



Contact lens procurement practices and wear habits among users in Oman

Maryam Darwish Al-Ghaithi ¹, Mithaa Mohammed Al-Esaei ¹, Maroa Khamis Al-Qasmi ¹, Kawthar Salim Al-Buraiki ¹ and Babu Noushad ^{1,2}

¹ Department of Optometry, College of Health Sciences, University of Buraimi, Al-Buraimi, Sultanate of Oman

² Department of Educational Development & Research, School of Health Professions Education, Maastricht University, Maastricht, Netherlands

ABSTRACT

Background: Contact lens wear is widely preferred for refractive error correction because of its cosmetic appeal and visual benefits. However, safe use requires adherence to proper prescription, wear, and maintenance practices. Non-compliance increases the risk of complications, particularly when contact lenses are procured from non-conventional sources. Despite contact lens wear being a major risk factor for microbial keratitis, data on contact lens procurement and wear habits in Oman remain limited.

Methods: This descriptive cross-sectional study employed non-probability sampling using a self-administered questionnaire conducted between January and April 2024. Participants were 18 years or older, resided in Oman, and reported contact lens use. The survey assessed contact lens procurement, wear patterns, care practices, and compliance with recommended lens care behaviors.

Results: A total of 526 individuals participated, with a mean (standard deviation) age of 23.7 (6.1) years (range: 18–53), representing all governorates of Oman. The majority were female (n = 484, 92.0%) and students (n = 336, 64.0%). Nearly half of participants (n = 259, 49.2%) used contact lenses for cosmetic purposes. While 68.4% (n = 360) wore soft contact lenses, 24.9% (n = 131) were unaware of the type of lenses they used. Approximately 60% (n = 316) of participants did not undergo an eye examination prior to obtaining their first pair of contact lenses; 22.2% (n = 117) purchased lenses online, and 16.2% (n = 85) from pharmacies or beauty salons without specialist consultation. Furthermore, 68.1% (n = 358) did not have regular eye examinations and 18.4% (n = 97) reported sharing contact lenses with friends.

Conclusions: Contact lens use is common among young people in Oman, predominantly for cosmetic purposes, and unsafe practices are widespread. Non-conventional procurement, lack of eye examinations, missed follow-up visits, and contact lens sharing were frequently reported. These findings underscore the need for stricter regulation of contact lens distribution and targeted public health education to promote safe contact lens wear. Future research should use nationally representative samples to further evaluate contact lens safety practices in Oman.

KEYWORDS

muscat and oman, contact lens, soft contact lens, refractive error, habit, risk factor

Correspondences: Babu Noushad, Department of Optometry, College of Health Sciences, University of Buraimi, Al Buraimi, Sultanate of Oman. Email: babu.n@uob.edu.om, b.pilaparambil@maastrichtuniversity.nl. ORCID iD: <https://orcid.org/0000-0003-1482-9939>.

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INTRODUCTION

Contact lenses are a popular choice for refractive correction due to their cosmetic advantage and improved vision quality, which makes many young people prefer them to traditional glasses [1]. Global estimates suggest that millions of individuals opt for contact lenses, with the highest uptake among young adults, particularly females [2, 3]. In the Middle East, including Oman, the trend of contact lens use mirrors global patterns, where cosmetic motivations frequently outweigh clinical needs [4–6].

Despite the advantages, use of contact lenses necessitates strict adherence to compliance measures, from obtaining a prescription to safe wear and maintenance [7]. Compliance with care and maintenance has long been observed to be a challenge [8]. Such non-compliance is one of the risk factors for contact lens-induced corneal infections [9]. Poor lens hygiene practices, non-recommended overnight wear, improper cleaning and storage, and even lens sharing have all been documented as contributors to adverse effects [10–12].

Typically, eye care practitioners inform lens users about the importance of proper lens care during their initial lens-fit sessions [13, 14]. Unfortunately, users may miss out on this information if they obtain their lenses from non-traditional sources such as online stores, pharmacies, or beauty salons [15, 16]. While non-conventional contact lens procurement habits have been reported in the Middle East region [5], there is a lack of information on Omani contact lens users. This is particularly relevant, given that contact lens wear is the second-highest risk factor for microbial keratitis in Oman [17].

