledge, Attitude, and Practice (KAP) studies are widely used in public health to assess awareness, beliefs, and behaviors related to diseases. These studies help identify gaps in knowledge and misconceptions, thereby guiding targeted educational interventions (9). Previous studies have demonstrated that adequate knowledge is strongly associated with better health-seeking behavior and appropriate practices (10).

In the context of ocular diseases, inadequate awareness regarding red eye may lead to delayed diagnosis of potentially vision-threatening conditions and inappropriate treatment. Therefore, assessing the

knowledge, attitude, and practices related to red eye among patients attending tertiary care centers is essential for planning effective health education strategies and reducing preventable ocular morbidity.

AIMS AND OBJECTIVES

1. To assess the knowledge, attitude, and practices (KAP) regarding red eye among the general population.
2. To evaluate perceptions related to red eye and their association with sociodemographic factors.
3. To provide health education regarding transmission and prevention of red eye.

MATERIALS AND METHODS

Study Design and Setting

This was a hospital-based observational study conducted at the Regional Institute of Ophthalmology, Government Medical College Amritsar, in collaboration with the Department of Community Medicine.

Study Population and Sample Size

All patients aged ≥ 18 years presenting with red eye to the ophthalmology OPD during the 12-month study period were included. A total of 292 participants were enrolled using consecutive sampling.

Inclusion and Exclusion Criteria

Inclusion: Adults (≥ 18 years) with red eye willing to participate.

Exclusion: Patients < 18 years, history of ocular trauma, or unwilling to participate.

Study Tool and Data Collection

Data were collected using a self-designed, pre-validated questionnaire comprising four sections:

- Sociodemographic details
- Knowledge regarding red eye
- Attitude toward red eye
- Practices related to red eye

Each participant was interviewed for approximately 30–40 minutes. Awareness, health-seeking behavior, and treatment practices were assessed. Participants were also educated regarding appropriate management and avoidance of self-medication.

Clinical Examination

All patients underwent detailed ophthalmic evaluation, including visual acuity assessment, intraocular pressure measurement, slit-lamp examination, and posterior segment evaluation.

RESULTS

The study included 292 participants, with the majority belonging to the 41–50 years age group (92; 32.1%), followed by 18–30 years (67; 22.7%) and 51–60 years (60; 20.4%). Participants aged 31–40 years constituted 55 (18.7%), while only 18 (6.1%) were above 60 years. The mean age was 41.03 ± 8.34 years. Females predominated the study population, accounting for 168 (57.5%) participants, while males constituted 124 (42.5%). A majority of participants resided in rural areas (187; 64.1%), whereas 105 (35.9%) were from urban areas. (Table 1)

Regarding knowledge about red eye, 156 (53.4%) participants correctly identified that not all red eye cases are conjunctivitis, while 58 (19.8%) believed otherwise and 78 (26.8%) were unaware. Only 87 (29.5%) participants were aware of the serious effects of red eye, whereas a majority (174; 59.5%) did not know. Knowledge regarding potential vision loss due to red eye was poor, with only 27 (9.2%) responding affirmatively, while 189 (64.7%) denied and 76 (26.1%) were unaware. Additionally, only 41 (14.7%) participants reported using contact lenses. (Table 2)

Among participants who had knowledge about red eye ($n=156$), doctors were the most common source of information (37; 23.7%), followed closely by other sources such as media and relatives (36; 23.1%). Friends accounted for 31 (19.9%) cases, while nurses contributed to 28 (17.9%). Family members were the least common source of information (24; 15.4%). (Table 3)

Attitude towards red eye was generally inadequate, as only 49 (16.8%) participants considered it a serious condition requiring medical attention, while the majority (174; 59.5%) were uncertain. However, awareness regarding preventive measures was relatively better; 206 (70.5%) participants knew that protective eyewear can prevent red eye, though actual compliance was low. Similarly, 166 (56.8%) participants were aware that reducing screen time can help prevent red eye, indicating moderate awareness but potential gaps in behavioral implementation. (Table 4)

