PREVALENCE OF OCULAR INJURIES IN COTTAGE INDUSTRY WORKERS IN LAHORE CITY

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ABSTRACT

PURPOSE: *To find out the frequency of ocular injuries due to occupational hazards in different cottage industries of Lahore city.*

METHOD: *Cross-sectional study was conducted on 82 subjects who were working in cottages industries and having different types of ocular injuries. The subjects of all age groups and the workers of cottage industries who were directly exposed to occupational hazards were included in this study. Consent of the subject was taken. Results were obtained by asking the subjects to fill the self-designed questionnaire.*

RESULTS: *Out of 82 subjects 40.2% were labourers, 15.9% were machine operators, 15.9% were those who working in welding industries, 6.1% were work as a chemist. 7.32% labourers had penetrating injury. Similarly, 10.96% labourers, 6.1% machine operator, 4.88% welder reported as having non penetrating injury, 9.76% labourers had complaint of watering, 3.66% labourers, 2.32% machine operator, 8.54% welders and 1.22% chemist had red eye after injury, while 1.22% welders had reduced vision 3.66% chemist had blurred vision. 23.17% labourers, 9.76% machine operator, 2.44% welders, 1.22% chemist said that they personally used precautionary measurements in the form of safety goggles, face shield, face mask etc. during their work, While 26.83% labourers, 10.98% machine operator, 6.10% welders and 3.66% chemist said that their work place management provided precautionary measurements.*

CONCLUSION: *Labourers have more chances to get injured. After that machine operators have more risk of ocular injuries. Whereas the welders and the workers working in chemical industries have less chance to get injured there would be less chances of visual impairment after ocular injuries if proper treatment or irrigation of the eye is adopted. By promoting precautionary measurements and basic training workplace safety the risk of ocular injuries can be minimized.*

KEYWORDS: *cottage industries, ocular injuries, industry workers, precautionary measurements, workplace training, eye health care professionals.*

INTRODUCTION

Cottage industries consist of small group of earnings under the authority of informal subdivision. Cottage industries are small scale industries that are set up in homes or adjoining space and these industries are regulated by owners and their relatives and family circle. There are many types of harmful substances used in small home based trades that are very dangerous to health especially for eye.[1,2] Many cottage industries comprises the usage of extremely poisonous alloy like lead, mercury, cadmium and arsenic, which have very harmful effects on fitness as well as decline in brain power, hyperactivity, active performance and some can also damage the eye.[3] The word "injury" comes from Latin word "in+jus" implying that something is "not right" and denotes that many physical and biochemical substances harm the human body specially the eye. According to Birmingham Eye Trauma terminology (BETT) ocular damages were categorized as; closed eye ball damages and open eye ball damages and also as mechanical damages and non-mechanical damages. Ocular injuries are often at the utmost consequential root of vision loss.[4] Internationally, the work related eye injuries are the main reason of avoidable impairment of vision and have substantial social and financial influence. Ocular injuries are commonest among males who are working in most industrialized region and encompass 70% of all type of eye grievances. Males have 2.2 to 5.5 times greater risk of ocular injuries than females.[5,6] Internationally it has been postulated that industrial ocular damages describe more than 10 million Disability Adjusted Life Year (DALY) and 8% of accidental ocular damages at workplace. World health organization (WHO) revealed that per annum 350,000 labourers who are working in small home based Industries loss their lives owing to unintentional workplace ocular hazards, in developed countries 8% of work place unintentional ocular hazards occurs in males and 18% in underdeveloped regions.[7] Many ocular injuries in

small home based industries occur owing to the lack of education and unawareness for the utilization of protective measurement. It is necessary that welders or other industry employees should be well educated and know for the usage of all safety measurements which continually reduced the hazard of industrial eye traumas. It would also be a responsibility of administration to enforce a law that the usage of personal protective gears (PPGs) is obligatory for all industry labourers.[8]

MATERIALS AND METHOD

Cross sectional study was conducted on 82 subjects who were working in different cottage industries of Lahore city and having different types of ocular injuries. The subjects of all age groups and the workers of cottage industries who were directly exposed to occupational hazards were included in this study. The study group was taken without discrimination of age, gender and excluding those who were mentally retarded, uncooperative subjects and those who were not giving their data and were unable to give the answers of the questions. Before the start of research, the objectives and the process of research were explained to them in detail. They assured full cooperation in carrying out research. Consent of the patients was taken. Results were obtained by asking the subjects to fill the self-designed questionnaire fed on the computer using the SPSS 20.0 software. The results were analyzed and tabulated using the same software.

