

# Frequency of Ocular Diseases in the Prisoners of District Jail Lahore

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Purpose: To find the frequency of different ocular diseases in the prisoners of district jail, Lahore.

Study Design: Cross-sectional study

Place and Duration of Study: Health care unit within the vicinity of jail during 1st week of June 2014.

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Material and Methods: Total number of jail inmates was 3050. Two hundred and seventy individuals reported ocular problems who were examined by the visiting team. Complete eye examination was performed and data was collected. The patients with refractive errors were given spectacles and diseases manageable with eye drops were treated accordingly. Patients having glaucoma, cataract, retinal disorders of diabetes or hypertension were referred to Mayo Hospital for more detailed examination and free treatment. This activity was a joint venture of Social Welfare Department - Home Department Punjab, Administration of District Jail Lahore and College of Ophthalmology and Allied Vision Sciences, King Edward Medical University/Mayo Hospital Lahore. The jail inmates were the beneficiaries of this project and all medicines and spectacles were provided free of cost, funded by Sight Savers, Pakistan.

Results: There were 56.29% individuals who had normal vision (better than 6/12). 79% of inmates were more than 40 year of age. Conjunctivitis was seen in 3%, glaucoma in 1% and cataract in 2% of the individuals. There was 4.07% Myopia (n = 11), 3.33% Hypermetropia (n = 9), 2.22% Astigmatism (n = 6) and cases of Presbyopia were 34.07% (n = 92).

Conclusion: Screening jail inmates to prevent and control ocular diseases is essential to blindness in this community.

Key Words: Refractive Errors, Eye Health, Screening, Vision.

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**L**ife behind the bars is very hard because there are no privileges for the inmates of prison in a country like Pakistan. District Jail, established during British Era in 1930, situated on Ferozpur road, Lahore, is managed by the Government of Punjab. There is a dispensary for primary health care, a

medical store and a ward containing 30 beds. The Social Welfare Officer (SWO) of Social Welfare Department Punjab is responsible for the welfare activities of prisoners. In a country where systems are not much developed, role of SWO is vital especially for the socially marginalized people like prisoners.

Prison department with the support of SWO, therefore, provides a valuable opportunity to offer screening to inmate prisoners who have considerable unmet needs. Various social groups including prisoners remain outside healthcare system due to the social marginalization. In Pakistan, corporate sector or government health department is not so strong that all tasks could be managed by the government alone. This is the mutual responsibility of the state, social sector, NGOs and the community at large to strive and resolve health related tribulations through carefully designed health care programs.

On behalf of Jail Administration, the designated Social Welfare Officer (SWO) appointed in the jail requested College of Ophthalmology and Allied Vision Sciences (COAVS), King Edward Medical University/Mayo Hospital Lahore, to look into the matter of ophthalmic diseases and refractive errors in inmates. SWO was responsible for our complete protocols, responsibilities within the prison and he also helped in planning and executing this activity.

The purpose of the disease was to find the frequency of different ocular diseases in the prisoners of district jail, Lahore.

**MATERIAL AND METHODS**

The Social Welfare Officer of the District Jail Lahore (DJL) made a proposal for this activity and a letter was signed by him on behalf of the superintendent, District Jail Lahore. Principle/Director General, COAVS, King Edward Medical University/Mayo Hospital Lahore designated a full ophthalmic team on a formal letter for the activity. The jail administration was also informed about the time and date of this activity. We followed the jail protocol with all necessary security provided from the Jail administration. Whole of the activity was performed in the presence of medical staff and security staff of the Jail Hospital. To examine the individuals, they were called one by one in the examination room, which was declared ophthalmic consultation room on that day of activity. The prisoners were divided into groups containing 5 individuals each. For security purpose, each group was examined separately and then sent back to their

barracks. The other group was then called in for examination.

The total number of jail inmates was 3050, among those 270 individuals were selected by convenient sampling technique. All the prisoners with any ocular problem were included in the study. The individuals were examined by Ophthalmologist and Optometrist to evaluate the underlying cause of ocular problem and to decide about further management. The team had to manage referrals for any surgical or medical interventions and any further investigations for a complex case. This project also had the facility to provide spectacles to all the individuals receiving prescription for glasses. The team made arrangements for the early diagnosis of cataract, glaucoma, diabetic retinopathy, hypertensive retinopathy, bacterial and viral diseases along with the refractive Errors. The superficial corneal and conjunctival diseases were treated with antibiotic eye drops and ointments. Patients having glaucoma, cataract, retinal disorders of diabetes or hypertension were referred to Mayo Hospital for more detailed examination and free treatment of the patients. Glasses were delivered to the inmates through SWO within 2 weeks.

**RESULTS**

Fifty-eight prisoners out of 270 (21.48%) were between 30-40 years, 31.85% (n = 86) were of 41.50 years of age. 31.11% (n = 84) were placed in 51.60 years of age group and 15.55% (n = 42) were more than 60 years. Normal vision was seen in 56.29% (n = 152). Visual acuity (VA) of < 6/12 – 6/60 were found in 8.88% (n = 24). 0.74% (n = 2) of them were blind. 34.07% had problem for near vision. There was 4.07% Myopia (n = 11), 3.33% Hypermetropia (n = 9), 2.22% Astigmatism (n = 6) and cases of Presbyopia were 34.07% (n = 92). For details, see tables 1 to 4.

