Contact lens use among medical students in Goa: A cross sectional study

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Abstract*—Contact lenses use on increasing trend specially among youth; however its usage has been limited because of the associated complications. Studies have been done in other states of India to assess the awareness and practices about contact lens usage among medical students. But not a single such study done in Goa. Hence a cross sectional, descriptive study was conducted among 600 medical students at Goa medical College over a period of 2 months after Institutional Ethics Committee approval and consent from the participants. The participants were administered a semi-structured questionnaire to assess the various variable like length of use, used per day, reasons for use etc and complications of using contact lenses. Statistical software SPSS 22 (trial version) was used for data analysis. It was observed that the percentage of medical students using contact lenses was 5%. Majority of contact lens users were femalesi.e.76.67%. Majority (53.33%) of study participants used contact lenses for more than 24 months, 26.67% used for 12-24 months, 13.33% for 6-11 months and only 6.6% used contact lenses for less than 6 months. Majority (44.33%) of participants used lenses for cosmetic reasons. Regarding contact lens used per day, 43.33% used contact lenses for less than 8 hours, 36.67% for 8 to 11 hours and only 20% for more than 12 hours a day. Regarding complications, 30% had ocular discomfort, 26.67% had watering of eyes. Other problems were dry eyes (20%), red eyes (6.67%), short wearing time (6.67%) and poor distant vision (3.33%).*

Keywords: Contact Lenses, Knowledge and Practices

I. INTRODUCTION

Contact lenses are increasing in popularity among youth because of ease of usage, better quality of vision as compared to spectacles and for cosmetic reasons.[1] However, contact lenses are associated with complications such as dry eye, giant papillary conjunctivitis, corneal edema, corneal ulcers, keratitis and neovascularization.[2,3] The awareness of these complications are reportedly less among the youth.[4] Studies have been done in other states of India to assess the pattern of contact lens usage among medical students. But despite extensive literature search not a single such study done in Goa was not found. Hence this study was conducted among medical students in Goa medical College to study the pattern of contact lens usage among them and its reasons & complications.

II. METHODOLOGY

A descriptive study was conducted on 600 medical students (I MBBS, II MBBS, III MBBS Part-1, III MBBS Part -2) at Goa Medical College and Hospital, which is the only tertiary care hospital and medical college in Goa. The study period was between March to April 2019 (2 months). Institutional Ethics Committee approval was obtained prior to commencement of the study and informed consent was also obtained from the study participants. The participants were administered a pre-tested semi-

structured questionnaire which comprised of 23 questions which assessed their practices regarding contact lens usage and its reason & complications.

The data so obtained was statistically analyzed using SPSS version 22 (trial version) and presented as simple percentages and proportions.

III. RESULTS

In this present study, out of total 600 study participants, only 30 used contact lenses. So the proportion of contact lens usage being 5%. (Figure 1)

Figure 1

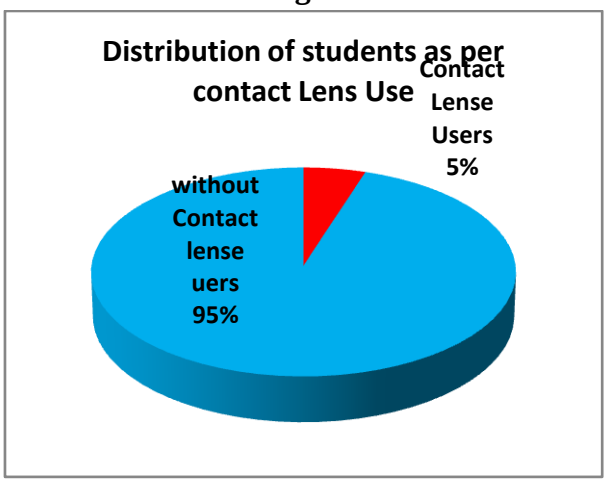
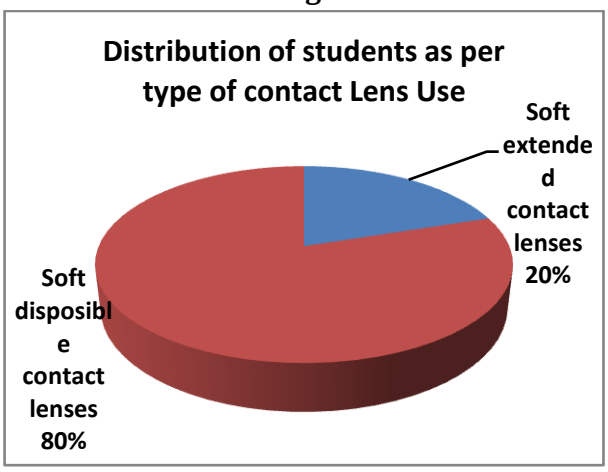


