"EVALUATE THE EFFECTIVENESS OF INFORMATION BOOKLET ON KNOWLEDGE REGARDING HEALTH HAZARDS OF WELDING & ITS PREVENTION AMONG WELDING WORKER'S IN SELECTED WELDING WORKSHOPS OF UDAIPUR CITY (RAJ)".

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ABSTRACT

Based on WHO report, around 7 million people worldwide died due to the air pollution in 2012. Welding, as an important operation in most industries, can considerably cause air pollution. In all types of welding processes, fume and gases are formed as air pollutants. Due to high temperature during the welding process, different substances in the air are vaporized. Then, the vapor condenses and oxidizes in contact with the air, leading to the formation of fumes. The fume particles are so small and they can reach the narrowest airways of respiratory system. Some parameters like the welding type and consumables (filler metal and surface coatings) determine the kind and amount of generated particles and gases. Since they work with high heat and large pieces of metal, welders sustain a higher rate of injury than many other professions. The Occupational Health and Safety Administration puts special emphasis on eye safety, noting that as of 2007, eye injuries were responsible for about 25 percent of all welding injuries. Welders also need to protect themselves from UV rays, burns and falling objects, and must be careful not to slip and fall when welding from a height. All welders wear protective gear and learn safety procedures intended to minimize these dangers. These precautions are needed whether the welder does electric arc welding or oxygen-acetylene welding. In 2000 alone, it was estimated that over 2.16 million episodes of welding hazards occurred worldwide with 261000 deaths and that more than 90 percent of this morbidity and mortality occurred only in Asia. In Asia countries like China, India, Indonesia, Pakistan and Vietnam during 2006, 21,874 episodes of welding hazards were detected in which 180.3 in Indonesia, 412.9 in Pakistan and 493.5 in India/100,000 population was recorded. Worldwide causes 16 million illness and more than 600,000 deaths each year especially common in parts of Asia, Africa and South America, where not using proper PPE, The best figure available for the global burden of health hazards supporting this and suggest that Africa (50/100,000) has a far lower burden of diseases due to working in welding workshops than Asia (274/100,000).**"Evaluate The Effectiveness Of Information Booklet On Knowledge Regarding Health Hazards Of Welding & Its Prevention Among Welding Worker's In Selected Welding Workshops Of Udaipur City (Raj)". Objectives:** To assess the knowledge score regarding health hazards of welding & its prevention. To evaluate the effectiveness of information booklet on knowledge regarding health hazards of welding & it"s prevention. To find out association between pre-test knowledge score with selected socio demographic variables. The research approach adopted for the present study was quantitative research approach as the study aimed at development of an intervention i.e. information booklet for assessing the knowledge of 60 welding workers in selected Welding workshops in Udaipur city. This approach would help the investigator to evaluate the effect of specific intervention that is "Information booklet" on the variable that is "knowledge" of welding workers regarding health hazards of welding & its prevention. In this study convenient sampling method was used by investigator. Data were collected by using structured knowledge questionnaire. There is a significant difference between pre and post-test knowledge scores regarding health hazards of welding and its prevention among welding workers. the mean post-test knowledge score (23.53) was greater than the mean pre-test score (14.85). The mean difference between pre-test and past test score was (8.68) with the mean percentage of (27.13%). The calculated z statistical score was 15.37 is greater than the z-critical value 1.96. Hence research hypothesis H_1 was accepted. This indicates that the information booklet was effective in increasing the knowledge of welding workers regarding health hazards of welding and its prevention. There was no significant association between pre-test knowledge score with any of the selected socio demographic variables. Hence research hypotheses H_2 was rejected. The study concluded that there was improvement in the level of knowledge of welding workers which indicated that the information booklet was effective. The demographic variables of welding workers non significantly associated with the pre-test knowledge score.

***Key Words**:* Knowledge, information booklet, welding workers. Prevention of welding health hazards

Materials and methods: A quantitative research approach was used for this study. The study was carried out in 3 welding workshops of Udaipur. The sample comprised of 60 welding workers. Sample was selected by convenient sampling technique. The data collection was done from 25/01/2019 to 01/02/2019. Formal written permission was obtained from the authorities to conduct the study and informal consent was obtained from the welding workers prior to the data collection process. A structured knowledge questionnaire was used for data collection. The data was analyzed using descriptive and inferential statistics.

Results: *Reveals that* there was significant difference between pre and post-test knowledge scores regarding health hazards of welding and its prevention among welding workers. The mean post-test knowledge score (23.53) was greater than the mean pre-test score (14.85). The mean difference between pre-test and past test score was (8.68) with the mean percentage of (27.13%). This indicates that the information booklet was effective in increasing the knowledge of welding workers regarding health hazards of welding and its prevention. There was no significant association between pre-test knowledge score with any of the selected socio demographic variables. Hence research hypotheses H_2 was rejected.

Conclusion:
The study concluded that there was improvement in the level of knowledge of welding workers which indicated that the information booklet was effective. The demographic variables of welding workers non significantly associated with the pre-test knowledge score.

Key Words: Knowledge, information booklet, welding workers. Prevention of welding hazards.