Practice patterns revealed inappropriate health-seeking behavior among participants. Nearly half (143; 49.5%) reported that they would use over-the-counter eye drops from a pharmacy if they developed red eye, while 86 (29.2%) preferred home-based treatment. Only 28 (9.5%) participants would seek immediate medical consultation. In the case of newborns with red eye, most participants relied on home remedies (118; 40.6%) or pharmacy drops (103; 35.2%), with only 23 (7.8%) opting for medical advice. Encouragingly, 193 (66.0%) participants correctly responded that eyes should be washed immediately with water following chemical exposure. After eye surgery, a majority (218; 74.6%) would consult a doctor. (Table 5)

Statistically significant associations were observed between certain sociodemographic factors and KAP variables. Gender showed a significant association with contact lens use ($p=0.01$). Education level was significantly associated with knowledge regarding contact lens usage and maintenance ($p<0.01$). Occupation was significantly associated with awareness of vision loss due to red eye ($p<0.01$). Age showed significant association with certain attitude and practice variables, including screen time behavior ($p=0.01$), response to red eye ($p=0.03$), and management following chemical exposure ($p=0.03$). These findings indicate that demographic factors influence knowledge and practices related to red eye. (Table 6)

DISCUSSION

In the present study, a total of 292 participants with red eye were evaluated to assess their knowledge, attitude, and practices (KAP) regarding this common ocular complaint.

Sociodemographic Characteristics

The majority of participants belonged to the 41–50-year age group (32.1%), followed by 18–30 years (22.7%), indicating that red eye predominantly affects the economically productive age group. Similar findings have been reported in previous studies, where middle-aged individuals constituted the majority of patients presenting with ocular complaints.^{11,12} This may be attributed to increased environmental exposure, occupational hazards, and prolonged screen use.

Females (57.5%) outnumbered males in the present study, reflecting better health-seeking behavior among women. Comparable female predominance has been reported in studies by Alreshidi et al. and Shalini et al.^{13,14} However, some rural studies have shown male predominance due to occupational exposure.¹²

A large proportion of participants were from rural areas (64.1%) and belonged to lower and middle socioeconomic strata, consistent with findings from previous Indian studies.^{12,15} Rural residence is often associated with delayed healthcare-seeking and increased reliance on home remedies.

Knowledge Regarding Red Eye

Although 53.4% of participants were aware that not all red eyes are conjunctivitis, overall knowledge regarding serious complications was poor. Only 29.5% were aware of serious effects, and just 9.2% knew that red eye can lead to vision loss.

This is concerning because red eye may be a manifestation of potentially sight-threatening conditions such as keratitis, uveitis, and acute glaucoma.^{16,17} Similar deficiencies in knowledge have been reported in earlier studies, where red eye was often perceived as a benign condition.^{12,18}

Among contact lens users, awareness was relatively better, likely due to prior exposure to eye care services. This finding is consistent with previous research demonstrating improved knowledge among individuals with prior ocular exposure.¹⁹

Source of Information

Doctors were identified as the most common source of information (23.7%), followed by media and informal sources. While healthcare professionals remain a reliable source, the influence of non-medical sources raises concerns regarding misinformation. Similar findings have been reported in other studies.^{13,18}

Attitude Towards Red Eye

Only 16.8% of participants considered red eye a serious condition requiring medical attention, while 59.5% were uncertain, reflecting poor risk perception. Comparable findings have been reported in previous KAP studies.^{12,14}

Although 70.5% of participants were aware that protective eyewear can prevent ocular injury, only 15.5% practiced its use, demonstrating a clear knowledge–practice gap. This discrepancy has been widely documented.^{13,20}

Practices Related to Red Eye

The present study revealed a high prevalence of self-medication, with 49.5% of participants using over-the-counter eye drops and 29.2% relying on home remedies. Similar findings have been reported in earlier studies highlighting irrational drug use.¹⁵

Encouragingly, 66% of participants adopted appropriate first-aid measures (eye washing) following chemical exposure. However, consultation for neonatal red eye was very low (7.8%), indicating a critical gap in awareness.

