

# OCCUPATIONAL INJURIES AND PERCEPTION OF HAZARDS AMONG ROAD-SIDE WELDING WORKERS

Pages with reference to book, From 187 To 188

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## ABSTRACT

A cross-sectional survey was conducted to understand the extent of occupational injuries and the perception of hazards among the road-side welders in the city of Karachi. Burns and foreign body in eyes were reported to be the most common injuries. Few workers perceived their occupation as hazardous. Consequently, few of them reported using protective measures. A 3-step strategy was recommended to improve occupational safety for this and other related groups of workers(JPMA 91:187, 1991).

## INTRODUCTION

The road-side welding workers are part of the informal occupational sector of Pakistan. These workers generally conduct gas welding jobs on motor vehicles; most commonly, the welding of mufflers. The gas welding process involves the use of two gases acetylene, the product of a reaction between calcium carbide and water, and pure oxygen. The two gases are combined in a nozzle and ignited, producing a flame reaching temperatures of 3100°C, which is then used for cutting and welding<sup>1</sup>. Occupational hazards involved in the gas welding process include fire, explosion and personal injury<sup>1-3</sup>. If proper precautions are not taken such hazards, particularly injuries to the face and eyes, could lead to life-long disability.

Knowledge of occupational health problems in this group of workers is almost non-existent. We made an attempt to determine the extent of occupational injuries and the perception of the occupational hazards among road-side welding workers in the city of Karachi.

## SUBJECTS AND METHODS

A cross sectional survey was conducted between October 03 and 10, 1987 of roadside welders in three areas of Karachi. One group worked on Shahr-e-Quaideen in the vicinity of Quaid-e-Azam Mausoleum, the second was around the Jubilee Cinema area and another in Hyderabad Colony opposite Karachi Central Jail.

A uniform questionnaire was used to interview all the workers available on the day of the survey. Thirty six workers were interviewed ( about 80% of working population in each area). None of the available workers refused to be interviewed. Questions were asked about the perception of hazards in their occupation, injuries in the last 3 months, and use of safety measures.

## RESULTS

Twelve out of 36 workers reported that they did not perceive any hazard in their occupation. Those who did perceive hazards based their perceptions on personal experiences and hearsay. A total of 340 injuries were reported to have occurred during the last three months i.e., an average of 3 injuries per worker per month. About half of them suffered from some kind of burn and approximately one third

complained of having a foreign body in their eyes (Table).

**TABLE. Number of occupational injuries reported during the last three months.**

Type of Injury	Number (%)
Foreign body in eyes	124 (37)
Injury on face (other than eyes)	55 (16)
Burn	161 (47)
<b>Total</b>	<b>340</b>

During the same period, 14 workers took one or two days off due to work-related injuries. One worker who suffered from a severe eye injury took leave for 15 days fifty-six percent of workers did not use personal protective devices such as gloves or goggles and the remaining used only goggles. Among the non-users 13 felt no need for them, 6 said the devices were uncomfortable and 4 blamed their employers for lack of availability. Regarding general safety measures, 6 reported the periodic cleaning of acetylene gas cylinders, 11 had fire extinguisher on the premises and 3 mentioned first aid arrangements.

Finally, none of our respondents felt the need for enforcement of safety regulations to prevent work-related accidents and injuries in their occupation.

## **DISCUSSION**

Most workers in the informal sector enter work force at a very young age without schooling or vocational training<sup>4</sup>. They work as helpers, for many years and learn their skills by observation and experience. Without proper training, many of them could be prone to occupational injuries.

Most of the respondents had very limited education and few of them perceived their occupation as hazardous, their perceptions based solely on negative and positive experiences.

The welding of mufflers is generally conducted by lying underneath the vehicle and unless protective measures are taken, the chances of accidental burns or eye injuries from flying metal particles are particularly high. Despite high frequencies of such injuries, many workers did not feel the need for using protective devices. They accepted such injuries as part of the job.

Regarding general precautions, many of them had fire extinguishers in their premises. However, an important measure against fire and explosion hazard, i.e. periodic cleaning of acetylene gas cylinders was rarely mentioned. The study population was unclear about the factors leading to their work-related accidents and the value or the need of safety measures in preventing them.

Our study findings, nevertheless, have some limitation. Firstly, it was a cross-sectional study, thus representing the situation existing at a specific time. A longitudinal study would be required to estimate the incidence of occupational injuries and related complications. Especially complications of eye injuries such as corneal ulcer which, if untreated, may lead to loss of vision. Secondly, we studied a

limited sample of the workers from a large urban area. A larger sample size including diverse areas may be needed for further analysis. Lastly, our findings were based on self-reporting.

For the sake of obtaining better information in the future and to improve the current occupational situation among the road-side welders, we recommend the following 3-step approach, which could also be applied to other hazardous occupations in the informal sector. 1) Education of employer and employees about the health hazards and their protection at the time of licensing of the facility; 2) Enunciation of a law requiring minimum safety measures at the facility, and 3) A mechanism for reporting and investigation of work-related accidents and injuries. This last step will help to provide the data base for monitoring the success of the improvement programme.

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