METHODS

This descriptive cross-sectional survey was conducted among contact lens users in Oman. Ethical approval was obtained from the Research Committee of the College of Health Sciences, University of Buraimi, Sultanate of Oman. The study was conducted from 1 January 2024 to 30 April 2024.

A self-administered, ad hoc questionnaire was developed specifically for this study based on relevant published literature to collect information on demographic characteristics, contact lens usage patterns, procurement practices, follow-up with eye care professionals, and contact lens care behaviors (Table 1) [15, 18, 19]. Questionnaire items were adapted and contextualized to ensure relevance to local contact lens practices and comprehension by the target population. The questionnaire was neither formally validated nor tested for reliability prior to administration.

Eligibility criteria included individuals aged 18 years or older who reported current contact lens use. Only complete questionnaires were included in the final analysis. A non-probability convenience sampling strategy, incorporating a snowball sampling approach, was employed to facilitate rapid and cost-effective recruitment. The questionnaire was developed using Microsoft Forms and initially distributed via email to the university student population (N = 2372). Students who reported contact lens use were invited to participate and encouraged to share the survey link among their broader social networks through various online platforms. A total of 526 participants completed the survey. Demographic variables included age, sex, and occupational status.

Participation was voluntary and electronic informed consent was obtained prior to survey initiation. Responses were collected anonymously and no personally identifiable information was obtained. Data were stored securely and accessed only by the research team. Obtaining contact lenses from a hospital following an eye examination was considered indicative of having undergone a proper eye examination.

Table 1. Questionnaire on contact lens usage and care practices

Questions	Response options
Do you currently use contact lenses?	Yes/No
Why do you use contact lenses	To correct vision problem / Cosmetic use or fashion / Both
How long have you been using contact lenses?	≤ 1 year / > 1 year
Do you know your contact lens brand?	Yes / Do not know
What type of contact lenses do you use?	Soft contact lenses (thin and very flexible) / Rigid gas permeable or hard contact lenses (not flexible) or Scleral contact lenses (contact lenses that are hard and bigger in size) / I don't know
How regular are you in using your contact lenses?	I use them daily / I use them occasionally
How did you receive your first pair of contact lenses?	From a hospital after an eye examination / From an optical store after an eye exam / From an optical store without having an eye exam / From a pharmacy store / From a beauty salon / Received as a gift from a friend / Ordered online
Do you regularly visit an eye care professional to check your contact lenses and eyes?	Yes / No or maybe
Do you wash your hands thoroughly before wearing and removing your contact lenses?	Yes / No
How often do you sleep with your contact lenses?	Never / Rarely, sometimes, or very often
Do you share your contact lenses with anyone?	Never / Rarely, sometimes, or very often

Data were entered and analyzed using Microsoft Excel (Microsoft Corporation, Redmond, WA, USA). Continuous variables are presented as mean and standard deviation (SD) with range. Categorical variables are summarized as frequencies and percentages according to predefined response categories (Table 1). Duration of contact lens use was categorized as ≤ 1 year and > 1 year for descriptive purposes. No inferential statistical analyses were performed, as the study was exploratory and descriptive in nature, and no formal sample size calculation was undertaken.

RESULTS

A total of 526 individuals participated in the study. Mean (SD) age of respondents was 23.71 (6.14) years (range 18–53). Participants were recruited from all governorates of Oman. Most respondents were female ($n = 484$, 92.0%) and students ($n = 336$, 64.0%).

Regarding the purpose of contact lens use, nearly half of respondents ($n = 259$, 49.2%) reported using contact lenses for cosmetic or fashion purposes, while 33.3% ($n = 175$) used them to correct vision problems and 17.5% ($n = 92$) reported both purposes (Table 2). Half of respondents ($n = 263$, 50.0%) reported awareness of their contact lens brand, whereas the remaining half did not know what brand they were using. With respect to lens type, the majority reported using soft contact lenses ($n = 360$, 68.4%), yet approximately one-quarter ($n = 131$, 24.9%) were unaware of the type of lenses they used (Table 2). More than half of respondents ($n = 312$, 59.3%) reported wearing contact lenses for more than one year, while 40.7% ($n = 214$) had used them for one year or less. Most reported using contact lenses occasionally ($n = 435$, 82.7%), whereas only 17.3% ($n = 91$) reported daily use (Table 2).