RESULTS

The workers of cottage industries who were directly exposed to occupational hazards were included in this study and results showed that out of 82 subjects 40.2% were labourers, 15.9% were machine operators, 15.9% were those who working in welding industries, 6.1% were work as a chemist and 22% were others beside labourers, chemist and welders. 7.32% labourers had penetrating injury. similarly, 10.96% labourers, 6.1% machine operator, 4.88% welder reported as having non penetrating injury, 9.76% labourers had complaint of watering, 3.66% labourers, 2.32% machine operator, 8.54% welders and 1.22% chemist had red eye after injury, while 1.22% welders had reduced vision 3.66% chemist had blurred vision.. Likewise 19.51% labourers, 7.32% machine operator, 10.98% welders, 4.88% chemists and 7.32% other workers visited to eye health professional after having eye injury. 23.17% labourers, 9.76% machine operator, 2.44% welders, 1.22% chemist and 6.10% working in other cottage industries said that they personally used precautionary measurements in the form of safety goggles, face shield, face mask etc. during their work, While 26.83% labourers, 10.98% machine operator, 6.10% welders and 3.66% chemist said that their work place management provided precautionary measurements, Whereas 10.98% welders, 3.66% chemists and 6.10% other workers get treatment after any kind of injury.

Table 1: Nature of work

	Frequency	Percent
Labourer	33	40.2
Machine operator	13	15.9
Welder	13	15.9
Chemist	5	6.1
Other	18	22
Total	82	100

