



A study on socio demographic profile of patients attending government hospital tirupati with mechanical ocular injuries

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Abstract:

The role of ocular injuries in causation of blindness has been a subject of immense importance and will remain so because of the rapid industrialization and mechanized farming which is coining up in our country. Cross-sectional observational study. Patients attending the outpatient Department of Ophthalmology, SVRRGG Hospital, Tirupathi with a history of Ocular Trauma. A total of 187 patients with mechanical eye injuries have been enrolled. In the present study, 73.8% were male and 26.2% were female. 56.1% belonged to 15-45 year age group. In both male (56.5%) and female (55.1%) maximum number of ocular injury cases were from 15-45 year age group. 70.1% were from urban area and 29.9% were from rural area.

Key words: Mechanical ocular injuries, SES, Tirupati, Urban

Introduction:

Sense of vision, the choicest gift from the Almighty to the humans and other animals, is a complex function of the eyes. Mechanical trauma of the eye can result in serious morphological and functional impact on eye structures [1]. Ocular trauma is a common cause of monocular visual impairment and blindness worldwide, with significant socioeconomic impact [2]. As many as half a million people in the world are blind as a result of ocular injuries [3]. One third to 40% of monocular blindness may be related to ocular trauma [4, 5]. Worldwide interest in ocular trauma is growing since effective techniques for prevention and treatment are currently available [6].

The role of ocular injuries in causation of blindness has been a subject of immense importance and will remain so because of the rapid industrialization and mechanized farming which is coining up in our country. A total Incidence of about 1.43% and 2.7% of ocular injuries attending general Ophthalmic outpatient had been noted in various studies in India [7, 8]. The overall age and gender adjusted prevalence of history of eye injury in rural population of Andhra Pradesh was noted as 7.5% by Andhra Pradesh Eye Disease Study [9]. The incidence of mechanical injury was 92% as compared to chemical and thermal injuries which constituted only 8% [8]. Total blindness (person with less than 6/60 vision

underdeveloped countries, as well as in rural areas, they are most frequently caused by wood [10], by branch or thorn, while in industrially developed countries they most frequently occur at place of work, sport grounds, or during recreation [11]. Children are injured more at home or while playing, with blunt or sharp objects [12]. Although nowadays we do have powerful drugs and microsurgery reached unimagined limits, prognosis for serious eye injuries is still poor, in general [13]. Eye injuries request long-lasting care, including hospital treatment, a long period of conservative medication, with a possibility of one or repeated surgeries [14]. In many studies, particularly in those dealing with epidemiology of eye injuries, the full attention has been given to preventive measures [9, 14].

Material and Methods

Hospital based cross-sectional observational study conducted in the Department of Ophthalmology, SVRRGGH, Tirupati from September 2010 to September 2012. **Source of Data:** Patients attending the outpatient Department of Ophthalmology, SVRRGG Hospital, Tirupati with a history of Ocular Trauma. A total of 187 patients with mechanical eye injuries have been enrolled in this study taking into consideration of both inclusion and exclusion criteria. Inclusion criteria:

Cases of ocular injuries due to mechanical trauma, willingness to participate in the study. Exclusion criteria: Superficial foreign bodies which needed out patient care where excluded from study, chemical injuries, thermal, radiational, electrical, barometric injuries are excluded from study and patients who were not willing to participate in the study. **Method of collection of data:** A proforma was designed based on the objectives. The proforma was pre-tested and modified. Ethical Committee approval from Institutional Ethics Committee, S.V.Medical College, Tirupathi was taken. Written consent was taken from the enrolled patients. The study subjects were interviewed in outpatient Department of Ophthalmology, SVRRGGH, Tirupathi. The data base was entered in Microsoft Office Excel 2007 and analysis was performed using EPI INFO 3.5.1. Appropriate descriptive statistics (percentages and mean) were used to analyse the findings and draw inferences.

Results

Table 1: Distribution of injured patients according to their age group (n=187)

Age group (years)	Frequency	Percentage
<15	29	15.5
15-45	105	56.1
45-60	40	21.4
≥60	13	7.0
Total	187	100

A total of 187 patients were enrolled in the present study. Out of them 105 (56.1%) were in the age group of 15-45 years followed by 45-60 years age group- 40 (21.4%). This can be attributed to the fact that they are more active in this age group and hence are more vulnerable for ocular injury. In the total study population of 187 patients, the mean age was 35.07 years (median of 34 years, ranging from 3 years to 80 years). (Table 1)

A total of 187 patients were enrolled in the present study. Out of them 49 (26.2%) were females and 138 (73.8%) were males. Of the total males in this study 56.5% were in the age group of 15-45 years and 22.5% were in the age group of 45-60years. Of the total females

in this study 55.1% were in the age group of 15-45 years and 18.4% were in the age group of 45-60years. In the present study males outnumber the females in the occurrence of ocular injuries. This is because of the preponderance of males in active work both in agriculture and industry. Chi square=0.787 with 3 d.f, p=1.0. Hence there is no significant association between age group and sex in relation to occurrence of ocular injuries. (Figure 1)

