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Original Research Article

Awareness, knowledge and practice of contact lens use among medical students

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ABSTRACT

Background: Contact lens are thin optical lenses that are commonly used for correcting refractive errors. They are available in various materials, types, and colors. The complications associated with contact lens usage are allergic conjunctivitis, keratitis, and neovascularization. These complications arise with a lack of proper practice and knowledge about contact lens. In our study, we assess the awareness, knowledge, and practice of contact lens use among medical students of Saveetha medical college and hospital. Study design was cross-sectional study. Place of study was Saveetha medical college and hospital, Thandalam, Chennai.
Methods: A cross-sectional study was conducted on contact lens users among medical students. A total of 100 contact lens users participated in the study of which 70 were females and 30 were males. The study was done using pretested semi-structured questionnaire. The data were collected, tabulated, and analyzed using SPSS version 25 software.
Result: There is a female predominance with about 70%. Most of the participants use contact lens for both cosmetic and refractive errors. About 91% of students use soft contact lens. Nearly 70% of students are not aware of overwear syndrome. Problems faced by contact lens wearers include dryness, eye discomfort, pain, watering, and redness.
Conclusions: The lack of proper practice, knowledge, and awareness of contact lens use even in those knowledgeable like medical students increases the risk of complications. Thus, there is a need to provide more education to consumers.

Keywords: Contact lens, Practice, Knowledge, Medical students

INTRODUCTION

Contact lens has become more popular with new improvements in materials as well as the availability of variants suitable for a wide variety of uses.[1] Contact lenses are thin optical lenses that are commonly used for the correction of refractive errors as well as improving the aesthetics of a person. There is increased popularity among the younger population (school, college, and university students and young working adults).[2] The reason for the popularity of contact lens usage can be attributed to the huge number of choices available in terms of lens material and lens type and also the availability at many locations in the country at a lower cost.[3]

Even though contact lens usage is increasing, not many are aware of the complications it causes. These complications range from mild to severe and include allergic conjunctivitis, giant papillary conjunctivitis, lens deposition, keratitis, and neovascularization. Such complications may even require discontinuation of contact lenses and may need changes in the contact lens wearing schedules, materials, and care solutions.[4] Several risk factors associated with lens wear complications have been identified in an attempt to encourage successful lens wear and to reduce disease burden. Among the risk

factors identified, few are non-modifiable factors like gender and age and modifiable factors like lens hygiene and lens cleaning practices.[5] Albeit the risk of complication is little, it establishes a critical general medical issue when applied to a huge populace and exclusively is important to adjust the risk against the advantages offered by contact lens.[6]

Compliance with contact lens care and maintenance instructions are necessary for the safe and comfortable use of lenses. The use of contact lenses predisposes to corneal infections as it increases the microbial load in the eye. Poor contact lens hygiene is related to microbial keratitis mainly Acanthamoeba keratitis. Contact lens wear impairs the integrity of the corneal epithelium and on prolonged wear cause results in reduced corneal oxygenation, thus contributing to the development of Acanthamoeba keratitis.[7,8]

Ocular health education particularly knowledge about correct practice regarding contact lens wear can prevent complications due to the wearer's inappropriate conduct. One of the methods of researching this is from the individual's perception about his own knowledge of contact lens wear. Self-assessment then tells how well the directions of contact lens wear usage were given. This helps in reducing complications of contact lens wear.[3]

Therefore, it is necessary to increase awareness about contact lens usage and complications related to it and the study aims at assessing the awareness and knowledge of lens wear and practice.

METHODS

A cross-sectional study was carried out in line with regulations, including the approval of the ethical committee. The study was conducted on contact lens users among medical students in Saveetha medical college and hospital from February 2021 to August 2021. All medical students who have used contact lenses in the past for any period and those who are currently using contact lens were included in the study. The first-year students and students who do not wear contact lens were excluded from the study. A total of 100 contact lens users participated in the study. In the study, 70 females and 30 males participated. The purpose of the study was explained to the participants and their informed consent was obtained. The study was conducted using pretested semi-structured questionnaire. All the questions were prepared in English. Data was collected and tabulated. The data was analyzed using SPSS version 25 software.

RESULTS

Out of 100 contact lens wearers, 70% were females and 30% were males (Figure 1). Most contact lens wearers belong to the age group 19-21 years (Figure 2). Students who are currently using contact lens account for about 75% and students who used contact lenses in the past are 25%. Maximum students (59%) use contact lens for both cosmetic and refractive error purposes, 33 % of students use contact lens only for refractive error, and 8% of students use contact lenses only for cosmetic purpose. Most students (91%) use soft contact lens and 9 % use semi soft contact lens. About 49% of students wear contact lenses for <11 hours, 35% of students wear contact lens for 11-12 hours, and 16% wear them for 12-14 hours.

