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Original Article

Reasons for Contact Lens Dropout Among Former Contact Lens Wearers: A Cross-Sectional Study

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ABSTRACT

Background: Contact lens discontinuation is common among wearers and may result from ocular discomfort, handling difficulties, visual disturbances, and inconvenience associated with lens care. Identifying these factors can help improve patient education and contact lens compliance.

Methods: A cross-sectional study was conducted among former contact lens wearers who had discontinued lens use. Data were collected using a structured questionnaire covering demographic characteristics, duration and pattern of lens use, symptoms experienced, lens-handling difficulties, and reasons for discontinuation. Descriptive statistics and appropriate inferential tests were used to analyse the collected data.

Results: The most frequently reported reasons for contact lens dropout included ocular discomfort, dryness, irritation, visual disturbances, difficulty in handling lenses, and inconvenience of lens-care practices. Certain work-related and lens-use factors were also associated with reported symptoms.

Conclusion: Contact lens dropout is influenced by ocular symptoms and practical difficulties. Comprehensive patient education, appropriate lens selection, proper hygiene, and regular follow-up may help reduce discontinuation and promote successful long-term contact lens wear.

Keywords: Contact lenses; Contact lens dropout; Lens discontinuation; Ocular discomfort; Dry eye; Lens handling; Contact lens wear.

INTRODUCTION

Contact lenses are widely used for the correction of refractive errors and as an alternative to spectacles for cosmetic, occupational, and lifestyle-related reasons. Advances in contact lens materials, surface treatments, oxygen permeability, and lens designs have improved comfort and visual performance for many users. Despite these developments, a proportion of contact lens users discontinue lens wear after an initial period of use. Contact lens dropout remains an important clinical concern because discontinuation may reflect unresolved ocular symptoms, inappropriate lens selection, inadequate compliance, or difficulties associated with lens handling and maintenance [1]. Contact lens dropout is generally described as the discontinuation of contact lens wear after a person has initiated use. The frequency of dropout varies among populations and depends on factors such as age, duration of previous lens wear, lens type, wearing schedule, occupational requirements, ocular surface status, and individual expectations. Previous studies have reported that discomfort is one of the major reasons for discontinuation among established contact lens users, whereas vision-related problems may be relatively more important among newer users [2,3].

Ocular discomfort is a multifactorial problem in contact lens wearers. Symptoms may include dryness, foreign-body sensation, burning, itching, redness, fluctuating vision, glare, and general visual discomfort. These symptoms may arise from alterations in tear-film stability, interaction between the lens and ocular surface, lens dehydration, deposits, environmental conditions, or prolonged wearing duration. Dry eye symptoms have also been associated with contact lens discontinuation, although objective clinical signs of dry eye do not always demonstrate the same relationship with dropout[2]. The ocular surface and tear film play an important role in maintaining comfortable contact lens wear. Contact lenses may influence tear-film distribution and evaporation and may alter the interaction between the eyelid, lens surface, and cornea during blinking. Meibomian gland dysfunction and other ocular-surface abnormalities may further contribute to discomfort and reduced tolerance. Therefore, assessment of both subjective symptoms and relevant contact lens practices is important when evaluating individuals who discontinue lens use [2,4].

