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Research Article

RISK OF EYE DISEASES IN TRAFFIC POLICE WARDENS

Maryam Ilyas, Zunaira Jamil, Ayesha Siddiqa, Sarah Ahmed, Filza Sikandar, Sidra Hassan, Dr Zafar Hayat Maken

Federal Medical and Dental College, Islamabad

Article Received: November 2019 **Accepted:** December 2019 **Published:** January 2020**Abstract:****Objective:** To assess the risk of eye diseases in traffic police wardens on the basis of general eye symptoms**Methodology:** The design of this study was Descriptive Cross-sectional study and the study was conducted in Rawalpindi and Islamabad, Pakistan from 18 August 2016 to 18 October, 2016. Traffic wardens were given questionnaires to fill. Simple Frequency and Contrast Frequency was used to analyze the variables.**Results:** A total of 50 Wardens were involved with a mean age of 40.52 ± 8.92 years: 26 from Rawalpindi, 24 from Islamabad, 15 had a duration of service <5 years, 33 had a duration of service between 5-10 years and 2 had a duration of service >10 years, 18 were smokers. The prevalence of eye disease was high (72%) with higher figures in those who served more years as wardens.**Conclusion:** Eye health status of traffic wardens was poor and the preventive measures usually employed were ineffective to a large extent.**KEYWORDS:** Eye Diseases, Traffic Police Wardens, Preventive Measures**Corresponding author:****Dr. Maryam Ilyas,**

Federal Medical and Dental College, Islamabad

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INTRODUCTION:

Eye health is important as it contributes to a person's personal well-being and quality of life. It plays a major role in promoting and achieving health for the whole community as eye diseases affect humans of all ages and regions at some point in life. The estimated number of people visually impaired in the world is 285 million; 246 million having low vision and 39 million blind.¹ Furthermore, 90% of all blind individuals live in developing countries.² Awareness of common eye diseases and their treatment can play an important role in encouraging people to seek timely eye care and can therefore help in reducing the burden of visual impairment and other ocular diseases. As with almost all diseases, some are more prone to eye disease than others. Traffic Police personnel provide continuous service to the civilians. But at the same time, they put their health on stake coping with various kinds of risks and hazards that come with the job.

In Pakistan, there are a large number of people who belong to profession of policing the traffic with estimated 7 to 8 thousand only in Punjab (Sanctioned Strength of Punjab traffic wardens, as on 31st August 2009, was 6850)³. They have long working hours which exposes them to dust, traffic smoke and sun glare especially in developing countries where there is increased pollution and also in a zone where UV index is moderate to high (ranging from 5 to 7)⁴. The danger is further increased due to ozone depletion in our region (<220 Dobson Units, which is considered a very low count)⁴. Hence, this incessant exposure puts them at a high risk for various eye diseases with which they present in hospitals like pterygium, dry eye disease, allergic conjunctivitis, meibomian gland dysfunction and cataract. Hence, we carried out the following research to find the prevalence of eye diseases in wardens and the effect of preventive measures on it. The present study, to our knowledge, is the first epidemiological study related to eye health among any police personnel of Rawalpindi and Islamabad.

MATERIAL AND METHODS:

The design of this study was Descriptive Cross-sectional study and the study was conducted in Rawalpindi and Islamabad, Pakistan from 18 August 2016 to 18 October, 2016. Traffic wardens were given questionnaires to fill. Simple Frequency and Contrast Frequency was used to analyze the variables.

Any of the following eye symptoms complained of by warden: blurred vision, double vision, black spots in vision, tinted vision, burning of eyes, itching in eyes, itching around eyes, redness, photophobia, watering of eyes, foreign body sensation, swelling of eyelid, suppurative of eyelid. Our study was aimed to assess the association of eye diseases with environmental exposure faced by traffic wardens on the basis of general eye symptoms they had, to assess the effectiveness of preventive measures. Sample size of 50 wardens was taken. Sampling technique was random. The tool employed for data collection was self-constructed questionnaire in Urdu language which included both open-ended and closed-ended questions. There were three sections of the questionnaire: demographic, duty and health related, and prevention related. The questionnaires were distributed among the wardens willing to fill them. Pilot testing was also done. Statistical analysis was done using SPSS version 21. The variables were analyzed using Simple frequency and Contrast frequency. Significance level was fixed at $p < 0.10$ as the sample size was not large enough. The study was started after approval from Ethical Review Board, SZABMU. Verbal informed consent was taken from all subjects under study. The subjects were confidentially coded to maintain the confidentiality and anonymity of the persons taken as sample.