Figure 2



The age distribution of students using contact lenses ranged between 18-22 years. Out of 30 contact lens users, majority (23 i.e. 76.67%) were females with female to male ratio was 3.3:1. Majority i.e. 24 (80%) participants were seen to be using soft disposable contact lenses while 6 (20%) used soft extended wear contact lenses. None of the participants were using rigid gas permeable contact lenses. (Figure 2)

Only 30% cleaned their contact lenses on a regular basis. it was also found that 4 (13.33%) participants were using tap water to clean their contact lenses and none of the participants were using anti-protein tablets for removal of protein deposits from contact lenses.

Regarding the duration of contact lens use varied from less than 6 months to more than 24 months. Majority of study participants i.e. 16 (53.33%) used contact lenses for more than 24 months followed by 8 (26.67%) used for 12-24 months, 4(13.33%) for 6-11 months and only 2 (6.6%) used contact lenses for less than 6 months. (Table 1)

Table 1
Distribution of Contact Lens users as per time period of contact lens use (N=30)

S. No.	Study Variables	Number	Percentage (%)
1	Less than 6 months	2	6.67%
2	6 to 11 months	4	13.33%
3	12 to 23 months	8	26.67%
4	More than 24 months	16	53.33%

Regarding duration of contact lens usage per day; it ranged from less than 8 hours to more than 12 hours. Majority of the study participants i.e. 13 (43.33%) used contact lenses for less than 8 hours followed by 11 (36.67%) for 8 to 11 hours and only 6(20%) participants used contact lenses for more than 12 hours a day. (Table 2)

Table 2
Distribution of Contact Lens users as per time period of contact lens use per day (N=30)

Study Variables	Number	Percentage (%)
Less than 8 hours	13	43.33%
8 to 11 hours	11	36.67%
More than 12 hours	6	20%

It was also observed that only 9 participants i.e. 30% cleaned their contact lenses on a regular basis i.e. atleast 5 days a week. (Figure 2)

When reasons for contact lenses was discovered it was found that majority (44.33%) used due to cosmetic reason while 36.67% used contact lenses for convenience and 20% used contact lenses for other reasons like outdoor sports, gymnastics and dancing. (Table 3)

Table 3
Reasons for Contact Lens use (N=30)

Study Variables	Number	Percentage (%)
Cosmetic	13	43.33
Convenience	11	36.67
Others	6	20.00

Regarding complications of contact lens use, the commonest problem was discomfort reported by 30% of study participants followed by watering eyes by 26.67% of participants. Other problems reported were dry eyes (20%), red eyes (6.67%), short wearing time (6.67%) and poor distant vision (3.33%). Other problems like papillae blurring, stickiness etc. were reported by 6.67% of participants. (Table 4)

Table 4
Complications of Contact Lens use (N=30)

Study Variables	Number	Percentage(%)
Watering eyes	8	26.67
Discomfort	9	30
Dry eyes	6	20
Poor distant vision	1	3.33
Red eyes	2	6.67
Short wearing time	2	6.67
Others	2	6.67

IV. DISCUSSION

The current study was conducted on 600 medical students and it was observed that 5% of the students were using contact lenses. In this study this contact users were comparatively lower than that of other parts of country like in Tamil Nadu[5] (22%) and Maharashtra[4] (17%). A similar study done in Singapore by Lee et al[1]showed that 8% of the participants were using contact lenses. These observations are almost similar to the present study.

It was also noted in present study that majority of the users i.e. 76.67% were females and the reasons for usage were mainly cosmetic (44.33%), while 20% were using contact lenses for refractive purposes. Another important reason for usage of contact lenses was convenience (i.e. 36.67%) These findings are in line of the findings reported by Giri PA et al[4] (84.4%), Kumar VT et al[6] and Janti et al[5] where most of the study participants were females and the main reasons for contact lens usage was cosmetic and convenience.

