

Comparison of Contact Lens Hygiene Compliance and Self-Management Behaviors between Medical and Non-Medical Students in Saudi Arabia

Sumera Nisar^{1*}, Shehana Salem Alqahtani², Fatimah Fayeze³, Hala Alqhtani⁴, Hiba Alrowibah⁵ and Anfal Aldulhum⁶

¹Associate Professor and Co-Chair Ophthalmology, College of Medicine, Princess Noura Bint Abdulrahman University Riyadh, Saudi Arabia

^{2,3,4,5,6}Students of College of Medicine, Princess Noura Bint Abdulrahman University Riyadh, Saudi Arabia

*Corresponding author

Sumera Nisar, Associate Professor and Co-Chair Ophthalmology, College of Medicine, Princess Noura Bint Abdulrahman University Riyadh, Saudi Arabia, E-mail: sumeranisar16@gmail.com

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Abstract

Background: Contact lenses are commonly worn by young population for many purposes such as vision correction, cosmetic causes and as a fashion trend. Although wearing contact lens is safe and does not require expertise but it can cause serious eye infections and corneal ulcers, sometimes resulting into loss of vision. The study is designed to compare and observe the contact lens hygiene compliance and self-management behavior with a focus on the contact lens wearing habits, cleaning and maintenance of contact lens by different methods and self-prescription between the medical and non-medical students of the Saudi Arabia.

Methods: Five hundred young contact lens wearers with an average age of 18-22 years were selected conveniently from the student population of Princess Nourah Bint Abdulrahman University, Riyadh. After taking informed consent from the participants, their level of contact lens hygiene compliance and self-management was assessed by using a peer-reviewed questionnaire.

Results: The mean (\pm SD) age of the participants was 20.87 ± 1.696 years. Out of 500 students 37.8% were medical and 62.2% were non-medical students. 56% students were wearing contact lens for the cosmetic reasons while 43.6% students were using it for the correction of their myopic refractive error. Most of the students were using daily wear soft contact lenses (96.6%) by self-prescription (51.4%) and majority of them were buying them from general retail store (83.6%) instead of some proper optician. The self-management behavior was statistically significant among non-medical students ($p=0.026$). There was no significant difference between the two groups regarding the compliance of the contact lens hygiene but the knowledge and awareness about the risks and complications was statistically high in the medical students ($p=0.028$). Most of the students in our study had rated them as an average wearer.

Conclusion: This study concludes that self-management with the contact lens use is very common among the non-medical students of Saudi Arabia. Although they are good in the lens hygiene compliance but their knowledge about the risks and complications of contact lens use and the lens care accessories was significantly low.

Keywords: Contact-Lens, Hygiene, Self-Management Behavior

Introduction

The contact lens is a very thin and curved lens designed to fit over the cornea and usually worn to correct defects in vision (Merriam-Webster) [1]. The contact lens is used every day by over 125 millions of people worldwide [2]. It is worn for many purposes such as vision correction, cosmetic causes and as a fashion trend especially among younger population [3]. According to a research done among health care workers in Pakistan that females use contact lenses more than males (70%). Out of these, 75% use contact lenses for correction of their refractive errors and 54% use for cosmetic reasons [4]. Contact lenses can be used to correct any type of refractive error, mainly Myopia and in many cases they provide clearer vision than

eye glasses. They rest directly on the cornea and are held in place by the eye's natural tears, which are always present. Not everyone is a good candidate for contact lenses due to the type of vision problem, shape of eyes, other eye conditions (e.g. dry eyes, allergies), or certain medical disorders. There are different types of contact lenses, the main types are hard (Rigid gas permeable), soft lens, extended wear and daily disposable. Soft contact lenses are made of soft, flexible plastics that allow oxygen to pass through to the cornea. Soft contact lenses may be easier to adjust to and are more comfortable than rigid gas permeable lenses. Rigid gas permeable contact lenses (RGPs) are more durable and resistant to deposit buildup, and generally give a clearer, crisper vision. These are less expensive, easier to handle and less likely to tear. However, they are not as comfortable initially as soft contacts and it may take a few weeks to get used to

