



A CLINICAL SURVEY OF DRY EYE SYMPTOMS IN CONTACT LENS WEARERS AND NON-CONTACT LENS WEARERS AMONG UNIVERSITY STUDENTS

Surgery

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KEYWORDS

INTRODUCTION:

Dry eye syndrome is a condition caused by decreased tear production, increased tear evaporation or instability in tear film. These factors may produce inadequate lubrication of the conjunctiva and cornea. Dry eye syndrome is a condition caused by decreased tear production, increased tear evaporation or instability in tear film. These factors may produce inadequate lubrication of the conjunctiva and cornea. It has been reported that the dry eye symptoms are more common and intense among the contact lens wearers when compared to the noncontact lens wearers

An estimated 140 million people worldwide wear contact lenses as a means of refractive error correction and 10%–50% of wearers dropout of contact lens wear within 3 years of commencement, the most common reason cited being contact lens discomfort (CLD), with 70% of people reporting CLD late in the day. Of the symptoms reported, the sensation of dry eye is the most common and also the primary reasons for the contact lens wearers to cease lens wear.

Students, especially contact lens wearers, might present with intensive dry eye symptoms because of other reasons such as extensive usage of computer which is one of the predisposing factors of dry eye

AIM & OBJECTIVES:

- 1) To determine the prevalence of dry eye symptoms in contact lens wearers and non-contact lens wearers among students of our university.
- 2) To find out association between dry eye symptoms and gender in these students.

MATERIALS & METHODS:

This study was conducted among the undergraduate medical students aged between 18 and 30 years over a period of six months.

The students were explained the purpose of the research project and consent was taken for their participation. Study was approved by institutional ethics committee. It was cross sectional survey based study.

METHOD:

The questionnaires were given depending on the use of contact lenses. Contact lens dry eye questionnaire (CLDEQ) for contact lens wearers and dry eye questionnaire (DEQ) for non-contact lens wearers were used in the study.

Students using contact lenses for the past 4 weeks or more were considered as contact lens wearers.

Both questionnaires were similar, except that contact lens wearers

were asked to report the symptoms they experienced while wearing contact lenses. Both questionnaires included categorical scales to measure the prevalence, frequency, diurnal severity, and occurrence of common ocular surface symptoms.

Ocular symptoms that were assessed included discomfort, dryness, blurring of vision, soreness and irritation, foreign body sensation, burning and stinging, and sensitivity to light.

The questionnaire also included questions about how ocular symptoms affected daily activities, questions concerning computer use, history of contact lens wear, self-assessment whether the subjects thought that they had dry eye, and whether subjects have been previously diagnosed to have dry eye.

The questionnaire were analyzed using SPSS software version 16. Chi square test was used to find out any association between dry eye symptoms and gender in these two groups of students.

RESULTS:

- Total 623 students were given questionnaire and 452 out of them returned the questionnaires.

Table 1: Distribution of gender among contact lens wearer & non-contact lens wearer

	Contact lens wearer	Non-contact lens wearer	
Male	40	254	294
Female	78	80	158
Total	118	334	452

Table 1 shows that among the study population 294 out of 452 were male and 158 out of 452 were female. And 40 out of 294 male were contact lens wearer. 78 out of 158 female were contact lens wearer.

Age Group

- Students participated in the survey were from 18 to 30 years of age with mean age of 23 ± 0.87 years:
- 18-20 years = 113 (25%)
- 21-25 years = 294 (65.04%)
- 26-30 years = 45 (9.96%)

Contact Lens wearers:

- Around 26% (118/452) of students were using contact lens

Rigid gas permeable lenses	2 (1.70%)
Daily wear soft lenses	14 (11.86%)
Frequent/monthly replacement soft lenses	102 (86.44%)

Table 2: Shows Comparison of frequency of dry eye symptoms in contact lens wearers and non-contact lens wearers

Symptoms	Contact lens users(N=118)	Non contact lens users(N=334)
Dry eyes	112 (94.9%)	153 (45.8%)
Discomfort	104 (88.1%)	194 (58.08%)
Blurring of vision	97 (82.2%)	120 (35.9%)
Grittiness/Scratchiness	80 (67.7%)	180 (53.8%)
Burning sensation/stinging	54 (45.7%)	90 (26.9%)

Table 3: Shows Variation in dry eye symptoms with day timing

	Contact lens users with dry eye symptom	Non- Contact lens users with dry eye symptom
AM dryness	7 (8.33%)	21 (39.6%)
PM dryness	54 (64.28%)	26 (49.05%)

Table 4: Shows Association of subjects' gender with symptoms of dry eye among contact lens users and non-contact lens users

Symptoms	Contact Lens users		Non-contact lens users	
	Male	Female	Male	Female
	(chi-square=12.78; p=0.008)		(chi-square=14.48; p=0.004)	
With symptoms of dry eye	15/84 (17.85%)	69/84 (82.14%)	23/53 (43.39%)	30/53 (56.60%)
Without symptoms of dry eye	10/34 (29.41%)	24/32 (70.58%)	141/271 (52.02%)	130/271 (47.97%)

DISCUSSION:

As shown in table 1, our study showed that majority of the contact lens wearers were females. This may be due to a particular trend in the current world fashion in which females strive to look good (without spectacles).

Symptoms of dry eye were reported more in contact lens wearer than in non-contact lens wearer. (As shown in table 2). Chalmers and Begley reported the similar findings¹.

The data mentioned about the dry eye symptoms were from the responses of questionnaire survey only. The dry eye syndrome assessment tests (slit lamp examination, Schirmer test, tear film break up time, rose bengal staining) were not performed in this study.

As shown in table 3, our study showed an increasing trend in frequency and intensity of symptoms as the day passed on with the highest intensity at the end of the contact lens wearing time. Significantly higher intensity of symptoms was reported late in the evening compared to earlier in the day with an increase from 12.7% in the first 2 hours of wear to 28.5% late in the day by Chalmers and Begley². A similar finding was reported by Reddy SC *et al*³.

In our study, Thirty eight percent (46/118) of contact lens wearers removed the contact lens to get relief of the eye symptoms while rest of the students 72/118 (61.01%) used artificial tears to get rid of their symptoms. Varying degree of comfort in dryness was reported by authors in previous studies

In our study, symptoms of dry eye were more frequent in females than males of both contact user and non-user groups. We were not sure why females were more susceptible to dry eye symptoms (as shown in table 4). However, Chalmers and Begley reported that contact lens related dryness is not associated with gender and occurs at a higher frequency and intensity in both male and female contact lens wearers.

CONCLUSION:

To conclude, all the symptoms of dry eye were significantly more prevalent in contact lens wearers when compared to non-contact lens wearers. Around one-third of contact lens users got relief of their symptoms on removing lenses. Symptoms of dry eye were more frequent in females than males of both contact wearer and non-wearer.

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