INTRODUCTION

Workplace is an important part of human environment. The health and efficiency of workers in any organization get influenced in large extent by conditions in their work environment. It is an established fact that no occupation is without risk of hazard. There are varieties of hazards in the occupational environment to which workers may be exposed and which may cause various diseases. These are related to physical condition such as temperature, humidity, noise, light, chemical agents in the form of vapors, fumes, droplets, gases; and unsafe and unprotected machines and technical equipments responsible for causing accidents.

The aim of the present work is to present a holistic overview of the safety and the hazards involved in a welding environment. Some of the research work carried out in this direction has also been highlighted in this article. Although limited number of research articles are available till date, with these factors in consideration a review of hazards and safety aspects in welding is very mandatory. In general, a hazard may be defined as something that has the potential to cause injury or damage to some resource (health). The risk of injury or damage to health occurring depends on how hazards are dealt with or controlled.

Some of the frequently encountered hazards as experienced by welders and other related workers include mainly the electricity, radiation, heat, flames, fire, explosion, noise, welding fumes, fuel gases, inert gases, gas mixtures solvents, etc. In order to provide safe working conditions in a manufacturing environment, it becomes mandatory to take into consideration the aspects related to hazards. Risk mitigation or risk assessment therefore needs to be carried out at various levels.

Many of the epidemiological studies performed are difficult to compare because of differences in worker populations, industrial settings, welding techniques, duration of exposure, and other occupational exposures besides welding fumes. Some studies were conducted in carefully controlled work environments, others during actual workplace conditions, and some in laboratories.

Epidemiological studies have shown that a large number of welders experience some type of respiratory illness. There are many hazards that exist in a welding workplace, such as fumes, toxic gases, radiation, noise, and vibration. However, inhalable hazard such as fumes and toxic gases poses higher occupational disease health.

Welding is an important occupational activity in India, and as with other occupations, it is not without health risks. However, this population has been studied in limited extent in Indian settings. Therefore, the present study attempted to assess the duration of exposure to various hazards at workplace and presence of various morbidities among welders at the time of survey and a year prior to it. Notably more than half of the respondents found their occupation to be physically hard and dangerous. This proportion is much lower than observed among welders in Benin City (91.6%) and Kaduna Metropolis of Nigeria (77.9%). Lack of awareness about severity of risks associated with one's occupation aggravates the worker's health hazards in the work environment. Thus, this finding point towards the need for education of this group of workers about the workplace hazards.

The welders using PPE were those who were aware of hazards and PPE. There is a gap between being aware of hazards and PPE (90%) and use of PPE (47%) at work. Further research is needed to identify the underlying factors leading to low utilization of PPE despite the welders knowledgeable of it.

MATERIALS AND METHODS

The research employs a quantitative research approach, utilizing a one group pre test post test research design. Conducted over four weeks in the selected welding workshops of Udaipur (Raj.), the study targets welding workers. The target population encompasses selected welding workers of Udaipur (Raj.) while the accessible population specifically includes welding workers working in these areas. A sample size of 60 welding workers from selected welding workshops of Udaipur (Raj.) was selected using a convenient sampling technique. This approach allows for a focused investigation into the knowledge and utilization of preventive measures of welding workers regarding occupational hazards and its implications, providing Practice of appropriate strategy, work discipline and knowledge regarding job is essential in order to retain the health of the workers. Health education is considered as an important and best weapon and is a powerful tool a community health nurse would possess to give comprehensive, preventive, and promotive care to the workers at their work place. and promoting sustainable practices in the region.

RESULTS

Based on demographic data findings majority 40 % respondents were in the age group of 29-38 years. Majority of respondents 63.3% were from Muslim religion. Majority 56.7 % respondents were from rural area. Majority of the respondents (60 %) had primary education, majority 53.3 % respondents having monthly family income of Rs.10001 – Rs.15000, majority 40 % respondents were having 1-5 year of experience in welding workshops. In the variable previous exposure to information regarding welding health hazards the majority 43.3 % respondents were exposed to mass media. The mean post-test knowledge score (23.53) was higher than the mean pre-test knowledge score (14.85). The mean difference between pre-test and post test knowledge score was (8.68) with the mean percentage of (27.13 %) suggesting that the information booklet was effective in increasing the knowledge of respondents regarding health hazards of welding and its prevention. There was no significant association found between pre-test knowledge score with any of the selected socio demographic variables. These findings underscore the importance of demographic factors in understanding knowledge levels and utilization of preventive measures regarding certain welding hazards among welding workers.

CONCLUSION

Demographic data reveals significant insights into welding workers characteristics and knowledge levels. The majority are aged 29-38, with primary education and modest incomes, had 1-5 year working experience, 43.3 % were exposed to mass media and belongs to Muslim backgrounds. The mean difference between pre-test and post test knowledge score was (8.68) with the mean percentage of (27.13 %) suggesting that the information booklet was effective in increasing the knowledge of respondents regarding health hazards of welding and its prevention. These findings of the study could be made use by all nursing personnel, medical, allied science as well as employers of welding industry. The health team members could arrange health assessment camps in the welding workshops to assess the developing risk of welding related hazards periodically. The nursing students could organize health education programme for the welding workers about preventive measures of welding hazards during their industrial visit. The knowledge gained from this study may be utilized while conducting occupational health programs. Development of manual on safety and preventive measures at work place will enhance to reduce hazards at work place. The community leaders, health officials and health workers should be oriented and sensitized to occupational hazards. Mass media to be used to impart knowledge on occupational hazards to the working population.

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