Regarding procurement practices, 40.5% of respondents ($n = 213$) obtained their first pair of contact lenses from a hospital following an eye examination. However, a substantial proportion acquired lenses without a formal eye examination, including purchases from optical stores ($n = 87$, 16.5%), pharmacies ($n = 43$, 8.2%), beauty salons ($n = 42$, 8.0%), and online platforms ($n = 117$, 22.2%), or as a gift from a friend ($n = 24$, 4.6%). Overall, 60.0% ($n = 316$) did not receive a proper eye examination prior to obtaining their first pair of contact lenses (Table 2).

In terms of follow-up care, the majority of respondents ($n = 358$, 68.1%) reported not visiting an eye care professional regularly, while only 31.9% ($n = 168$) reported routine follow-up visits. With respect to lens hygiene practices, most ($n = 433$, 82.3%) reported washing their hands before handling contact lenses. Sleeping with contact lenses was uncommon, with 88.0% ($n = 463$) reporting that they never wore lenses while sleeping; however, 12.0% ($n = 63$) reported doing so rarely, sometimes, or very often (Table 2).

Finally, although most respondents reported not sharing their contact lenses, 18.4% ($n = 97$) admitted to sharing their lenses with friends at least occasionally, while 81.6% ($n = 429$) reported never sharing their contact lenses (Table 2).

Table 2. Contact lens wear and procurement habits among 526 individuals

Questions	Responses	n (%)
Purpose of wearing contact lens	To correct vision problem	175 (33.3)
	Cosmesis/fashion	259 (49.2)
	Both	92 (17.5)
Awareness of lens brand	Yes	263 (50.0)
	Don't know	263 (50.0)
Awareness of type of contact lens	Soft	360 (68.4)
	Rigid gas permeable/Hard/Scleral	35 (6.7)
	Don't know	131 (24.9)
Duration of contact lens use	≤ 1 year	214 (40.7)
	> 1 year	312 (59.3)
Schedule of contact lens use	Daily use	91 (17.3)
	Occasional use	435 (82.7)
Receipt of first pair of contact lenses	From a hospital after an eye examination	213 (40.5)
	Bought from optical store	87 (16.5)
	Bought from pharmacy store	43 (8.2)
	Bought from beauty salon	42 (8.0)
	Received as a gift from a friend	24 (4.6)
	Ordered online	117 (22.2)
Habit of regularly visiting an eye care professional	Yes	168 (31.9)
	No	358 (68.1)
Washing hands before handling lenses	Yes	433 (82.3)
	No/Maybe	93 (17.7)
Sleeping with contact lenses	Never	463 (88.0)
	Rarely, Sometimes, or Very often	63 (12.0)
Sharing contact lenses with friends	Never	429 (81.6)
	Rarely, Sometimes, or Very often	97 (18.4)

DISCUSSION

This survey reports on the contact lens wear and procurement habits of lens users from the Sultanate of Oman. Similarly, to trends observed in contact lens markets worldwide, female users dominated the studied sample [5, 19, 20]. This finding needs to be interpreted alongside the reported purpose of contact lens wear in this study, as nearly half of participants wore lenses primarily for fashion or cosmetic enhancement. This probably explains the higher proportion of occasional lens users in this survey. Occasional contact lens wear is often associated with reduced compliance in lens care, since lens care and maintenance do not become routine for such users. As a result, hygiene practices are more likely to be forgotten, thereby compromising both lens care and eye health [8]. Wu et al. emphasized that occasional contact lens wearers often store lenses in cases for extended periods without proper disinfection, creating conditions that favor microbial colonization [21]. Similarly, Devonshire et al. found that contaminated cases were associated with longer intervals since solution replacement [22], while Yung et al. showed that occasional wear was linked to higher rates of pathogenic contamination in lenses and their cases [23]. Taken together, these patterns highlight the potential vulnerability of occasional lens users to poor compliance and microbial contamination.

