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Research Article

**A CROSS-SECTIONAL RESEARCH TO ASSESS THE  
PATTERN AND FREQUENCY OF OCULAR EMERGENCY THE  
TRAUMATIC AND NON-TRAUMATIC PATIENTS**<sup>1</sup>Shazia Shabbar, <sup>2</sup>Dr.Safar Ali Shah, <sup>3</sup>Dr. Usman Manzoor<sup>1</sup>Rawalpindi Medical College, Rawalpindi, Pakistan.<sup>2</sup>Pathology Department Hayathabad Medical Complex Peshawar<sup>3</sup>Dental Surgeon, Nishter Institute of Dentistry**Abstract:**

**Objectives:** The purpose of the study is to conclude the periodicity along with the structure of the ocular state displayed to the ophthalmic disaster in the hospital.

**Methodology:** We carried out this cross-sectional research at Sir Ganga Ram Hospital, Lahore (January – November 2017). The number of patients enrolled for the study is 960 affected with visual infection by the accidental way and outpatients. The questionnaire served the purpose of recording victim statistical information, thorough background, and final report. Either age group, gender, ocular characteristics, and analysis are basic factors for statistical data.

**Results:** Among the 960 participants in the study, the number of women was four hundred five (42.2%) along with five hundred fifty-five men (57.8%). We divide the entire patients into two groups (Group A =Traumatic & Group B = Non-traumatic). The number of patients in Group A as well as in Group "B" are 536 (55.8%) and 424 (44.2%) respectively. The dominant reasons in group B are, the percentage of corneal ulcer is 10.10%, acute uveitis 2.6%, retinal vascular disease 1.2% and acute glaucoma 1% etc. However, in Group "A" Ninety-four percent of victims are safe from any other kind of infection whereas infectious patient's percentage Group "B" is just six percent. The percentage of the globe, as well as additional globe infection in those patients who are not affected, are 44.6% with additional globe and globe infection percentages are 23.8 & 23 respectively. The mechanical damages to eyes at working locations are the most general damages of ocular emergency with 70.7%.

**Conclusion:** The general optical accidents were acute uveitis and glaucoma, infective keratitis and conjunctivitis. Women especially average age housewives had general optical emergencies. Accidents concerning to eyes generally registered were globe infection along with additional globe and uncovered globe wounds. Men usually middle age working staff had a general optical accident. Wounds due to mechanics are especially outcomes of occupational disaster in staff.

**Keywords:** Non-traumatic, Globe Injuries, Ocular trauma.

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**INTRODUCTION:**

The accidents of eyes are the main reasons for morbidity. Universally (1% to 6%) of optical problem cases are diverted to accidents departments [1] Yearly greater than 0.2 billion cases of optical issues and in the USA approximately sixty-five thousand injuries are reported in the department of accident care [2, 3]. Almost in ½ of infections, men affected with 2/3 of them. Nearly three percent of the cases need admission otherwise most of the cases are of smaller issues just as corneal abrasion and conjunctivitis etc. [3].

Vision loss is the major reason for avoidable monocular blindness. Universally 23 lakh patients of myopia as well as 16 lakh visionless patients affected by optical injury yearly [4]. Almost 20 lakhs visual infection in the USA happened every year by optical damages [5]. Record of patients hospitalized in Pakistan display that (9.54%) of eyes related hospitalization is because of eyes infection [6]. In developing states, the percentage of blindness due to eyes injuries is five percent [7]. Loss of eyesight has prolonged side effects on victims' entire life and considered as an extra load on health resources of the public particularly while occurred in childhood [8].

Non-accidental infections such as optic neuritis, glaucoma, infective keratitis, are also of huge significance and results of infections completely changed if the case treated timely [9]. However, data about non-accidental infections is too short despite this it is a significant factor of patients report in hospital accident branch in Pakistan.

**METHODOLOGY:**

We carried out this cross-sectional research at Sir Ganga Ram Hospital, Lahore (January – November 2017). Both gender of any age and were suffering from the optical issue are registered. Newborn babies and all those victims who are suffering from normal eye disease just like eyes allergies, primary open angle glaucoma, senseless, badly injured were not included in the study. Written approval confirmed from victim's parents in child reference for utilizing their information.