wearing. Extended wear contact lenses are available for overnight or continuous wear ranging from one to six nights. Extended wear contact lenses are usually soft contact lenses. Daily disposable lenses are for one use only and a brand new pair of lenses is used each day [5,6]. Although wearing contact lens is safe and does not require expertise but it can cause serious eye infections and corneal ulcers. In some cases of contact lens related corneal ulcers patient can even become blind from that eye. To avoid these damages to the cornea of the eye, lens hygiene compliance according to the instructions of the prescriber is very important. Behaviors related to contact lens hygiene and cares have been linked to higher risk of contact lens complications [7]. Contact lens wearers who don't follow the contact lens care instructions estimated to be between 40%-91% of contact lens wearers [8]. Wearing contacts requires compliance with specific instructions concerning how many hours they can be worn and how they must be cleaned, handled, and stored. Contact lenses must be disinfected at regular intervals, requiring solutions and equipment. Non-compliance with practitioner recommended contact lens wear and care regimens remain a persistent clinical problem. Self-management and sharing of contact lens is another non-compliance behavior in young population. As use of contact lens is more common in younger population who are mostly busy in studying and different jobs, mishandling and self-management of contact lens use is also very common. Medical students are the future health practitioners and educators which supposed to be the best health model. Many studies have been performed on the behaviors of the medical students towards their daily life styles because of their hectic routine and extreme commitment with the patients. According to a recent research published in 2015, the medical students have better knowledge and contact lens care behavior than the non-medical student [3]. Another research was published in 2009 among health workers in Pakistan showed only 24% were knowing the contact lens cleaning protocol [9]. In our study, we also want to see the behavior of medical and non-medical students in the management and compliance of the contact lens. Therefore, the main aim of the study is see and compare the contact lens hygiene compliance and self-management behavior between medical and non-medical students of Saudi Arabia.

Methods

The present cross sectional comparative study was conducted among the college of medicine and other colleges of the Princess Nourah Bint Abdulrahman University Riyadh. The study population was the young university students of mean age \pm 20 years. The sample size of 500 contact lens (CL) wearing students, calculated by the convenient sampling technique. The students were surveyed for their contact lens use, hygiene compliance and self-management behavior by using a self-administered peer-reviewed questionnaire. A verbal consent was taken from all the participants. After the data collection SPSS was used to analyze the data and group comparisons were performed with the Chi-square test.

Results

A total of 500 students participated in this study, out of these 311 (62.2%) were non-medical and 189 (37.8%) were medical students. The mean (\pm SD) age of the participants was 20.87 \pm 1.696 years with minimum age of 18 years and maximum age of 28 years. Most of the students (280/500) i.e. 56% were wearing contact lenses for the cosmetic reasons as shown in Graph 1. Myopia was the commonest refractive error for which students chose to wear contact lens (43.6%).

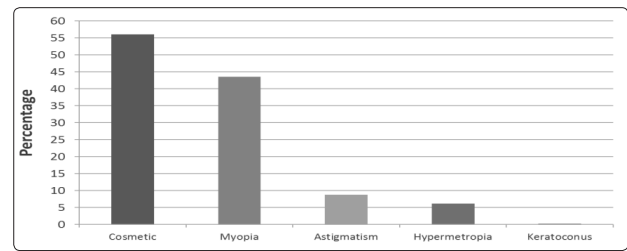


Figure 1: The reason of wearing contact lens

The commonest type of contact lens used was daily wear. The duration of wearing contact lens was more than 1 year (74.4%) among the students. The hygiene behavior regarding cleanliness of the lens case and contact lens among the medical and non-medical students were not statistically significant ($p = 0.276$). A total of 92.1% of medical students and 89.3% of non-medical students showed good hygiene behavior. The study showed a statistically significant difference regarding self-management between the medical and the non-medical students ($p = 0.026$) as shown Table 1. The medical students had better knowledge and behavior of contact lens care than non-medical students. The self-management and self-prescribing behavior about contact lens wear was way common in the non-medical students. Non-medical students were more in the self-prescription of the contact lens (53.1%) and most of the students from both groups were buying their contact lenses from the retail stores (83.6%).