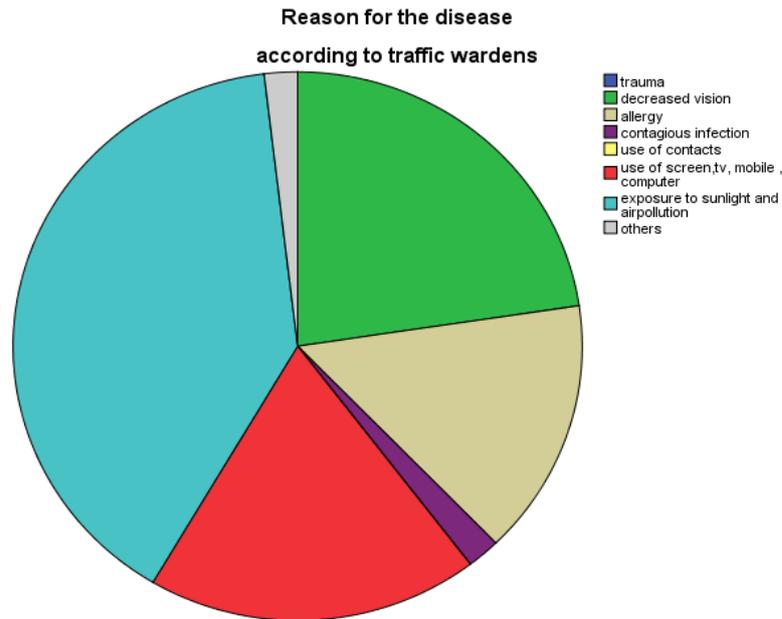
RESULTS:

Out of 50 wardens, 36 (72%) were found to suffer from eye problems, with 58% feeling symptoms for more than 1 month, 56% having problem in both eyes, and 30% feeling improvement in symptoms at night.

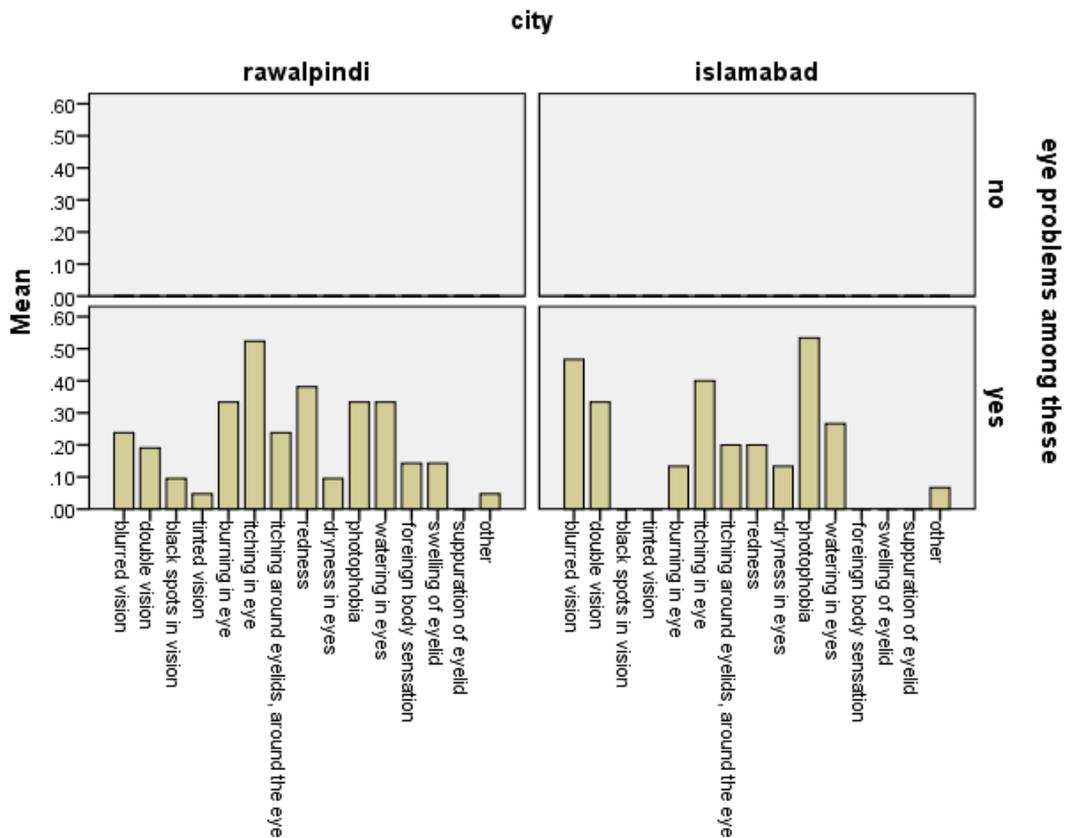
The Risk of Having Disease Was More in Those with More Duty of Service

Duration of Service	No. of Wardens with Symptoms of Eye Disease	Total no. of Wardens	Prevalence
less than 5 years	9	15	60%
less than 10 years but more than 5	25	33	75%
more than 10 years	2	2	100%

The P value calculated by Pearson Correlation for the above variables i.e. correlation of symptoms of eye disease with duration of service came out to be 0.080 (< 0.10). But at the same time, eye disease was more prevalent in young i.e. <40 years of age (78%) than old >40 years of age (65%). Also, about one third of wardens perceived that their eye problem is associated with their exposure during duty.