Statistical data along with information on gender, age, and occupation. A thorough background of the victim including victim status, the reason of referral, the status of work at the time of the accident and earlier visual problem observed, however, the sufferer treated through the absolute process. Two groups as physical and nonphysical injury groups that categorized in addition to the subgroups.

In infection state, examination in an adolescent treated through anaesthesia at a suitable time. After wrapping the victim in cloth briefed checkup performed with Torchlight as well as ophthalmoscope by giving drops of anaesthesia if children are not ready for anaesthesia general type. If the patient faces issues with acid as well as caustic, washing was an immediate action afterwards victim was thoroughly examining for injury. After first aid treatment and stability of the mechanically affected patient, assessment of victim performed through torch or lamp.

Computerized X rays taken if any type of suspected optical fracture analysis completed. All patients are examining one by one for appropriate administration and then treatment started. SPSS software was data entry and analysis tools in this research.

**RESULTS:**

We divide the entire 960 patients of our research into two groups (Group A =Traumatic & Group B = Non-traumatic). The number of patients in Group A as well as in Group "B" are 536 (55.8%) and 424 (44.2%) respectively. Group "A" are additionally categorized into subgroups named as traumatic physical and traumatic nonphysical injury group. Traumatic physical, as well as non-traumatic physical subgroups, are divided into little groups.

A total number of women which were registered are 405 (42.2%) along with 555 men (57.8%). Group "B" number of men and women are 142 (33.4%) and 282 (31.8%) respectively. About 31.8% of victims were forty to sixty years of age. In group "A" the numbers of men were 413 (77%) as well as women are 123 (23%). Among them, (39.8%) sufferer was in between eleven to forty years of age. It declares that victims group "A" were young enough. Group "B" the number of housewives was 267 (63%) along with seventy-three (17.2%) working women's in fields. As well as group "A" number of workers were 147 (27.4%) along with 91 (17%) housewives. Gender and professional division group "A".

A number of the general infective optical state was corneal ulcer is 10.10%, noxious conjunctivitis 62.2%, stye 12.6%. The number of patients affected after the operation was 11 (1.1% of total cases). Ten patients (90.9%) declared Endophthalmitis and one case of infection after chalazion surgery was registered. The percentage of Acute ocular inflammation was (2.7%) of entire cases among them (2.6%) & (1%) was uveitis and optic neuritis cases respectively. Acute glaucoma along with retinal vascular diagnosed in ten and twelve cases

respectively.

The total number of cases affected with physical optical injury was 536 (55.8%) including physical and not physical injuries subgroups was thirty-one and five hundred five respectively. In physical optical injuries subgroups seventeen (54.8%) were endophthalmitis cases, 8 (25.8%) corneal ulcer as well as 6 (19.4%) cases of pre-septal cellulitis. In a physical group of non-infection (44.65) were affected with universal as well as adnexal damages, however, mechanically affected cases percentage were (75.6%) along with twenty-three burning cases due to acid. Additional universal damages recorded percentage was (23.8%), eyelid was general most damage in

additional universal damages. Damages of the globe were recorded in (23%) of cases along with mechanical open globe injuries were (39.7%) and mechanical close globe injuries in (30.2%) cases. Head-eye and neck areas damage considered as critical injuries and the percentage was recorded (8.7%) of entire physical injuries. Critical trauma because of tools/machinery is in (47.7%) cases. Work location is the main factor of eyes injuries after eyes injuries due to accidents. The absence of sufficient protective measures at job locations, in playgrounds, the absence of eye care facilities, neglecting in time treatment, as well as self-medication, are significant causes.

**Table – I: Age and Gender Distribution**

Group	Age in Years	Male		Female		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
Non-Traumatic	1 to 10	6	54.55	5	45.45	11	1.10
	11 to 20	0	0.00	10	100.00	10	1.00
	21 to 30	0	0.00	65	100.00	65	6.80
	31 to 40	0	0.00	11	100.00	11	1.10
	41 to 50	0	0.00	143	100.00	143	14.90
	51 to 60	114	70.37	48	29.63	162	16.90
	61 to 70	14	100.00	0	0.00	14	1.50
	Above 71	8	100.00	0	0.00	8	0.80
	<b>Total</b>	<b>142</b>	<b>33.49</b>	<b>282</b>	<b>66.51</b>	<b>424</b>	<b>44.20</b>
Traumatic	1 to 10	23	76.67	7	23.33	30	3.10
	11 to 20	79	77.45	23	22.55	102	10.60
	21 to 30	102	69.39	45	30.61	147	15.30
	31 to 40	94	70.68	39	29.32	133	13.90
	41 to 50	53	92.98	4	7.02	57	5.90
	51 to 60	39	88.64	5	11.36	44	4.60
	61 to 70	16	100.00	0	0.00	16	1.70
	Above 71	7	100.00	0	0.00	7	0.70
	<b>Total</b>	<b>413</b>	<b>77.05</b>	<b>123</b>	<b>22.95</b>	<b>536</b>	<b>55.80</b>