The type of contact lens and duration of daily wear may also influence tolerance. Soft contact lenses are widely used because of their flexibility and ease of adaptation; however, prolonged daily wear may increase exposure to environmental and physiological factors that contribute to ocular discomfort. Extended periods of lens wear without adequate breaks may be particularly relevant among individuals with occupational or lifestyle demands requiring prolonged visual activity [4]. Occupational visual requirements may also influence contact lens comfort. In particular, individuals who spend prolonged periods using computers or other digital devices may experience symptoms associated with reduced blink frequency and increased visual demand. Sustained digital-device use may contribute to tear-film instability and ocular discomfort, which could become more noticeable during contact lens wear. However, the relationship between occupational screen exposure and contact lens discontinuation is likely to be influenced by several additional factors and should not be interpreted as a direct causal relationship. Appropriate lens handling and hygiene are also essential for successful contact lens wear. Incorrect handling, inadequate cleaning, poor storage practices, failure to follow replacement schedules, and inappropriate use of lenses may increase the risk of ocular irritation and infection. Contaminated lenses and storage cases have been implicated in contact lens-related inflammatory and infectious complications, emphasizing the importance of appropriate patient education and compliance with lens-care recommendations [5,6]. Patient education is therefore an important component of contact lens management. Patients should receive appropriate instructions regarding lens insertion and removal, cleaning, storage, replacement, wearing duration, avoidance of inappropriate overnight wear, and recognition of warning symptoms. Regular follow-up provides an opportunity to identify emerging ocular-surface problems and modify lens-related practices before symptoms become severe enough to result in discontinuation. Assessment of contact lens-related symptoms can also provide useful information regarding patient experience. The Contact Lens Dry Eye Questionnaire-8 (CLDEQ-8) is a validated patient-reported questionnaire designed to assess symptoms associated with contact lens-related dryness and discomfort. Incorporating symptom assessment into studies of contact lens dropout may help identify the subjective problems experienced by former users. Although several studies have examined contact lens discontinuation, the reasons for dropout may vary according to population characteristics, occupational demands, lens-use patterns, and patient practices.

Understanding these factors in former contact lens users can help clinicians identify potentially modifiable causes and provide individualized counselling. Therefore, the present study was undertaken to evaluate the reasons associated with contact lens dropout among former contact lens users, with particular attention to demographic characteristics, nature of work, lens type, duration of wear, lens-handling practices, and ocular symptoms.

METHODS

Study Design and Study Period: A cross-sectional observational study was conducted to evaluate the reasons associated with contact lens dropout among former contact lens users. The study was carried out over a three-month period from March to May 2025. The study focused on demographic characteristics, contact lens usage patterns, lens-handling practices, ocular symptoms, and factors associated with discontinuation of contact lens wear.

Study Population: The study included 80 participants who had previously used contact lenses but had subsequently discontinued their use. Participants were recruited based on the predefined eligibility criteria and completed a structured self-administered online questionnaire. The study population included participants from different age groups and occupational categories to assess whether demographic and occupational characteristics were associated with reported symptoms and contact lens dropout.

Eligibility Criteria: Participants aged 11 years and above who had previous experience with contact lens wear and had discontinued contact lens use were included in the study. Individuals who had never used contact lenses were excluded. Participants who did not provide complete responses to the questionnaire were also excluded from the analysis.

Data Collection Procedure: Data were collected using a structured, self-administered online questionnaire. Before completing the questionnaire, participants were informed about the purpose of the study and the voluntary nature of their participation. The questionnaire collected information regarding demographic characteristics, nature of work, previous contact lens use, type of lens used, daily wearing duration, lens-handling practices, ocular symptoms, and the reasons for discontinuation of contact lens wear.

Assessment of Contact Lens Usage: Information regarding the type of contact lens previously used was obtained from all participants. Lens types were categorized into soft lenses, hard lenses, and other types. Participants were also asked to report their usual daily wearing duration, which was categorized as approximately 4 hours, 8 hours, or more than 8 hours per day. Information regarding whether participants had received or followed recommended lens-handling instructions was also recorded.

Assessment of Ocular Symptoms: Participants were asked to report the ocular symptoms they experienced during their previous period of contact lens use. Symptoms assessed included red eye, glare sensitivity, blurred vision, and other ocular complaints. The reported symptoms were recorded and analysed to identify the commonly experienced problems among former contact lens users and their potential association with selected demographic and contact lens-related factors.