Prevalence of eye problems among Rawalpindi wardens was found out to be more (81%) compared to those in Islamabad (62.5%). P value for regional correlation of disease was calculated to be 0.078 i.e. (<0.10). Furthermore, most Rawalpindi wardens complained of itching in eyes whereas most Islamabad wardens complained of photophobia.



The attitude regarding preventive measures and its effect on prevalence of eye problems is summarized as follows:

Frequency of Use of Caps	No. of Wardens using Caps	Prevalence of Symptoms of Eye Disease
Never	10%	60%
Occasionally	20%	90%
Often	32.6%	75%
Continuously during Duty	36.7%	66.6%

Frequency of Use of Sunglasses	No. of Wardens using Sunglasses	Prevalence of Symptoms of Eye Disease
Never	40%	70%
Occasionally	36%	72%
Often	12%	83%
Continuously during Duty	12%	66.6%

The correlation of above preventive measures in reducing eye symptoms did not come out to be significant at all i.e. 0.313 and 0.446 for caps and sunglasses respectively. However, 56% of wardens did think that wearing sunglasses protects eyes. But 90% did not know what is meant by UV protection rating of the sunglasses. Apart from ocular symptoms, some diseases, that wardens complained of, were: Allergy (18%), Migraine (16%), Hypertension (14%), glaucoma (2%), Heart Disease (2%) and Hepatitis (2%).

DISCUSSION:

The study area, the Twin Cities, being the Capital and neighboring city, is a major region in all terms, of which, Police force is one. The Traffic police is in constant stress partly due to the nature of the job and partly because there is not much division of labour due to lack of junior posts like constable and head constable. Most of the wardens are working overtime (up to 12 hrs). In such circumstances, it is an easy choice to ignore health including eye health. Our study shows a weak evidence (<0.10) of correlation of the risk of eye diseases with the duration of service in job of traffic wardens especially in Rawalpindi but the low significance level can be attributed to less sample size as an undeniably high prevalence of symptoms of eye disease is seen in traffic wardens (72%). The correlation is in accordance with the fact that exposure to heat, blowing air, humidity as well as aerosols and combustion products alter biochemical composition and structure of tear film.² Papers published from 1997 to 2006 also indicate that exposure to medium-wave (280 to 320 nm) ultraviolet light (UVB) is associated with the development of cortical cataract.⁵ Chronicity and bilaterality of symptoms in most wardens suggests the same.

It is also indicated that young wardens have higher prevalence of eye disease, which rules out the error that could have been caused by presence of age-related eye diseases and shows that symptoms are due more to some other factor, probably prolonged exposure. The risk for wardens in Rawalpindi being greater than that in Islamabad and itching being the major complain also weighs in favor of an association with more exposure to air pollutants.

But the prevalence of eye disease does not seem to vary significantly among those who take preventive measures (caps and sunglasses) and those who do not, going against the second part of our hypotheses. It shows that either the preventive measures are not good enough or that they do not prevent eye disease in the first place.

Thus, our study turns out to be very important in a way because not only it highlights the high prevalence of ocular diseases in traffic wardens but also shows that the usual precautionary measures, taken by the wardens to prevent them, fail to do so. The poor awareness about UV protection rating of sunglasses may also partly contribute to the failure of effectiveness. It is of utmost importance to establish further evidence on the subject by a quasi experimental research, with greater sample size and control group to compare the results with. Any other precautionary measures employed by wardens were not asked about. Also there could be conscious falsification by subjects. The study can be applied to all of Pakistan as the study area involved the Capital where there is quota for all ethnic groups. Also, the study area takes into account a range of environment from less polluted to more pollute.

CONCLUSION:

High prevalence of eye disease among traffic wardens and little effectiveness of current preventive measures calls for more analytical research on usefulness of different safety measures as well as legislative reforms like inculcating safety measures in wardens' uniform, introducing a system of regular medical check-ups providing early treatment and health counselling for high-risk

groups, and reforms in the duty timings of traffic wardens and in division of labour to reduce the duration of exposure to hazards.

The wardens themselves are advised to take care of their general physical health and keep a check on their blood pressure and sugar levels, and visit a doctor to undergo eye examination once in a while.

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