ORIGINAL ARTICLE
Correlation of dry eye symptoms and young adult riders.

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ABSTRACT... Objective: To correlate the symptoms of dry eye with young adult riders. **Study Design:** Cross-sectional study. **Setting:** Al-Tibri Medical College, Isra University, Karachi. **Period:** December 2020 to November 2021. **Material & Methods:** 60 young riders with dry eyes between the age of 21-30 years were included in the study and their duration of years in riding bike, duration of riding bike a day, and lastly the symptoms were recorded. Data was analyzed using SPSS version 24.0 and the correlation was assessed using Pearson's correlation. The level of significance was set at $P<0.05$. **Results:** The mean age of the riders were 25.46 ± 0.12. 70% of the riders were riding for more than 5 years, 23.3% riders were riding for more than 2 years, while only 6.7% were riding for less than 2 years. 36.1% riders rode for >8 hours/day, 26.7% for >6 hours/day, 21.7% for >4 hours/day, and 15% for 2 hours/day. Symptoms of dryness, burning, itching, crusting, blurring, and redness all showed significant difference with the duration of years as a rider as well as the number of hours the rider rode during the day. **Conclusion:** Dry eye symptoms significantly correlate with young adult riders and the appropriate intervention is required to treat it accordingly.

Key word: Burning, Blurring, Dry Eye, Itching, Riders.

INTRODUCTION

Dry eye presented as a common disorder of preocular tear film, that results in ocular surface disorder with loss of equilibrium between the tear film and ocular surface.[1] This complex disorder having variable distributing factors like, alter the quality of life with different symptoms including dryness, redness, burning and pain. The appearance of these symptoms can be varied with the duration of exposure to any underlying factor.[2] Some clinical testing elements can make the diagnostic strategies more feasible like, lid-wiper epitheliopathy (LWE) and including lid-parallel conjunctival folds (LIPCOF). They both shows the predictive ability dry eye symptoms especially in contact lens user.[3] The conjunctival epithelium of upper lid functionally works as wiper during the function of blinking.

In dry eye the tear film works insufficiently covers the ocular surface, and this can subject to trauma during blinking. Reduce the surface area and damage the corneal surface.[4] During the phase of pandemic COVID-19, the majority of the population was in quarantine and the system of the world shifted to the online based system, that can produce the stress over the tear film and changes its dynamics. All of these leads to produce a dry eye associated with visual disturbances, burning, redness and changes the optical quality of the eye.[5] The Women's health Study and the Physician's Health study, documented about 3.23 million women and 1.68 million men with dry eye. According to the epidemiological states, in USA 7% female and 4% male over the age of 50. According to the Nigerian study, total 422 motorcyclist were included, and the prevalence of dry eye was found high of moderate intensity. The intensity was higher among the diabetic riders.[6-7]

In Karachi the weather is so dry and sandy, so the riders develop more chance to have a dry eye and the number of riders is significantly high. As after COVID-19 the job opportunities for riders became

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more than ever thus leading to an influx of riders. Thus, a cross-sectional study was conducted with the objective to the study and evaluate the correlation of dry eye symptoms with dry eye symptoms with young adult riders.

MATERIAL & METHODS

A cross-sectional analytical study was conducted from December 2020 to November 2021 with total 60 numbers of young adult Riders were included on the basis of non-probability convenient sampling after taking an ethical approval from the concerned authority. The study commenced after ethical approval was taken from the institutional review board (ATMC/IERC/02-2022/32). The self-designed proforma was filled by the doctors with a verbal consent of the participant. Only young adult male with age between 21-30 were included and those having previous history of trauma, surgery, and other documented history related to eye damage were excluded from the study, along with age <20 and <30. Study purpose was explained to the participants before documentation. After taking data from the participants, the proper treatment was prescribed to resolve their eye issues. The data was assessed through the SPSS version 24.0. To correlate the variables the level of Pearson's correlation was significant at level of <0.01, and the level of significance was set at <0.05.

RESULTS

Total 60 numbers of male riders were included in the study with the mean age of 25.46 ± 0.12.
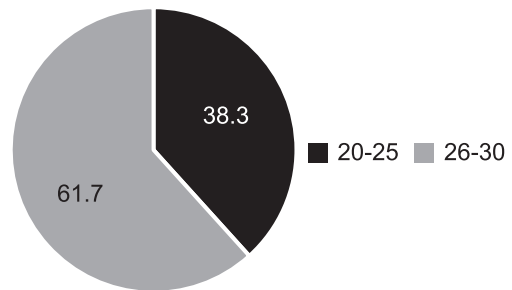Figure-1 shows the percentage of riders included in two groups of age.
Figure-2 shows the percentage of riders according to the duration in (years) from which they became a rider
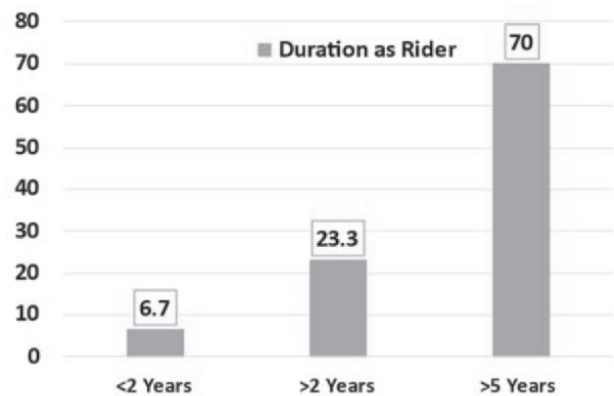Figure-3 shows the percentage of riders according to the hours/day they were engaged in riding.
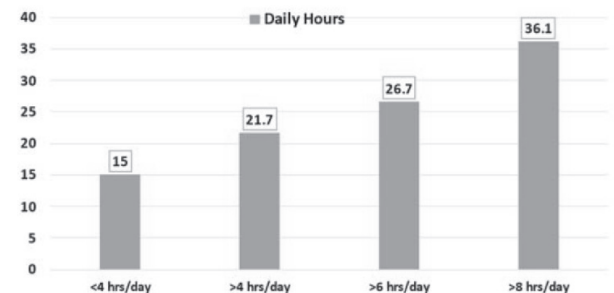Figure-4 shows the Percentage of the frequency of symptoms, according to the rider complaints.