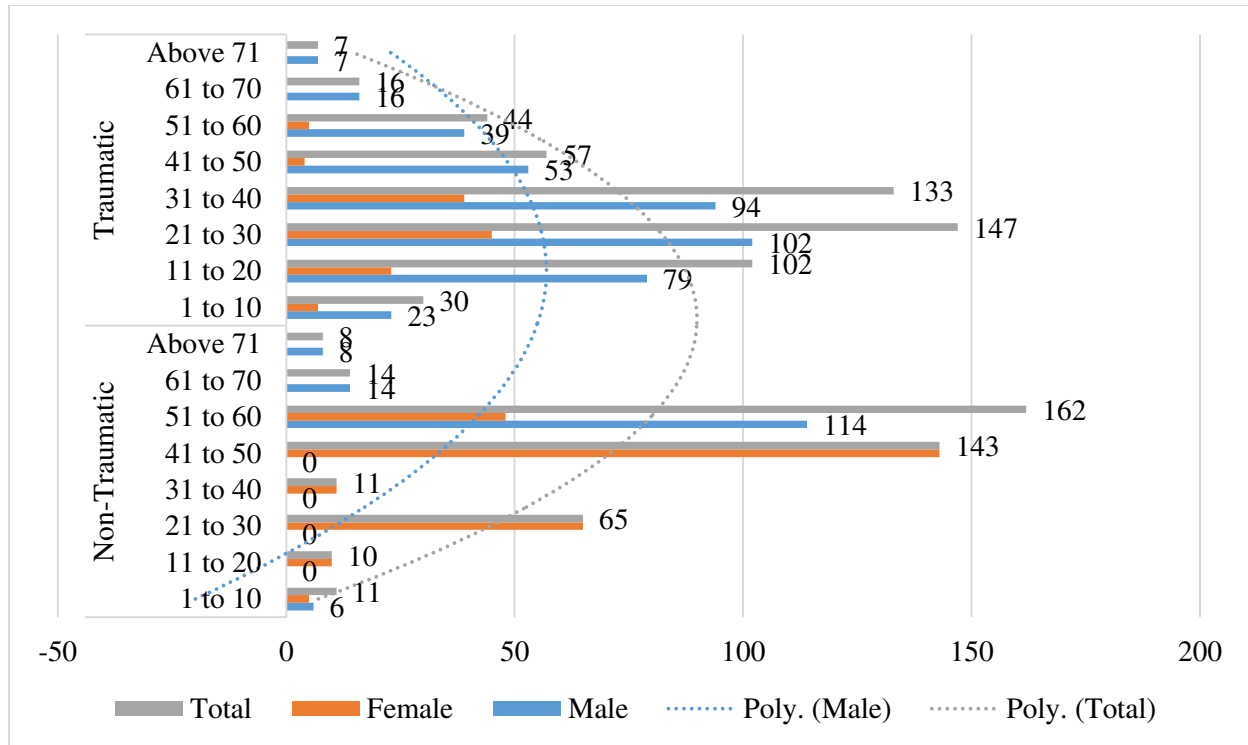


Table – II: Gender and Occupation Distribution

Group	Occupation	Male		Female		Total	
		Number	Percentage	Number	Percentage	Number	Percentage
Non-traumatic	Pre school	6	54.55	5	45.45	11	2.60
	Student	0	0.00	10	100.00	10	2.40
	Housewife	0	0.00	267	100.00	267	63.00
	Farmer	73	100.00	0	0.00	73	17.20
	Driver	27	100.00	0	0.00	27	6.40
	Businessman	13	100.00	0	0.00	13	3.10
	Jobless	23	100.00	0	0.00	23	5.40
	<b>Total</b>	<b>142</b>	<b>33.49</b>	<b>282</b>	<b>66.51</b>	<b>424</b>	<b>100.00</b>
Traumatic	Pre school	16	69.57	7	30.43	23	4.30
	Student	55	80.88	13	19.12	68	12.70
	Housewife	0	0.00	91	100.00	91	17.00
	Worker	135	91.84	12	8.16	147	27.40
	Farmer	77	100.00	0	0.00	77	14.40
	Welder	42	100.00	0	0.00	42	7.80
	Driver	22	100.00	0	0.00	22	4.10
	Businessman	20	100.00	0	0.00	20	3.70
	Jobless	46	100.00	0	0.00	46	8.60
	<b>Total</b>	<b>413</b>	<b>77.05</b>	<b>123</b>	<b>22.95</b>	<b>536</b>	<b>100.00</b>

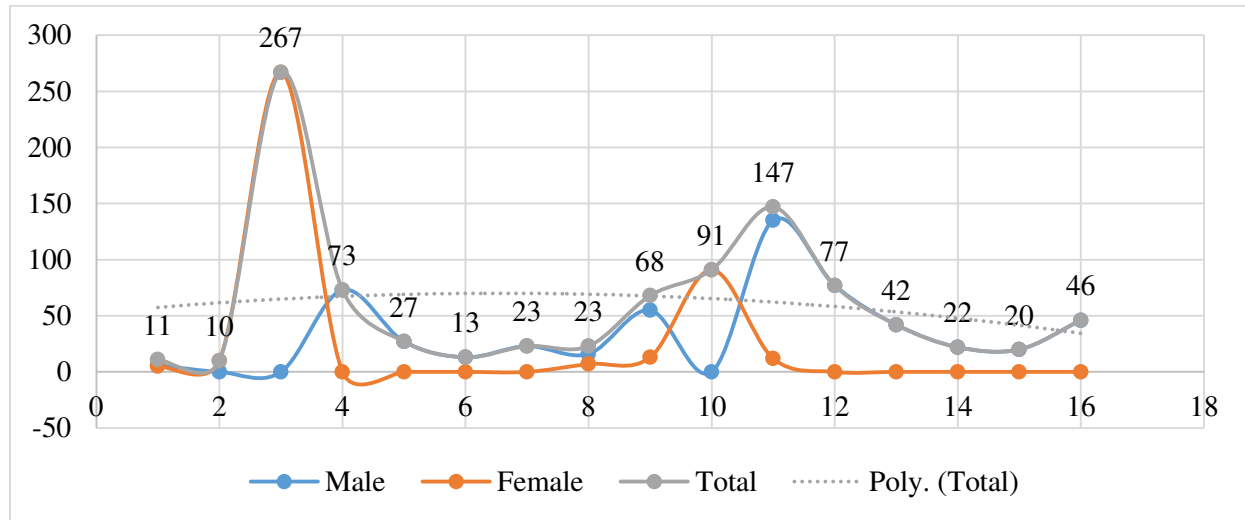


Table – III: Referral Cause and Gender Distribution

Group	Cause of Referral	Male		Female		Total		
		No	%	No	%	No	%	