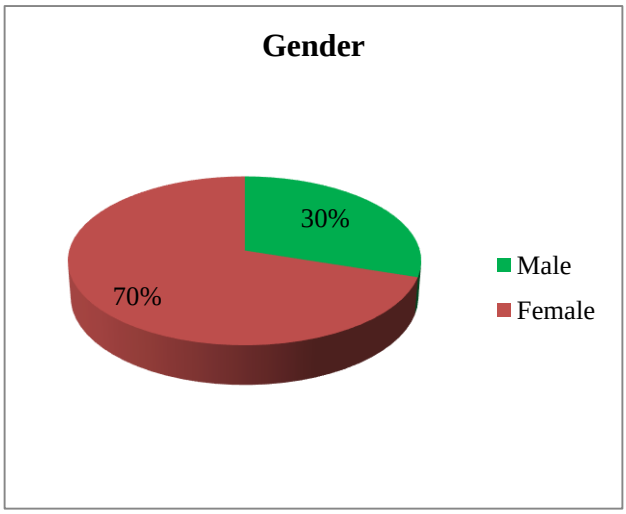

Figure 1: Gender distribution of the study population.

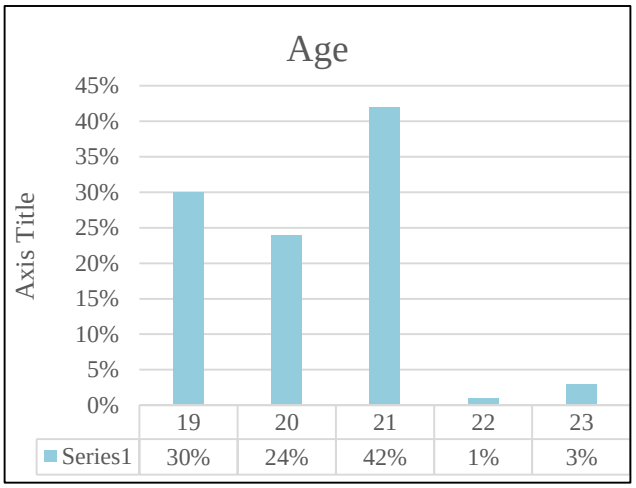

Figure 2: Age distribution of the study population.

Among the problems faced by contact lens wearers, students who experienced dryness were 23%, eye discomfort was 28%, pain was 2%, redness was 15 %, watering were 20% and those who had no symptoms account for about 12% (Figure 3). The majority of students (83%) used lens solution for cleaning contact lens while the remaining 17 % used water for cleaning contact lens. Hygiene related to contact lens were analyzed and it was found that 78% of students cleaned the lens before and after use while 22% did not clean the lens. About 57% of students did not wash their hands

before handling contact lens and the remaining 43% washed their hands.

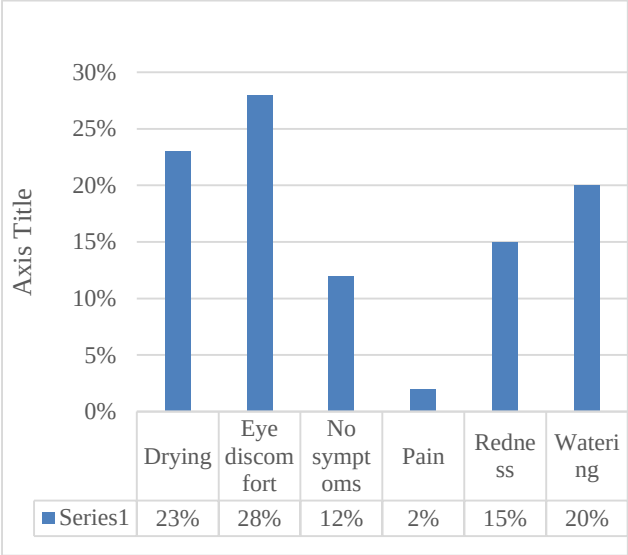

Figure 3: Problems faced due to contact lens use.

Many students about 55% did not remove their contact lenses before going to bed and 45% did remove them. Around 28% have continued using contact lenses beyond the expiry date while 72% have not. About 42% were aware of the duration up to which the cleaning solution can be used and 58 % were not. About 70% of students were not aware of the overwear syndrome. Only 27% of students were aware that prolonged contact lens wear causes oxygen deprivation of cornea. Only 17% knew that Acanthamoeba infection could be caused due to the use of water as a cleaning solution for contact lens whereas the remaining 83 % did not know (Figure 4). Nearly 60% of students use eye makeup but only 21 % of total students were aware of the complications caused by the use of eye makeup (Table 1 shows all the parameters discussed here).