Only 40.5% of participating lens users received the lenses under the supervision of eye care practitioners. This signifies that the remaining would have missed vital lens care and maintenance instructions from a professional. It is important to observe that nearly one-fifth of participants acquired their first pair of lenses online and another two-fifths from optical stores, pharmacies, beauty salons, and even from their friends. Schweizer [24] and Fogel [25] highlight that where patients obtain their contact lenses has a direct impact on safety: they found that individuals who purchased lenses from stores or over the internet were less likely to follow lens use recommendations, and as a result were at greater risk of contact lens-induced complications. Such purchasing habits result in a lack of professional oversight and absence of follow-up care [24, 25]. A similar trend is observed in the Middle Eastern region, where contact lenses are often regarded primarily as cosmetic devices [4, 5, 18]. This attitude is concerning, as it may contribute to a higher incidence of lens-related complications [26, 27]. The literature further indicates that contact lens use is the second most significant risk factor for microbial keratitis in Oman [17]. Similar findings are reported from neighboring countries like Saudi Arabia [28] and Bahrain [29].

Optometrists are the primary contact lens practitioners in both developed and developing countries [30]. As primary eye care providers they are well positioned to allocate necessary chair time to appropriately dispense contact lenses, train users in lens care, and raise awareness of the potential sight-threatening complications associated with improper contact lens use [31]. This points to the need to regulate the availability of contact lenses through non-conventional routes (such as online stores, pharmacies, and beauty salons) and to ensure that lenses are dispensed only by licensed eye care practitioners [32, 33]. Another important contributor to raising global standards in contact lens practice is the International Association of Contact Lens Educators (IACLE), which provides valuable learning resources and focused training programs. Greater involvement of IACLE in the Middle East would benefit both current and future contact lens practitioners [34]. Such initiatives would enhance the competence of practicing optometrists in the region, including the Sultanate of Oman [35–37].

This study is one of the first to document contact lens wear and procurement habits in the Sultanate of Oman, providing valuable baseline data for the region. Its findings are highly relevant to public health, linking patterns of use and procurement sources to compliance behaviors and associated risks. These strengths make it a useful foundation for targeted education, policy regulation, and practitioner training. However, there are several limitations that should be considered when interpreting the findings. The use of convenience and snowball sampling may limit generalizability of the findings and introduce selection bias, and the low response rate may introduce nonresponse bias. The self-reported nature of the data may be subject to recall and reporting bias. The sample was predominantly female, which may limit applicability of the findings to male contact lens users. As the data were self-reported, responses may be influenced by social desirability bias, potentially leading to underreporting of unsafe lens practices. The study was purely descriptive and no inferential statistical analyses were performed, precluding the assessment of associations or causal relationships. Importantly, the questionnaire used in this study was developed specifically for this research and was not subjected to formal validity or reliability testing prior to its application, representing the primary limitation of the study. Future studies addressing these limitations are needed to strengthen the evidence in this area.

CONCLUSIONS

This study highlights suboptimal contact lens procurement and wear practices among contact lens users in Oman, particularly the use of non-conventional sources and limited engagement with eye care professionals. These findings underscore the importance of improving user awareness and education regarding safe contact lens practices. Strengthening regulatory oversight of contact lens dispensing, alongside targeted educational initiatives, may support safer contact lens use. Future studies addressing the limitations of this study and incorporating larger, nationally representative samples are warranted to provide more robust data and a clearer perspective on contact lens practices in Oman.

ETHICAL DECLARATIONS

Ethical approval: Ethical approval was obtained from the Research Committee of the College of Health Sciences, University of Buraimi, Sultanate of Oman. Participation was voluntary and electronic informed consent was obtained prior to survey initiation. Responses were collected anonymously and no personally identifiable information was obtained. Data were stored securely and accessed only by the research team.

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