Non-Traumatic	Trauma	Globe Injury	82	70.69	34	29.31	116	12.10
		Extra globe Injury	87	72.50	33	27.50	120	12.50
		Both globe and extra globe Injury	185	82.22	40	17.78	225	23.40
		Complex Injury	38	86.36	6	13.64	44	4.50
	Traumatic Eye Infection	Endophthalmitis	12	70.59	5	29.41	17	1.70
		Corneal ulcer	5	62.50	3	37.50	8	0.80
		Pre-septal cellulitis	4	66.67	2	33.33	6	0.60
Traumatic	Eye Infection	Acute Dacryocystitis	0	0.00	21	100.00	21	2.20
		Stye	6	13.04	40	86.96	46	4.80
		Acute hardeolum	0	0.00	30	100.00	30	3.10
		Pre-Septal cellulitis	0	0.00	4	100.00	4	0.40
		Infective Conjunctivitis	111	48.90	116	51.10	227	23.60
		Corneal ulcer	14	37.84	23	62.16	37	3.80
	Post-Surgical Infection	Endophthalmitis	3	30.00	7	70.00	10	1.00
		Acute hardeolum	0	0.00	1	100.00	1	0.10
	Inflammation	Uveitis	0	0.00	25	100.00	25	2.60
		Optic neuritis	0	0.00	1	100.00	1	0.10
	Acute Glaucoma	Lens induced	3	60.00	2	40.00	5	0.50
		Acuteangle closure	0	0.00	2	100.00	2	0.20
		Neovascular	1	33.33	2	66.67	3	0.30
	Retinal Vascular Disease	BRVO	2	28.57	5	71.43	7	0.70
		CRVO	1	33.33	2	66.67	3	0.30
		CRAO	1	50.00	1	50.00	2	0.20