Contact Lens Dry Eye Assessment: The Contact Lens Dry Eye Questionnaire-8 (CLDEQ-8) was incorporated into the questionnaire to assess symptoms related to contact lens-associated dryness and discomfort. The questionnaire was used to obtain a structured assessment of subjective symptoms experienced during contact lens wear. The resulting symptom information was considered along with the participants' demographic characteristics and contact lens-use patterns.

Ethical Considerations: Participation in the study was voluntary. The purpose and nature of the study were explained to the participants before questionnaire completion, and informed consent was obtained electronically. Participant confidentiality was maintained throughout the study, and the information collected was used exclusively for research purposes. No personally identifiable information was reported in the study.

Statistical Analysis: The collected data were entered and analysed using Statistical Package for the Social Sciences (SPSS), version 27. Descriptive statistics were used to summarize the demographic characteristics, contact lens-use patterns, lens-handling practices, and ocular symptoms of the participants.

Categorical variables were expressed as frequencies and percentages. The chi-square test was used to assess associations between categorical variables, including the association between nature of work and glare sensitivity. An independent-samples t-test was used where appropriate to compare symptom scores between two groups. A p-value of less than 0.05 was considered statistically significant.

RESULTS

Demographic and clinical characteristics: A total of 80 former contact lens users were included in the study. Among the participants, 47 (58.75%) were males and 33 (41.25%) were females. The largest proportion of participants belonged to the 20–30-year age group, comprising 32 (40.00%) participants, followed by the 30–40-year age group with 19 (23.75%) participants, the 11–20-year age group with 18 (22.50%) participants, and the 40–50-year age group with 11 (13.75%) participants. Regarding the nature of work, 48 (60.00%) participants were computer-based workers, while 16 (20.00%) were students and 16 (20.00%) were engaged in other occupations (Table-1).

Parameter	Category	n	Percentage (%)
Gender	Male	47	58.7
	Female	33	41.2
Age group (years)	11–20	18	22.5
	20–30	32	40
	30–40	19	23.7
	40–50	11	13.7
Nature of work	Computer-based worker	48	60
	Student	16	20
	Other occupations	16	20

Table 1. Demographic Characteristics of Participants (n=80)

Contact Lens Usage Pattern: Soft contact lenses were the most commonly used type among the participants, accounting for 81.0% of previous lens use. Hard contact lenses accounted for 11.4%, while 7.6% of participants reported using other types of lenses. Regarding daily wearing duration, 65.8% of participants reported wearing contact lenses for more than 8 hours per day, whereas 25.3% reported approximately 8 hours of daily wear and 8.9% reported approximately 4 hours of daily wear.

With regard to lens-handling instructions, 70.9% reported receiving or following appropriate lens-handling instructions, while 29.1% reported that they had not received or followed such instructions (Table-2).

Ocular Symptoms Reported Among Former Contact Lens Users: Ocular symptoms were commonly reported among the participants during their previous period of contact lens use. Red eye was the most frequently reported symptom, occurring in 35 (43.75%) participants. Glare sensitivity was reported by 25 (31.25%) participants, while blurred vision was reported by 8 (10.00%) participants. Other symptoms were reported by 12 (15.00%) participants. The distribution of reported symptoms indicates that ocular discomfort and visual disturbances were prominent complaints among the former contact lens users (Table-3).

Parameter	Category	Percentage (%)
Lens type	Soft lens	81.0
	Hard lens	11.4
	Other	7.6
Daily wearing duration	>8 hours/day	65.8
	8 hours/day	25.3
	4 hours/day	8.9
Lens-handling instructions	Yes	70.9
	No	29.1

Table 2. Contact Lens Usage Pattern Among Participants (n=80)

Symptoms	n	Percentage (%)
Red eye	35	43.75
Glare sensitivity	25	31.25
Blurred vision	8	10.00
Other symptoms	12	15.00
Total	80	100.00

Table 3. Reported Ocular Symptoms Among Former Contact Lens Users (n=80)

Association Between Nature of Work and Glare Sensitivity: The association between nature of work and glare sensitivity was assessed using the chi-square test. A statistically significant association was observed between occupational category and glare sensitivity (p=0.006). This indicates that the distribution of glare sensitivity differed significantly across the occupational categories included in the study.