Post-surgical red eye was better managed, with 74.6% of participants opting to consult a doctor, suggesting improved awareness in this context.

Association of Knowledge with Sociodemographic Factors

No statistically significant association was found between age and knowledge-related variables ($P > 0.05$), indicating that misconceptions regarding red eye are prevalent across all age groups. Similar findings have been reported in previous studies.^{12,14}

Gender was not significantly associated with basic knowledge variables; however, females demonstrated significantly better knowledge regarding contact lens use and related practices. This may be attributed to greater usage and healthcare interaction, consistent with previous studies.¹⁹

Education level did not significantly influence basic knowledge regarding red eye; however, it showed a strong association with

contact lens–related knowledge and practices. This suggests that general education alone does not ensure adequate health literacy.²⁰

Occupation was not significantly associated with basic knowledge but showed a significant relationship with awareness of vision loss and contact lens practices. This may reflect differences in exposure and access to health information across occupational groups.^{13, 15}

CONCLUSION

The study reveals inadequate knowledge and poor perception regarding the seriousness of red eye among the general population, with a high prevalence of self-medication and inappropriate practices. A significant knowledge–practice gap exists despite moderate awareness of certain aspects. These findings highlight the need for targeted health education programs to promote early recognition, discourage self-medication, and encourage timely consultation to prevent avoidable ocular morbidity

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TABLES

TABLE 1: Sociodemographic Profile (n=292)

Variable	Category	Frequency	Percentage
Age (years)	18–30	67	22.7
	31–40	55	18.7
	41–50	92	32.1
	51–60	60	20.4
	>60	18	6.1
Gender	Male	124	42.5
	Female	168	57.5
Residence	Urban	105	35.9
	Rural	187	64.1

TABLE 2: Knowledge Regarding Red Eye (n=292)

Variable	Response	Frequency	Percentage
All red eye is not conjunctivitis	Yes	156	53.4
	No	58	19.8
	Don't know	78	26.8
Serious effects of red eye	Yes	87	29.5
	No	31	11.0
	Don't know	174	59.5
Red eye can cause vision loss	Yes	27	9.2
	No	189	64.7
	Don't know	76	26.1

TABLE 3: Source of Information (n=156)

Source	Frequency	Percentage
Doctor	37	23.7
Nurse	28	17.9
Friend	31	19.9
Family	24	15.4
Others	36	23.1

TABLE 4: Attitude Towards Red Eye (n=292)

Variable	Response	Frequency	Percentage
Red eye is serious condition	Yes	49	16.8
	No	69	23.7
	Don't know	174	59.5
Protective eyewear prevents red eye	Yes	206	70.5
	No	73	25.0
	Don't know	13	4.5
Reduce screen time prevents red eye	Yes	166	56.8
	No	126	43.2

TABLE 5: Practices Regarding Red Eye (n=292)

Situation	Response	Frequency	Percentage
Action if red eye occurs	Pharmacy drops	143	49.5
	Home treatment	86	29.2

Newborn red eye	No treatment	35	11.9
	Consult doctor	28	9.5
	Home remedies	118	40.6
	Pharmacy drops	103	35.2
Chemical exposure	Self-limiting	48	16.4
	Consult doctor	23	7.8
	Wash with water	193	66.0
	Doctor	54	18.5
Post-surgery red eye	Both	45	15.5
	Consult doctor	218	74.6
	Wait	74	25.4

TABLE 6: Significant Associations (Summary Table)

Variable	Factor	P-value	Significance
Knowledge vs Gender (Contact lens use)	Gender	0.01	Significant
Knowledge vs Education (Lens awareness)	Education	<0.01	Significant
Knowledge vs Occupation (Vision loss awareness)	Occupation	<0.01	Significant
Attitude vs Age (Screen practice)	Age	0.01	Significant
Practice vs Age (Red eye action)	Age	0.03	Significant
Practice vs Age (Chemical exposure)	Age	0.03	Significant

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