Table 1: Prescription and Purchasing of Contact Lens

	P value	Non-medical students(n)%	Medical students(n)%
Who prescribed your con-tact lens?			
Ophthalmologist	(45)23.8%	(52)16.7%	0.026
Optician	(46)24.3%	(67)21.5%	
Friend	(6)3.2%	(27)8.7%	
Yourself	(92)48.7%	(165)53.1%	

Regarding the contact lens wear related complications, the difference between medical and non-medical students was statistically significant ($p = 0.028$). The non-medical students were more into self-management and 117 (68.8%) were not even fully aware of the contact lens wear related complications.

Discussion

Contact lens use is very common all over the world due to multiple reasons e.g., cosmetic, correction of refractive errors, therapeutic etc. Although Contact lens (CL) use is very common among younger population, adults are also using these due to the same reasons. According to a study carried out in Saudi Arabia about the prevalence of contact lens use in young university population, the prevalence of CL use is 70.2% [9]. Fifty percent were part time users of CL, and cosmetic reasons were the major reason (63.3%) for CL use [9]. The prevalence of contact lens usage among medical students observed in our study was much lower (37.8%) and the cosmetic reason (56%) was the most important reason of wearing CL in young university girls of 18-28 years ($SD \pm 20$) of age. It is very important to get the contact lens from a reliable source and change the contact lenses according to schedule as set by the manufacturer. Reusing

the contact lens for more than scheduled time predisposes to eye complications. In our study 96.6% students were using soft contact lenses and 74.4% were using from more than a year. Most of the non-medical students were involved in self-prescription of their own CL (51.4%) while 22% were taking these from local opticians. Instead of buy from a reliable professional source they were buying their CL from retail shops (83.6%). The present study showed the careful behavior of the medical students in buying and using the contact lens as compared to the non-medical students [3]. Soft contact lenses are soaked in solution in which enzyme tablets are dissolved. This is done to remove protein deposits on the lens which can harbor pathogens within them and cause irritation and infection in the eyes. It is absolutely vital to change the storage solution as there is always the possibility of contamination of pathogens. Moreover, when it is stored, multiplication of these pathogens and their further adherence to the contact lens makes the contact lens quite a good vector for infection to the eyes upon putting them on. It is also important that the storage solution itself is sourced from sterile solutions that are supplied by manufacturers. Self-prepared mixtures are invariably contaminated [10]. This practice is an important aspect of soft contact lens wear and in our study both groups (medical and non-medical students) were really well aware of maintaining hygiene of their contact lenses. The students in our study were following the regimen of cleaning and maintenance of their contact lenses daily. Most of the students 33% were wearing daily wear (replaced every 2-4 weeks) contact lenses and 22% were well aware of lens case care and hygiene. 66.6% were wearing contact lenses for 6-8 hours a day. Both groups showed good hygiene behavior and there was no statistically significant difference between them regarding CL hygiene. Informing the contact lens user about the complications related to its use is one of the many roles of a practitioner (especially an optometrist) which include assessing the need for contact lens, explanation about types and mode of usage, practices required for good contact lens care and eliciting history and examination of the eye for suitability for contact lens wear [10]. Over-the-counter decorative contact lens demonstrated that the uninformed buyers who acquire lenses from unauthorized providers are significantly less likely be instructed on appropriate lens use and care, consequently have a higher incidence of acute vision threatening infection and inflammation [11]. 83.6% of non-medical students in our study were in the practice of buying their contact lenses from retail stores. That is why a big number of non-medical students (68.8%) were not even aware of contact lens related complications ($p = 0.28$). Non-medical students (78.7%) in our study did not even heard of contact lens related infections ($p = 0.16$). The results from this study indicate that the overwhelming majority of contact lenses wearers demonstrate a reasonable level of knowledge with respect to compliance with hygiene, both for medical and non-medical students. Non-medical students were more in self-management and self-prescription than the other study population of medical students and were less educated about the CL related infections.

Conclusion

This study concludes that self-management with the contact lens use is very common among the non-medical students of Saudi Arabia. Although they are good at lens hygiene compliance but their knowledge about the risks and complications of contact lens use and the lens care accessories was significantly low. Although it is difficult to improve the student's behavior to the ideal level, we have to emphasize all the lens care instructions and reinforce the same at follow-up visits to minimize lens contamination and a

possible ocular complication. Education alone is not a sufficient strategy to improve behavior; newer approaches aimed at improving compliance with lens care practices are seriously needed.

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