However, as this was a cross-sectional study, the observed association should not be interpreted as evidence of a causal relationship between occupational characteristics and glare sensitivity or contact lens dropout.

ASSOCIATION TESTED	TEST	P VALUE	RESULT
Nature of work vs Glare sensitivity	Chi-square	0.006	Significant
Lens handling vs Symptoms	Independent t-test	0.742	Non-significant

Table 4. Association of Occupational Characteristics and Lens-Handling Practices with Glare Sensitivity and Symptom Scores

Association Between Lens Handling and Symptoms:

The association between lens-handling practices and symptom scores was assessed using an independent-samples t-test. The analysis showed no statistically significant difference in symptom scores according to the reported lens-handling category (p=0.742). Thus, within the study population, the observed symptom scores did not differ significantly between participants according to their reported lens-handling practices. Overall, ocular symptoms were commonly reported among former contact lens users, with red eye being the most frequently reported symptom, followed by glare sensitivity and blurred vision. Soft contact lenses represented the predominant lens type among participants, and most participants reported prolonged daily lens wear.

A statistically significant association was observed between nature of work and glare sensitivity (p=0.006). In contrast, no statistically significant association was observed between lens-handling practices and symptom scores (p=0.742). The findings suggest that ocular discomfort and visual symptoms may represent important factors in the experience of former contact lens users. However, the observed associations should be interpreted cautiously because of the cross-sectional study design and the reliance on self-reported information (Table-4).

DISCUSSION

The present study evaluated the symptoms and factors associated with contact lens dropout among 80 former contact lens users. The findings indicate that ocular symptoms, particularly red eye and glare sensitivity, were commonly reported by participants. The study also demonstrated a statistically significant association between nature of work and glare sensitivity. Contact lens discontinuation is a multifactorial phenomenon. Although modern contact lenses have improved substantially in terms of material characteristics and oxygen transmission, some users continue to experience symptoms that reduce comfort and ultimately contribute to discontinuation. Previous studies have identified discomfort as an important reason for dropout among established contact lens users [2,3].

The findings of the present study are consistent with this general observation, as ocular symptoms constituted prominent complaints among the participants. Red eye was the most frequently reported symptom in the present study. Ocular redness during contact lens wear may result from several mechanisms, including ocular-surface irritation, inadequate tear-film stability, lens-related mechanical effects, environmental exposure, prolonged wearing duration, or inappropriate lens-care practices. Redness may also indicate an underlying ocular-surface condition that becomes more symptomatic during lens wear. Glare sensitivity was the second most commonly reported symptom. Glare can interfere with visual comfort and may be particularly troublesome during activities involving bright lights, night-time driving, prolonged screen use, or visually demanding occupational tasks. The significant association observed between nature of work and glare sensitivity ($p=0.006$) suggests that occupational requirements may influence the experience of visual symptoms among former contact lens users. A substantial proportion of participants in the present study were computer-based workers. Prolonged computer use is associated with sustained visual attention and may be accompanied by reduced spontaneous blinking. Reduced blink frequency can influence tear-film distribution and stability and may contribute to ocular discomfort, particularly in individuals wearing contact lenses. Nevertheless, the present study did not directly measure screen time, blink rate, tear-film parameters, or clinical ocular-surface findings.