Fig 1: History of ocular injury before work

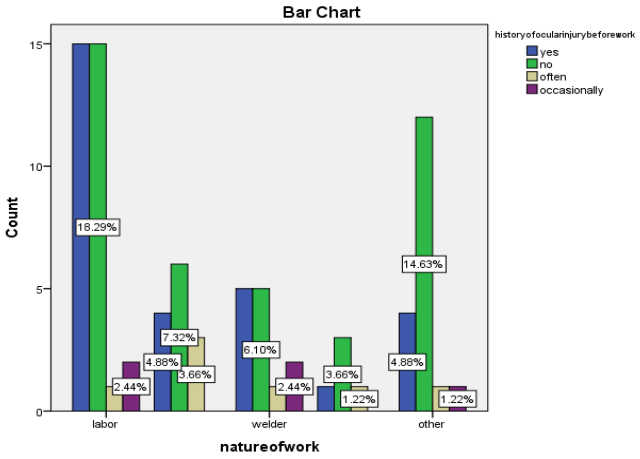


Fig 2: Type of Injury

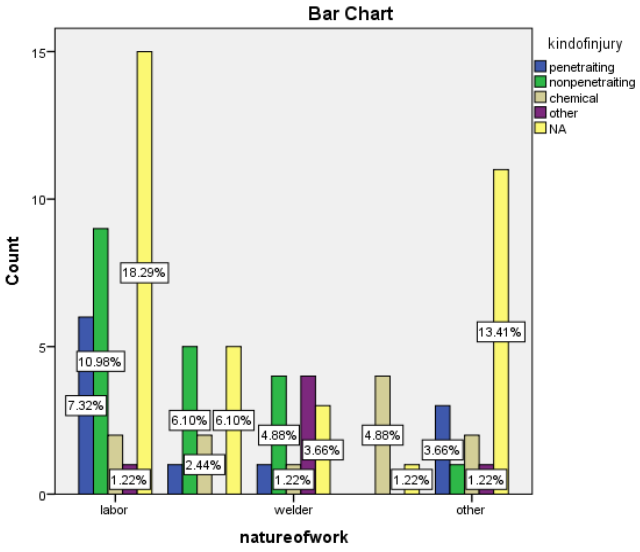


Fig 3: Symptoms of ocular injury

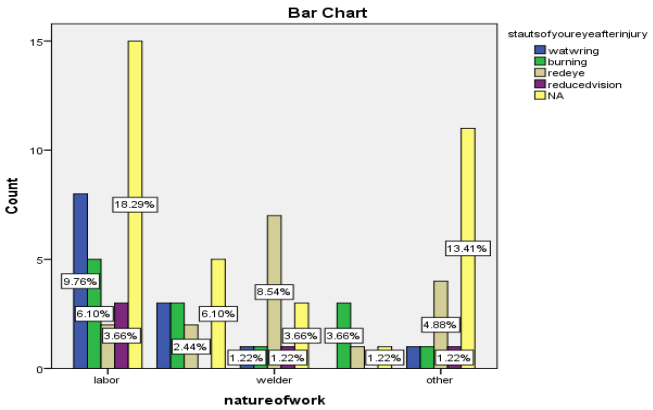


Fig 4: Visual problems after injury

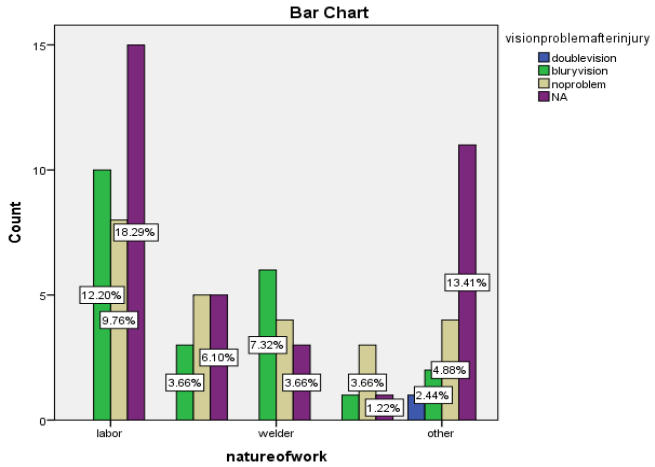


Fig 5: Use of safety equipment

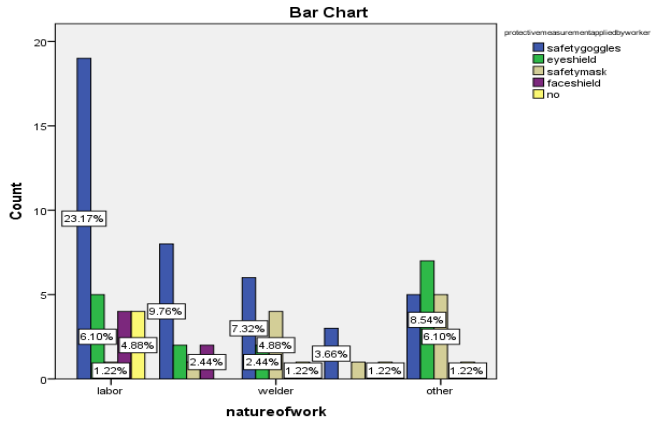
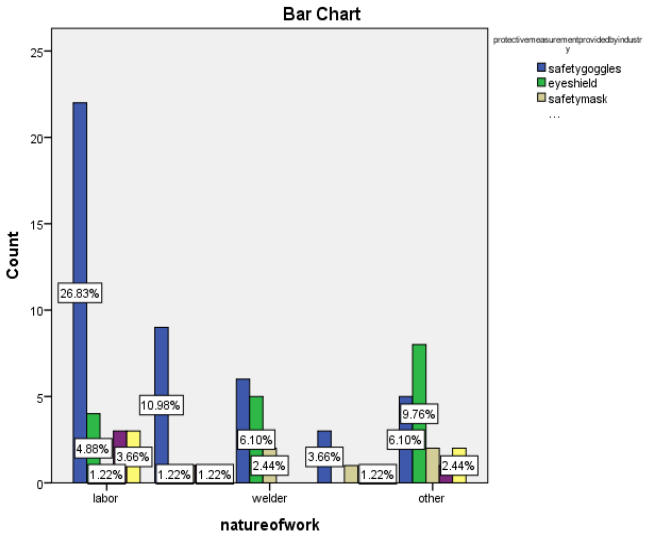


Fig 6: Provision of safety equipment by Employer



DISCUSSION

Work related well-being is defined as it is the advancement of the uppermost gradation of physical, intellectual and societal welfare for all employees who are working in cottage industries or other workplace. The main emphasis in work related healthiness is to sustain the health of employees and improve the employed capability, to make the favorable and secure atmosphere for health and industry employees. It is also responsible to develop the administrations which maintain the health of employees and also provide security to the industries workers.[9] In unindustrialized states ocular injuries in welding industries accounts suggestively 2.3% Disability Adjusted Life Year (DALY) vanished because of work related dangers. There were various studies which not conveyed information about the practice of shielding devices, these studies were testified only work related threats in welders. Hence, it is essential for us to make the welders familiar with shielding devices and their usage in the surroundings.[10] Job related ocular injuries comprises labourers, machine operator, different types of machineries and ingredients. Continuously there is proper arrangement of different aspects that might be a reason of eye hazards in cottage industries and any amendments in this categorization or the exclusion of any aspect will ordinarily avert the injury at different work places.[11] According to previous researches the prevalence of occupational related ocular injuries was different in different cottage industries.

The present study was conducted to find the prevalence of work related ocular injuries in different cottage industries in Lahore city. Cross sectional study was carried out by taking 82 subjects as a study group. The subjects were asked 18 questions about nature of their work, duration of their work, any kind of injury before or during their work and the above results were obtained. Most of the workers related their working conditions such as working in too

bright or too dim light, being exposed to chemical and industrialized hazards such as acids/ alkalies etc. They had complaint of watering and burning sensation in eyes but this prevalence was less as compared to other studies.[12] A considerable proportion of workers had red eyes following injuries while others reported that they were satisfied with the precautionary measurements provided by their industry and Most of the them used protective devices during working condition such as safety goggles, eye shield and safety masks. This result is comparable to Thompson study.[14]

Workers in our study visited eye health care professionals more than those in a previous study by Josset et al[15]. They expressed satisfaction of treatment provided by them evidenced by a reduction in symptoms such as red eyes, burning or treatment of penetrating and non penetrating ocular trauma.

Workers in chemical industry had experienced chemical injury but this proportion is less as compared to a previous study in Hong Kong[11]. However exposure to chemical industries by workers not in chemical industry is higher in our study. Provision of safety measures by administration is also an area where our workers fare better than their Singaporean counterparts.[16]

CONCLUSION

This study aimed to find out the prevalence of ocular injuries in different cottage industries in Lahore. The above results concluded that most of the subjects working in cottage industries in Lahore city of Pakistan were labourers and have more chances to get injured. After that machine operators have more risk of ocular injuries. There would be less chances of visual impairment after ocular injuries if proper treatment or irrigation of the eye is adopted. By promoting precautionary measurements, safety goggles, safety shield and basic training workplace safety the risk of ocular injuries can be minimized.

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