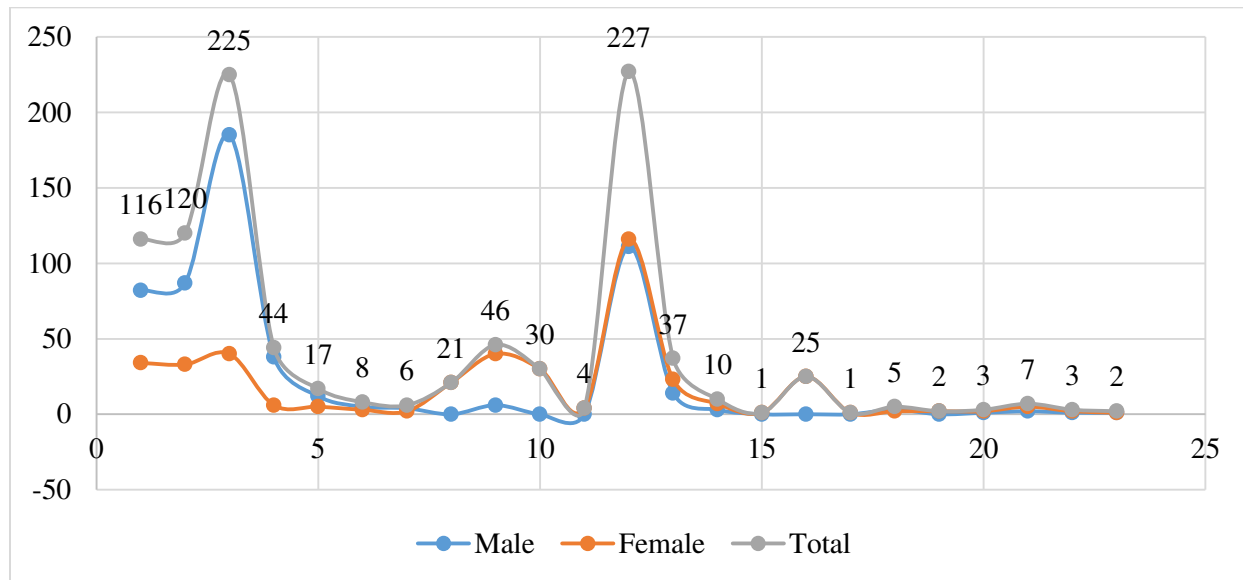
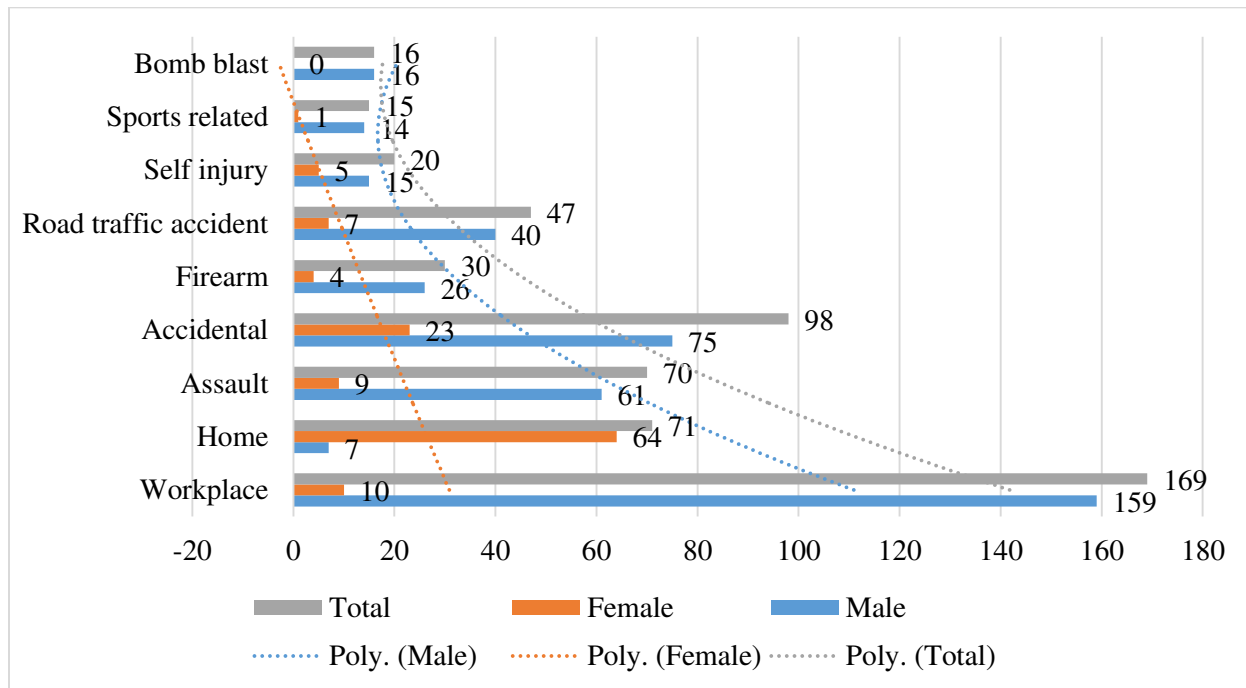