**Table 1:** Age wise Breakdown of the Prisoners.

S/N	Age Group	Total	Percentage
1.	30 - 40	58	21.48%
2.	41 - 50	86	31.85 %
3.	51 - 60	84	31.11 %
4.	> 60	42	15.55 %
	<b>Total</b>	<b>270</b>	<b>100%</b>

**Table 2:** Vision Status of the sample population.

S/N	Unaided Visual Acuity	Right Eye	Left Eye	Percentage
1.	Normal 6/6 - 6/12	152	152	56.29
2.	< 6/12 - 6/60	24	24	8.88
3.	< 6/60 - 3/60	2	2	0.74
4.	< N-6 (Near Vision Scale)	92	92	34.07
	<b>Total</b>	<b>270</b>	<b>270</b>	<b>100</b>

**Table 3:** Types of Refractive Errors.

Condition	Total	Percentage
Normal	152	56.29%
Myopia	11	4.07 %
Hypermetropia	9	3.33 %
Astigmatism	6	2.22%
<b>Sub Total</b>	<b>26</b>	
Presbyopia	92	34.07 %
<b>Total</b>	<b>270</b>	<b>100</b>

**Table 4:** Types of Ocular Disorders in the sample.

S/N	Disorder	Total	Percentage
1.	Refractive Errors	12	38.51 %
1a.	Presbyopia	92	
2.	Conjunctivitis	9	3.33 %
3.	Glaucoma	2	0.74%
4.	Cataract	6	2.22 %
5.	Eye injury	1	0.37 %
6.	Normal (with no Ocular pathology)	152	56.29 %
	<b>Total</b>	<b>270</b>	<b>100</b>

**DISCUSSION**

Life in prison is deprived of many basic needs. According to a study done in USA, data of 7500 inmates revealed that they faced severe stress and were victimized (sexual, physical, either, or both) during the life span in prison<sup>1</sup>. Along with other basic needs, health care facilities are also important for the prisoners. The quality of healthcare delivery within correctional settings such as prisons, jails and other detention facilities is vital and an issue of human rights concern too<sup>2</sup>. As the prison population continues to grow, there is more than ever a need to have regular and comprehensive eye examinations for these persons<sup>3</sup>. Brian R has suggested frequent eye examinations in the prisoners<sup>4</sup>. In Prison Administration Bureau of Jiangsu Province, Nanjing, China, efforts were done for the health training of male and female prisoners along with the health care facilities<sup>5</sup>.

In the last national survey of blindness conducted in 2004 in Pakistan, visual cut off point was same (6/12) as in this particular study. In Australia, 16% of adults of 40 years and above had myopia and 6% had hyperopia<sup>6</sup>. In another study of persons with age 40 years and above in Japan, the prevalence of myopia and hyperopia was 42% and 8% respectively<sup>7</sup>. In a population-based study at Singapore with people aged 40 years and above, prevalence of myopia was 31% and the prevalence of hyperopia was 27%<sup>8</sup>. Another research in a primary eye care setup, myopia was

15%<sup>9</sup>. Rapid Assessment of Refractive Error (RARE) protocol has shown prevalence of refractive error of 6.4% and prevalence of presbyopia 33%<sup>10</sup>. Both of these are similar to our values.

In a prison study in Nigeria, mean age was 32 years in which 492 prisoners were examined. Seventy percent had various eye disorders. Refractive error was the most common eye disorder. The most common ocular conditions were refractive error (35%), allergic conjunctivitis (15%), presbyopia (11%) and glaucoma (9%)<sup>11</sup>. In our study, 38% of total had some type of refractive error including presbyopia, 2% of them had cataract, 3% had conjunctivitis and 0.7% had glaucoma. In a severely poor and socially marginalized population (Cocco formers) in Ghana, refractive error was identified in 29%, cataract in 20%, glaucoma in 12% and conjunctivitis as high as 13%<sup>12</sup>. In another survey, prevalence of presbyopia was 63%<sup>13</sup>.

In Kenya 15% had at least one ocular morbidity and presbyopia was the leading cause with 25% of participants over 35 years<sup>14</sup>. It was similar to our results. A population-based study was conducted with 3000 people aged ≥ 40 years in weaving communities who were all illiterate. The prevalence of presbyopia was 62% and the prevalence of functional presbyopia was 35%<sup>15</sup>. In Northern Iran, prevalence of presbyopia was 58%<sup>16</sup>. Similarly, presbyopia was 31% among 1560 marine fishermen of India<sup>17</sup>. In a previous study conducted in Pakistan, prevalence of myopia, hypermetropia and astigmatism was 36.5%, 27.1%, and 37%, respectively<sup>18</sup>. Cataract is the largest cause of blindness worldwide<sup>19,20</sup>. The number of people blind from cataract in the world is increasing by approximately 1 million per year and the number of ‘operable’ cataract eyes with a visual acuity of less than 6/60 is increasing by 4–5 million per year. There were 6 cases of cataract in our study who were referred for management.

Keeping in view the status of ocular diseases in District Jail, Lahore, visit of Ophthalmologist or Optometrist should be planned twice a year and proper referral chain for refractive errors, cataract, glaucoma, epidemic eye diseases, diabetic retinopathy, and hypertensive retinopathy is suggested for prevention of the eye problems in jail inmates. Although round the clock dispensary with medical staff and other facilities are available in every jail but there should be proper and comprehensive eye care training for the medical staff for screening of eye diseases and vision problems.

## CONCLUSION

This activity is a very good example to work for the betterment of jail inmates to control ocular diseases and to prevent this under-privileged class from blindness.

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