

# Ocular health education – Knowledge, Attitude and Practice of contact lens usage among medical students

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## ABSTRACT

**Introduction :** The aim of the study is to assess in medical students of SSIMS&RC, Karnataka, the knowledge, attitude, and practice of contact lens wear and to highlight the complications of improper contact lens use and to suggest the correct methods to be followed.

**Methodology :** Study was conducted by providing semi-structural questionnaire. Questions were in English, regarding the use of contact lens, maintaining cleanliness of contact lens, ocular complications that may arise due to use of contact lens, discarding of lens beyond date of expiry, benefits of contact lens use over spectacles.

**Results :** Of total 300 students surveyed, 63 were wearing contact lens.

It was observed that in our study, students wore contact lens for refractive purpose were around 49.2% and those who wore for cosmetic purpose only was 16% and for both was around 25%.

Majority of the students wore soft contact lens that is around 34%.

25% of the participants wore contact lens for a minimum of 5-10hours a day, 24% wore for 10-15 hours a day, 16% wore it occasionally overnight, 11% habitually wore it overnight. 17.46 % developed redness and 17.46% experienced general discomfort. 15.87% cleaned their lens with running water. 9.05% of them slept with their lens. 6 % of them continued to wear them beyond the date of expiry. 52.38% of the students had no knowledge about over wear syndrome. 46.03% of the students did not have knowledge on the duration of solution used for cleaning contact lens, 28% of the students had no knowledge about acanthamoeba infection by using water as lens solution 13% of them have swum with their lens. 66.66% of them preferred their spectacles as it is easy to use and handle, only 20.62% preferred contact lens.

**Conclusion:** Majority of the participants did not know about these complications. There must be more education to the consumers about the contact lens care and complications related to contact lenses, which should be provided by all contact lens providers. The do's and don'ts regarding contact lens use can also be taught to medical students during Ophthalmology postings to make them aware of the above said complications.

**Keywords:** Contact lens, Medical students, Overwear syndrome

## Introduction :

Contact lenses are thin optical corrective devices worn on the eye, resting on the surface of the cornea.<sup>1</sup> They cling to the film of tears over the cornea due to surface tension. Besides correcting refractive errors, they also improve the aesthetics of a person and are getting more popular among the younger population (school, college, university students, young working adults). The probable reasons for popularity of contact lens usage are the huge amounts of choices available, not only in terms of lens type and materials alone, but also the increased availability at large number of locations in the country at a much lower cost compared to the past.<sup>2</sup>

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Despite the considerable evolution of contact lens, people are not fully aware of various merits and demerits of contact lenses. Ocular health education especially knowledge in the correct and careful practice regarding contact lens wear can go a long way in preventing complications.<sup>3</sup> Contact lenses are usually safe as long as they are used correctly. It has been showed in previous studies that majority of the complications arise due to the wearer's inappropriate behaviour. One of the ways of investigating this is from the person's perception regarding his or her own knowledge of contact lens wear.<sup>4</sup>

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There is need of research to bring about the awareness of correct knowledge regarding contact lens use, and on the complications , which being as simple as a dry eye, giant papillary conjunctivitis, corneal abrasion, to as severe as corneal edema, corneal ulcer, keratitis and neovascularization.<sup>5</sup> The awareness of these complications was found lacking amongst the younger users.

This present study is focused mainly on increasing the awareness of medical students, as they are the future community healthcare providers.

### **Methodology:**

A cross sectional study was conducted using a pretested structured questionnaire among the contact lens wearing among the medical students during their study period in S.S. Institute of Medical Sciences and Research Centre. Any medical student who has ever worn contact lens for any period of time and for whatever reason was enrolled in this study. Data was obtained from 63 contact lens wearers using a structured questionnaire in English.

The questionnaire mainly had questions focusing on the knowledge, attitude, practice of contact lens wear and on the awareness of the probable complications that may arise on faulty use of contact lens or its cleaning solution.

### **Results :**

Out of the 300 medical students surveyed, 63 of them wore contact lens during some period of time, hence the prevalence of contact lens wearers is 21 % in our study.

It was observed that in our study, students wore contact lens for refractive purpose were around 49.2% and those who wore for cosmetic purpose only was 16% and for both was around 25%.

Majority of the students wear soft contact lens that is around 34% followed by semisoft contact lens around 15%. Most of the students 33%, who participated in the study have been wearing contact lens since less than 1 year, 25% since 1-4 years, and 20% more than 4 years. 25% of the participants wore contact lens for a minimum of 5-10 hours a day, 24% wore for 10-15 hours a day, 16% wore it occasionally overnight, 11% habitually wore it overnight. 38.01% of students developed no symptoms, 17.46 % developed redness and 17.46% experienced general discomfort. 53.96% of students cleaned their contact lens with lens cleaning solution only, 15.87% cleaned it with running water, 30.15% of them used lens solution and tap water. 68.2% of the students removed their lens before sleeping, 9.05% of them slept with their lens. 30% of them washed their hands before handling the lens, 9 % did not. 33% of the participants discarded their lens beyond expiry date, 6 % of them continued to wear them beyond the date of expiry. 52.38% of the students had no knowledge about over wear syndrome, 27% of them knew about it. 29% had no knowledge about the side effect of kajal use, 11 % of them knew about the side effects of kajal on contact lens.