Table – IV: Traumatic Injury to Structures other than Globe

Extent of Injury	Structures Injured	Globe	Both Globe and Extra globe	Extra Globe					Complex	Total
		Globe	Globe + Adnexa	Orbit	Eyelid	Lacrimal System	Extra-Ocular Muscle	Extraocular Tissue	Globe + Maxillofacial	
Mechanical	No	81	170	5	47	6	3	16	21	349
	%	69.83	75.56	100.00	63.51	85.71	100.00	51.61	47.73	69.11
Thermal	No	8	15	0	6	1	0	3	8	41
	%	6.90	6.67	0.00	8.11	14.29	0.00	9.68	18.18	8.12
Acid	No	4	23	0	11	0	0	7	9	54
	%	3.45	10.22	0.00	14.86	0.00	0.00	22.58	20.45	10.69
Alkali	No	8	17	0	7	0	0	3	6	41
	%	6.90	7.56	0.00	9.46	0.00	0.00	9.68	13.64	8.12
Superglue	No	15	0	0	3	0	0	2	0	20
	%	12.93	0.00	0.00	4.05	0.00	0.00	6.45	0.00	3.96
Total	No	116	225	5	74	7	3	31	44	505
	%	22.90	44.50	0.90	14.60	1.30	0.60	6.10	8.70	100.00

Table – V: Gender Distribution and Placenta of Trauma

Cause of Trauma	Male		Female		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Workplace	159	94.08	10	5.92	169	31.5
Home	7	9.86	64	90.14	71	13.2
Assault	61	87.14	9	12.86	70	13.1
Accidental	75	76.53	23	23.47	98	18.3
Firearm	26	86.67	4	13.33	30	5.6
Road traffic accident	40	85.11	7	14.89	47	8.8
Self-injury	15	75.00	5	25.00	20	3.7
Sports related	14	93.33	1	6.67	15	2.8
Bomb blast	16	100.00	0	0.00	16	3
<b>Total</b>	<b>413</b>	<b>77.05</b>	<b>123</b>	<b>22.95</b>	<b>536</b>	<b>100</b>



### DISCUSSION:

The eye specialists are bearing additional burden of several optical issues among which accidents regarding eyes have a major part. In a group of nonphysical optical injury more than (71.9%) of cases are above forty years of age. That is the reality that peoples of older age greatly affected by these diseases. Our research findings are identical with the Iqbal and Qayyum *et al* findings [10, 11]. In our study, the women ratio is 66.5% against with Jafari, Iqbal and Qayyum *et al* study who presented women ratio as (44%, 33.4%, 34.8%) respectively [10, 11,

14]. Sixty-three percent of women are housewives. The number of patients affected with general eyes related accidental injuries is two hundred twenty-seven (62.2%), along with forty-six (12.6%) stye and thirty-seven cases of corneal ulcer. Our that result is against Iqbal and Qayyum *et al* outcomes who presented as (39.8% & 35%) patients of corneal ulcer respectively [10, 11].