Figure 1: Distribution of ocular injured patients according to their age group and gender (n=187)

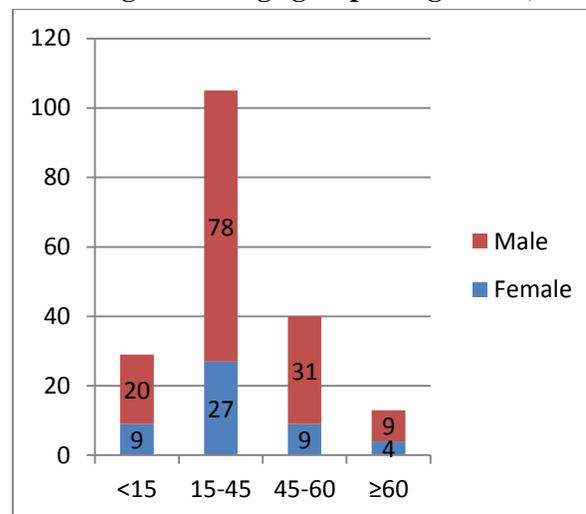
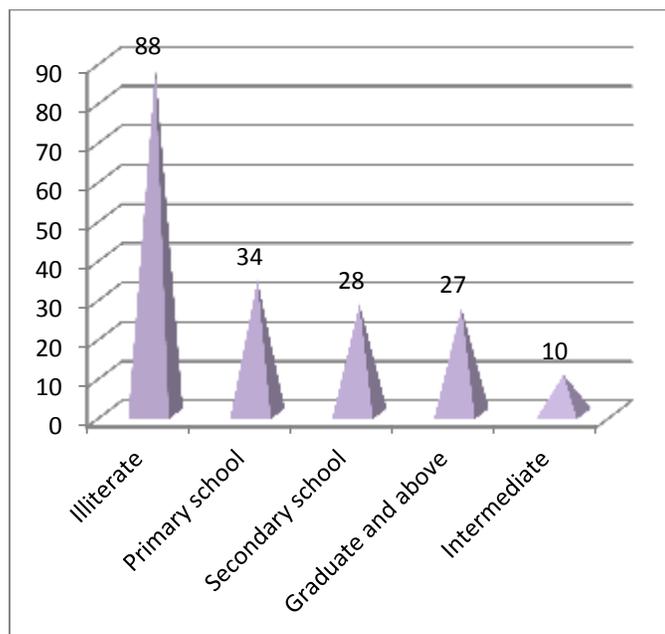


Table 2: Distribution of ocular injured patients according to their locality (n=187)

Locality	Number of cases	Percentage
Rural	131	70.1%
Urban	56	29.9%
Total	187	100%

Of the enrolled patients, 70.1% were from urban area and 29.9% were from rural area. (Table 2) A total of 187 patients were enrolled in the present study, of them 47.1% were illiterates, followed by primary school-18.2%. (Figure 2) A total of 187 patients were enrolled in the present study. Out of them 44.4% were farmers, followed by students-20.9%. (Table 3)

The per capita income of 64.7% of enrolled patients were between Rs500-Rs1400, followed by 23.5% of enrolled patients were between Rs1500-Rs2999. (Table 4)

Figure 2: Distribution of ocular injured patients according to their educational qualification (n=187)**Table 3: Distribution of ocular injured patients according to their occupation (n=187)**

Occupation	Frequency	Percent
Farmer	83	44.4
Student	39	20.9
House wife	15	8.0
Unemployed	11	5.9
Labourer	7	3.7
Children	6	3.2
Welder	5	2.7
Electrician	5	2.7
Carpenter	4	2.1
Manson	4	2.1
Driver	3	1.6
Mechanic	3	1.6
Stone cutter	2	1.1
Total	187	100.0

Table 4: Distribution of ocular injured patients according to their per capita income (n=187)

Income in Rupees	Frequency	Percent
Rs500-Rs1499	121	64.7
Rs1500-Rs2999	44	23.5
Below Rs500	13	7
Rs3000-Rs4999	8	4.3
Rs5000-Rs9999	1	0.5
Rs10,000 and Above	0	0
Total	187	100.0

Table 5: Distribution of ocular injured patients according to Socio Economic Status (n=187)

Socio Economic Status	Frequency	Percent
Poor	121	64.7
Lower middle	44	23.5
Very poor or Below Poverty Line	13	7
Upper middle	8	4.3
High	1	0.5
Total	187	100.0

Prasads classification is used to classify Socio Economic Status. The Socio Economic Status of 64.7% of enrolled patients were poor, followed by 23.5% of enrolled patients were from lower middleclass. (Table 5)

Of the injuries occurred in enrolled patients 49.2% of ocular injuries had left eye injury, 2.7% had both eyes involvement and 48.1% had right eye injury. (Table 6)

Table 6: Distribution of ocular injured patients according to their eye involvement (n=187)

Eye involvement	Frequency	Percent
Left eye only	92	49.7
Right eye only	90	48.1
Both eyes	5	2.7
Total	187	100.0

Discussion

The current study is a cross sectional observational study which included 187 cases with a history of mechanical trauma to the eye from September 2010 to September 2012. Baseline data from patients was collected and clinical examination of eye was done.