In this present study, majority of study participants had been using contact lenses for more than 2 years i.e. 53.33%. The duration for which the contact lenses were kept in the eye varied according to the type of contact lens used; 13 (43.33%) participants were seen to be wearing lenses for less than 8 hours per day, while 11(36.67%) wore contact lenses for 8-11 hours and only 6(20%) were seen to be wearing contact lenses for more than 12 hours. Only one participant i.e.0.33% reported that he wore contact lenses while sleeping also. In a study conducted by Giri et al[4] and in another study by Kumar VT et al[6] reported that 18.96% and 2% of the participants respectively were found to be wearing contact lenses during sleeping hours. This is a very wrong practice and predisposes an individual to conditions such as infective keratitis, corneal warpage, corneal erosions and corneal edema[7,3]. Hence such a practice is to be strongly condemned.

It was also found in this study that majority (80%) of study participants were using soft disposable contact lenses while 20% used soft extended wear contact lenses. None of the participants were using rigid gas permeable contact lenses. Soft disposable contact lenses have better comfort as compared to rigid lenses. Rigid lenses are however recommended in cases where there is marked corneal astigmatism such as keratoconus and keratoglobus; and for overnight corneal moulding for correction of severe myopia by a technique known as orthokeratology.

In present study only 30% cleaned their contact lenses on a regular basis. it was also found that 13.33% participants were using tap water to clean their contact lenses and none of the participants were using anti-protein tablets for removal of protein deposits from contact lenses. These findings well in resonance with a study done by Curran et al[8] who also reported only 30% participants reported to be cleaning their contact lenses on a regular basis and that too using tap water. Similar findings were reported by Janti et al[5] in Tamil Nadu where majority participants were not cleaning their contact lenses appropriately and 5.4% used tap water to clean lenses. Long term usage of contact lenses leads to deposition of protein precipitates on the under surface of contact lenses. It is recommended that once a week the contact lenses must be soaked in a solution containing anti- protein tablets which help dissolve these deposits.[7] These deposits reduce the quality of vision and also predispose to the development of corneal infiltrates and keratitis. Using tap water to clean the contact lenses is not recommended as it predisposes to infectious keratitis by organisms such as acanthamoeba.[3] Contact lenses are to be cleaned on a regular basis using appropriate contact lens cleaning solution and allowed to dry.

Among the problems faced by the contact lens users, in the present study the most common was ocular discomfort and foreign body sensation as reported by 30% of the study participants, followed by who complained of watering of the eyes (26.67%), 20% had dry eye disease, 6.67% had complain of redness of the eyes, 6.67% could not tolerate the contact lenses for long hours and had to remove the lenses within few minutes. One participant i.e. 3.33% complained of poor vision despite using contact lenses. Other study conducted by Riley C etall[9] also reported dryness by 23%, discomfort by 13%, and at least 2 hours of uncomfortable wear by 27%.The main causes for such symptoms are incorrect fit of the

contact lens, too loose or too tight fit, giant papillary conjunctivitis due to allergic reaction, not cleaning the contact lenses properly, presence of protein deposits on the contact lens, contaminated contact lens cleaning solution etc. Inadequate cleaning of the contact lenses or washing with tap water may lead to contamination of the contact lenses with microorganisms, which may lead to infectious keratitis with organisms such as Acanthamoeba and pseudomonas species.[3,2,10] Individuals who are intolerant to contact lenses must get themselves evaluated by an Ophthalmologist at the earliest.

V. CONCLUSION

This study depicts the pattern of contact lens usage among Medical students in Goa is lower (5%) than other parts of country. And it is evident that most participants were using contact lenses due to cosmetic reasons. About one third students felt discomfort with contact lenses, watering eyes by 26.67%, dry eyes in 20%, red eyes in 6.67%, short wearing time in 6.67% and poor distant vision in 3.33% of contact lens users. It is also noted that there is a need for better awareness among medical students regarding the correct practices that need to be followed by someone using contact lenses. A few students were facing problems with usage of contact lenses and were advised to take an Ophthalmologist's opinion for the same.

CONFLICT OF INTEREST

None declared till now.

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