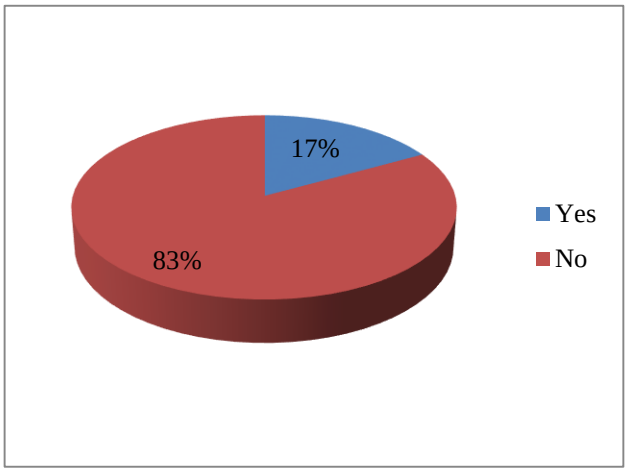

Figure 4: Knowledge about acanthamoeba infection due to use of water as a cleaning solution for contact lens.

Table 1: Awareness, knowledge, and practice of contact lens among medical students, (n=100).

Particulars	Percentage (%)
Gender	
Male	30
Female	70
Age (Years)	
19	30
20	24
21	42
22	1
23	3
Contact lens use	
Currently using	75
Used in the past	25
Reason for contact lens use	
Cosmetic	8
Refractive error	33
Both	59
Type of contact lens used	
Soft	91
Semi soft	9
Rigid	0
Hard	0
Hours of contact lens use	
<11	49
11-12	35
12-14	16

Continued.

Particulars	Percentage (%)
Years of contact lens use	
<1	5
1-2	19
2-3	37
>3	39
Problems faced due to contact lens wear	
Eye discomfort	28
Drying	23
Pain	2
Redness	15
Watering	20
No symptoms	12
Cleaning material used	
Lens solution	83
Water	17
Hygiene related to contact lens use	
Cleaning lens before and after use	78
Not cleaning lens	22
Hands are washed before handling contact lens	
Yes	43
No	57
Contact lens is removed before going to bed	
Yes	45
No	55
Contact lens used beyond expiry date	
Yes	28
No	72
Knowledge about duration upto which contact lens cleaning solution can be used	
Yes	42
No	58
Knowledge about overwear syndrome	
Yes	30
No	70
Knowledge about oxygen deprivation of cornea due to prolonged contact lens use	
Yes	27
No	73
Knowledge about Acanthamoeba infection due to use of water as a cleaning solution for contact lens	
Yes	17
No	83
Use of eye makeup	
Yes	60
No	40
Knowledge about the complications that occur on use of eye makeup	
Yes	21
No	79

DISCUSSION

In our study, the maximum number of contact lens wearers were females (70%). The most common purpose for using contact lenses was found to be both cosmetic and refractive error which is similar to the study by Giri et al.[2]

A study by Lee et al had a sample size of 1815 participants belonging to the age group 12-55 years whereas in our study the sample size is smaller, about 100 participants in the age group 19-23 years.[9]

In our survey, the percentage of students who use lens cleaning solutions for contact lens were higher than those who use water as a cleaning solution. This is in accordance with Giri et al.[2] Using water as a cleaning solution predisposes to acanthamoeba infection as these organisms are present in water. Another study by Feys also commented that Acanthamoeba infection is related to the use of tap water as a cleaning solution.[10]

Problems faced by contact lens wearers who use them for long hours mainly include dryness (23%) and eye discomfort (28%). Similarly, a study by Unnikrishnan et al noted that contact lens users who wear it for long hours faced general discomfort (47.7%) and redness (19.2%).[1] Other problems that contact lens wearers may face include pain, watering, photosensitivity, gritty sensation, and blurring of vision.[11]

Most students (55%) do not remove contact lenses before going to bed. This overnight wear predisposes to contact lens-related infectious keratitis mainly bacterial keratitis. A study by Feys also stated that overnight wear along with poor lens hygiene, contamination of lens storage case, and contaminated lens care solution predisposes to keratitis.[10] People wearing contact lens for long-duration mainly while sleeping, are at higher risk of developing complications due to longer contact of the lens with cornea which leads to corneal anoxia.[12]

In our study, most of the participants were found to be wearing contact lens for <11 hours and only 16% use for > 12 hours per day, in contrast with the study done by Vidotti et al in which 63.9 % were using contact lens for >12 hours per day.[13]

CONCLUSION

In this research study, on assessing the knowledge, awareness, and practice of contact lenses, we found that knowledge alone does not guarantee the proper practice of contact lens wear and care. Improper practice, awareness, and knowledge of contact lenses even in educated users like medical students increases the risk of complications related to contact lens use. Therefore, it is necessary to provide more education to the consumers regarding the care and complications associated with contact lenses. Such information should be provided by contact lens providers and prescribing doctors. This helps in reducing the prevalence of eye complications among contact lens wearers.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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