Therefore, the observed association should not be interpreted as proof that computer-based work directly caused glare sensitivity or contact lens dropout. Soft contact lenses were the predominant type of lens used by the participants, accounting for 81.0% of previous lens use. The predominance of soft lenses is expected given their widespread use and generally favorable initial comfort. However, comfort during contact lens wear depends on several factors beyond lens material, including lens fit, replacement schedule, tear-film condition, wearing duration, environmental exposure, and individual susceptibility. The duration of daily lens wear was another relevant finding. Nearly two-thirds of participants reported wearing contact lenses for more than 8 hours per day. Prolonged daily wear may increase the duration of interaction between the lens and ocular surface and may contribute to symptoms in susceptible individuals. Longer wearing duration may also coincide with prolonged exposure to digital screens, air-conditioned environments, dust, wind, or other occupational and environmental factors. These findings highlight the importance of counselling patients regarding appropriate wearing schedules. Patients should be advised to follow the recommended wearing duration for their specific lens type and to remove lenses when significant discomfort or visual disturbance occurs. Regular replacement of lenses according to the recommended schedule is also important. Regarding lens-handling practices, 70.9% of participants reported receiving or following lens-handling instructions, while 29.1% did not. Although no statistically significant association was observed between lens-handling practices and symptom scores ($p=0.742$), appropriate lens hygiene remains clinically important. The absence of a statistically significant association in this study does not indicate that lens hygiene is unimportant. The study may have been limited by its sample size, self-reported data, and the broad categorization of lens-handling practices. Previous research has emphasized the role of contaminated lenses and storage cases in contact lens-related ocular complications [5,6,7]. Inappropriate handling can introduce microorganisms or deposits onto the lens surface and may increase the risk of inflammatory or infectious complications. Therefore, patient education concerning hand hygiene, cleaning, storage, replacement, and avoidance of inappropriate lens use remains an important part of contact lens management. The use of the CLDEQ-8 in the present study provided a structured approach for assessing contact lens-related dry-eye symptoms. Subjective symptoms are particularly important because patients may discontinue lens wear even when objective clinical findings are relatively mild.

Conversely, some patients may have ocular-surface abnormalities without reporting substantial discomfort. A combination of symptom assessment and clinical examination may therefore provide a more comprehensive evaluation of contact lens tolerance. The findings also suggest that contact lens dropout should not be viewed as being attributable to a single factor. Ocular symptoms, wearing duration, occupational requirements, lens characteristics, lens-care practices, and individual expectations may interact to influence continued lens use. Clinicians should therefore assess these factors systematically when a patient reports difficulty tolerating contact lenses. Early recognition of discomfort may allow appropriate intervention before complete discontinuation occurs. Depending on the underlying cause, interventions may include modification of lens material or design, adjustment of wearing duration, treatment of ocular-surface problems, improvement of lens-care practices, or modification of environmental and digital-device-related habits. The present findings should also be interpreted in the context of the study design. Since the study was cross-sectional, temporal relationships between occupational exposure, ocular symptoms, and discontinuation cannot be established. Furthermore, the participants were former contact lens users, meaning that the results specifically describe the experiences of individuals who had already discontinued lens use and may not represent current successful contact lens wearers.

CONCLUSION

The present study identified ocular discomfort and visual symptoms as commonly reported experiences among former contact lens users. Red eye was the most frequently reported symptom, followed by glare sensitivity and blurred vision. Soft contact lenses were the most commonly used lens type, and a substantial proportion of participants reported wearing lenses for more than 8 hours per day. A statistically significant association was observed between nature of work and glare sensitivity, suggesting that occupational visual demands may be relevant to the experience of contact lens-related visual symptoms. However, the cross-sectional design does not establish a causal relationship between occupation and contact lens dropout. No significant association was observed between lens-handling practices and symptom scores in the present analysis.

Nevertheless, appropriate lens hygiene and handling remain important components of safe contact lens use. Overall, contact lens dropout appears to be multifactorial, involving ocular symptoms, wearing patterns, occupational demands, and individual lens-use practices. Regular follow-up, appropriate lens selection, individualized wearing schedules, assessment of ocular-surface symptoms, and comprehensive patient education may help improve contact lens tolerance and support continued successful lens use.

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