In United State of America and India cases of corneal ulcer are 11 and 113 respectively out of 0.1 million peoples yearly [12, 13]. The general factor of optical intensification in our research is Uveitis declared in

25 (2.6%) patients, twelve (1.2%) patients are diagnosed Vascular disease along with acute glaucoma in ten (1%) patients against the finding of Qayyom and Iqbal et al who presented acute glaucoma in 234 (27%) and 344 (23.3%) along with Uveitis in both forty-three cases respectively as well as Jafari et al represented two (0.4%) cases of Uveitis and forty-two (3.5%) cases vascular disease [10, 11, 14]. According to the presentation of our research eleven cases diagnosed after surgery endophthalmitis which is against Jafari, Qayoom, and Iqbal et al findings who declared (3.1%, 12% & 10%) respectively. In eyes accident injury group, a number of cases having age 11 to 40 are 382 whereas Jahangir and Iqbal et al displayed (55% & 58.2%) patients having age between (18 to 45) and (below 20) years respectively. [10, 15].

Entire men cases in our research are 413 (77%) among which 169 (31.5%) cases got an injury on working location and machine/tool injuries reported are 379 cases (70.7%) including 309 (84.2%) men and women 60 (15.8%) respectively. This is an adjustment with Jahangir et al who displayed (75.6%) men cases, as well as mechanical injuries, presented cases are 1630 (84.4%) among which 437 men and 193 women [14, 16]. These outcomes presented that men are at greater hazard of optical injuries.

Above mention, research presented that fifty-nine cases were diagnosed open globe injury out of (43.1%) of total cases. Our that result is against Iqbal and Jahangir et al along with Singapore conducted study presentation who presented OGI in (71.6%, 57% and 5%) of cases respectively [10, 16]. Total chemicals burn cases are ninety-six (17.9%) among them fifty-five (57.3%) and forty-one (42.7%) are acid and alkali burn cases respectively. This is an adjustment with Jahangir, Iqbal and Jafari et al who displayed six cases (6%), (3.5%) and (8%) respectively [10, 14, 15]. Among total 41 (7.46%) thermal burn cases the percentage of men and women are (56.1% & 43.9%) respectively whereas Jafari, Jahangir and Iqbal et al presented (2.2%, 9% & 3.5%) respectively [10, 14, 15].

Superglue injury is also considering as critical optical injury. All of 20 (3.7%) superglue cases, number of men, women cases affected are eleven (5.5%), and nine cases (4.5%) respectively. Superglue injury published cases are 53 and caused by accident [18]. In total twenty-seven endophthalmitis cases (2.8%) number of post and post-op endophthalmitis are seventeen (63%) and ten cases (37%) respectively and same presented by Iqbal and Jafari et al are (10.7% and 3.1%) respectively [10, 14]. It is

presented that endophthalmitis related to wound has a bad diagnosis as compared to related with cataract abstraction [19 20]. It presents that microbiology of infection endophthalmitis is different from other subsets of derived endophthalmitis [21, 22]. The hazardous element for the advancement of endophthalmitis in the treatment of infection is the existence of IOFB prolong dominant overhaul, failure of the crystalline lens along with rural adjustment [23]. Brinton et al presented a high ratio of endophthalmitis occurrence in eyes with IOFB (10.7%) compared with the eyes in IOFB absence (5.2%) [24]. Difficulties of after surgery endophthalmitis might be demolishing. It declared that even suitable treatment, after surgery endophthalmitis outcomes in intense visual failure in a minimum of thirty percent cases as well as retinal detachment in (8% to 10%) of cases [25].

### CONCLUSION:

The general optical accidents were acute uveitis and glaucoma, infective keratitis and conjunctivitis. Women especially average age housewives had general optical emergencies. Men usually middle age working staff had a general optical accident. By adopting safety precautions just like wearing of goggles on working locations as well as in playgrounds such accidents are controllable.

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