Age and Sex: In the present study 56.1% of the enrolled patients were in the age group of 15-45 years, 21.4% were in the age group of 45-60 years, 15.5% were below 15 year age group and 7.0% were above 60 year age group. Among the enrolled patients 73.8% were males and 26.2% were females. Mean age was 35.07 years.

The findings were similar more or less with other studies done in relation to age and sex.

Study	Male	Female	15-45 year age group	<15 year age group
Jovanovic et al [15]	83.6%	16.4%	44.05%	18.51%
Singh et al [16]	88.5%	11.5%	55.9%	33.5%
Krishniah et al [9]	61.16%	38.84%	64.56%	6.06%
Present study	73.8%	26.2%	56.1%	15.5%

Grown up men are more frequently exposed to eye injuries at work, in traffic, during recreation and fight. Ocular trauma seems to be more prevalent in the productive age group of 15-45 years. These groups should be focused and made aware of the ocular trauma, its consequences and measures for prevention and early visit to eye care centre.

Locality:

Of the enrolled patients, 70.1% were from urban area and 29.9% were from rural area. The study done by Singh et al [16] was in Delhi, hence the percentage of urban patients are more than rural. In the present study the higher proportion of ocular trauma in rural area is due to the population that is being served by SVRRGH, Tirupathi.

Study	Rural	Urban
Singh et al [16]	36.9%	63.1%
Present study	70.1%	29.9%

Resources should be mobilized to provide quality ocular emergency care to our rural population with emphasis on immediate attention to any ocular trauma.

Literacy status:

Of the enrolled patients 47.1% were illiterates, followed by Primary school-18.2%, Secondary school-15.0%, Graduate and above-14.4% and Intermediate-15%.

Study	Illiterate	Primary & Secondary	Intermediate	Graduate and above
Singh et al [16]	23.7%	24.9%	29.6%	21.6%
Present study	47.1%	33.2%	15%	14.4%

Occupation:

Of the enrolled patients 44.4% were farmers, followed by students-20.9%. The findings were similar more or less with other studies done in India. The study done by Singh et al [16] was in Delhi, hence the percentage of farmers were less when compared to our study.

Study	Farmers	Students	House wife	Mechanic
Singh et al [16]	8.9%	38.2%	8.9%	1.1%
Present study	44.4%	20.9%	8%	1.6%

The most common setting where the ocular trauma occurred was during agricultural labour. ⁽⁹⁾ Amongst the occupational injuries 46.56% are agricultural origin. ⁽³⁰⁾

Socio Economic Status:

Prasad's classification is used to classify Socio Economic Status. The Socio Economic Status of 64.7% of enrolled patients were poor, followed by 23.5% of enrolled patients were from lower middleclass. The findings were similar more or less with other studies done in India.

Study	Poor	Lower middle	Upper middle	Very poor
Singh et al [16]	44.4%	49.5%	5.9%	Nil
Krishniah et al [9]	54.61%	29.61%	Nil	13.84%
Present study	64.7%	23.5%	4.3%	7%

Eye involvement:

Of the injuries occurred in enrolled patients 49.2% of ocular injuries had left eye injury, 2.7% had both eyes involvement and 48.1% had right eye injury. The findings were similar more or less with other studies.

Study	left eye	right eye	both eyes
Jovanovic et al [15]	49.5%	50.5%	1.4%
Singh et al [16]	46.8%	50.1%	3.1%
Present study	49.2%	48.1%	2.7%

Conclusion

It is clear from this study as well as other epidemiological studies conducted over past 15 years, that ocular trauma is associated with varying degrees of loss of vision and earning capacity with social and economic consequences. This is an area for further research additional investigation is also needed to develop and evaluate new interventions for prevention

and management of all types of eye injuries. Inter disciplinary approaches and community based strategies will be important to make progress in this area of study to save and salvage vision.

Recommendations

Awareness on the use of the use of ocular protection and of the possible benefits for eyes from

using such protection has to be increased. Electronic and mass media should be used to disseminate ocular trauma related information. A targeted approach focusing on productive ages and males also may be required in addition to the general approach to health promotion. Additionally, advocacy is required for policy level changes that may mandate the use of such eye protection. Prevention is possible at any age, any place and in all activities mentioned. It might be concluded also that prevention is necessary and that it should be our major task in future.

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