Table-I shows the correlation of clinical symptoms of Dry eye with the duration and the hours/day they were occupied as rider
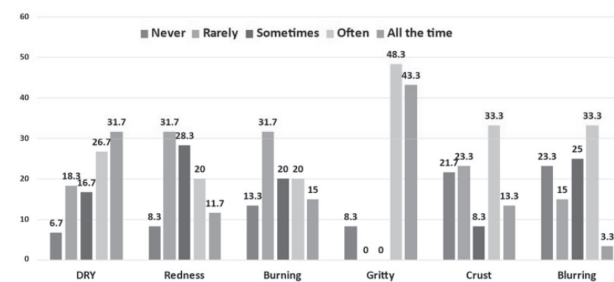

Figure-1. Shows the % of participants involved according to age Groups

Figure-2 Shows the percentage of riders according to the during (years)

Figure-3. Shows the percentage of riders according to the hrs/day they occupied in riding

Figure-4. Shows the % of clinical symptoms according to riders

Symptoms		Pearson Correlation	P-Value
Dryness	Duration (years) as Rider	0.599**	≤0.001
	Daily hours of Ride	0.655**	≤0.001
Redness	Duration (years) as Rider	0.503**	≤0.001
	Daily hours of Ride	0.644**	≤0.001
Burning	Duration (years) as Rider	0.606**	≤0.001
	Daily hours of Ride	0.836**	≤0.001
Gritty	Duration (years) as Rider	0.702**	≤0.001
	Daily hours of Ride	0.644**	≤0.001
Crust	Duration (years) as Rider	0.709**	≤0.001
	Daily hours of Ride	0.581**	≤0.001
Blurring	Duration (years) as Rider	0.545**	≤0.001
	Daily hours of Ride	0.581**	≤0.001
**Correlation is significant at the 0.01 level			
Table-I. Shows the correlation of symptoms with different variables			

DISCUSSION

Dry eye is a very common ocular issue seen within the population and in Pakistan, a study found that the prevalence associated with dry eye was 18.7% out of the 300 participants in the study. Furthermore, the study also laid done that risk factors that can cause such as working outdoors, people working in air conditioning, housewives, diabetes, smoking, exposure to excessive sunlight, wind, temperature, and lastly dysfunction of the meibomian gland.[8] Our study was conducted to assess the dry eye in young bike riders. As young bike riders are exposed to constantly working outdoors, wind exposure, and exposure to sunlight there might be the risk factors that are associated with dry eyes in young riders. Our study was designed to compare the symptoms of dry eyes with daily hours of riding and the duration since they were riding. Significant difference is seen in the correlation of both symptoms as well as duration of years as a rider and the daily hours of ride. This raises some concern, as drivers that are found to have dry eyes are also said to have a higher frequency of unsafe driving habits and reduced performance.[9] The same can also be assumed for riders delivering goods. The ability to drive is significantly reduced in patients with symptoms of dry eyes. Therefore, it is also important that dry eye must be managed and treated improperly to reduce the progression of symptoms. This needs to take place in a stepwise fashion which includes education, modification of diet, lid and lash hygiene, and then progressing to pharmacological and nonpharmacological interventions.[10]

It is absolutely necessary to diagnose patients that are suffering from dry eye disease and to identify the cause, as recognizing this will lead to improved quality of life.[11] Riders also need to be educated regarding dry eye and its symptoms as this will improve their quality of life. This will not just improve their quality of life but also risk the chances of moto vehicle accidents, which is unfortunately the leading cause of traumatic brain injury.[12] Motorbike usage is a sad necessity for the low and low-middle income countries and nearly accounts for 85% of road traffic deaths around the world.[13] Motorbike accidents not just lead to traumatic brain injury but can also cause facial trauma, dental trauma, and fractures of limbs.[14-20] Dry eye can impair the vision and may affect riding and thus increase the probability of road traffic accidents, thus proper treatment if provided can reduce the risk of road traffic accidents.

Other factors can also be studied in the future which increases the probability of road traffic accidents in the future. Furthermore, the use of helmet and how it protects the riders from road traffic accident must also be evaluated thoroughly.[21-22]

CONCLUSION

There is significant correlation of dry eyes with young adult bike riders and thus proper education and management of dry eye is required in young adult bike riders.
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3	Azfar Ahmed Mirza	Manuscript writing.	
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