46.03% of the students did not have knowledge on the duration of solution used for cleaning contact lens, 33.33% of them knew about it. 28% of the students had no knowledge about acanthamoeba infection by using water as lens solution 13% of them have swum with their lens. 66.66% of them preferred their spectacles as it is easy to use and handle, only 20.62% of the people preferred contact lens as it was cosmetically more appealing to users who were high myopes and it saved them the embarrassment from wearing thick spectacles.

### **Discussion :**

There is no literature available about the prevalence and pattern of contact lens wear and usage in medical students from Karnataka, even though large numbers of young adults are wearing contact lenses. Chavan *et al.* study done in Maharashtra showed prevalence of contact lens in medical students was 17% which was less than ours.<sup>6</sup> Lee *et al.* From Singapore has reported that the prevalence of contact lens use was 8% in their country of age between 15 and 50 years.<sup>7</sup>

A study of prevalence of contact lens usage among medical students done by Tajunisah *et al.* was much lower than a similar study reported by Vidotti *et al.* from Brazil (27.4%).<sup>8</sup> Hence, it shows that the usage of contact lens is increasing day by day.

Main reasons for using contact lenses were refractive error and ease of wear in our study contrary to the observations made by Tajunisah *et al.* i.e. 87.6% females were using contact lenses for cosmetic purpose only.

According to Claydon *et al.*, the reasons of noncompliance in contact lens wear are lack of hand and lens-case hygiene and the over wearing of contact lenses, education was thought to be one of the main factors which will influence compliance it is also observed that many are still not aware of expiry dates and about over wear syndrome.<sup>9</sup>

A study done by Curran *et al.* among 787 contact lens wearers revealed that only 30% cleaned their lens case daily and that too mainly with tap water only. Most ophthalmologists recommend that lens cases should be cleaned daily with fresh contact lens solution and allowed to air dry. The lens cases should be replaced at least every 90 days.<sup>10</sup> In our study, we found that some of the contact lens users were using tap water to clean the contact lenses. The results of these studies discussed above shows similarities with our current study which shows that many contact lens wearers are increasing their risk to infection and complications by not properly following the lens care methods.<sup>11</sup> It is important to change the storage solution as there is always the chance of contamination of pathogens. Moreover, when it is stored, pathogens multiply and adhere to the contact lens making the contact lens quite a good vector for infection. Majority of students (33.3%) were using soft contact

lenses as they are more comfortable and better-tolerated. Same was noted by Tajunisah *et al.* in his study 82% students were using soft contact lenses and Chavan *et al.* 94% were using soft contact lens. In our study, 9.5% of the students were sleeping with the lenses, a practice which needs to be stopped as it might predispose to corneal infection. Another study by Feys also noted that in addition to poor hygiene, contaminated lens solution, and contamination of contact lens storage case, over wear syndrome also is the cause of bacterial keratitis.<sup>12</sup> People who are wearing contact lens while sleeping are usually more prone to eye complications due to a longer period of contact of the lens on the cornea as it causes corneal anoxia.<sup>13</sup> In the present study, 24% students were using contact lenses for more than 10 hours. This observation is contradictory to observation of Chavan *et al.* as in their study 65.5% students were using contact lens for 10-12 hours.

Students who use contact lenses for prolonged time have faced problems such as general discomfort (17.46%) and (17.46%) redness. Similarly, study by Unnikrishnan and Hussain has revealed that general discomfort (47.7%) and (19.2%) redness.<sup>14</sup> There are many ocular symptoms, a contact lens user can encounter such as dry eye or gritty sensation, redness, excessive lacrimation, eye pain, photosensitivity, and presence of haloes.<sup>4</sup> 57.24% of students did not know the side effects of kajal use in contrary with Chavan *et al.* where only 12% did not know. Kajal causes irritation and can aggravate dryness of eyes.

Education should be given that removal of contact lens at the first sign of eye symptoms is very important for early recovery from the complications.<sup>15</sup>

Recommendations for contact lens wearers from the American Optometric Association<sup>16</sup>

1. We should always wash and dry our hands before handling the contact lenses.
2. We should carefully and regularly clean the contact lens as directed. Rub the contact lenses with fingers and rinse well before we soak the lenses overnight in sufficient multi-purpose solution so that it completely covers the lens.
3. Lens should be stored in proper storage case and should be disposed every 3 months, and it should be cleaned after each use.
4. Only fresh solution should be used to clean and store contact lenses, and the solution should not be reused
5. Should always follow the contact lens replacement schedule recommended
6. Contact lenses should be removed before swimming or entering a hot tub.

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#### Conclusion :

Contact lens can cause serious vision threatening complications such as corneal opacities, vascularisation, and ulcer. Many students did not know about these complications. There is a need for more education to the contact lens users about the contact lens care and complications related to contact lenses, which should be provided by doctors before prescribing.<sup>17</sup>

The do's and dont's regarding contact lens use can also be taught to medical students during Ophthalmology postings to make them aware of the above said complications.

Hence, education, improving communication, behavioral modifications are important to improve the compliance & to increase the success rate of contact lens.

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