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ASSESS THE PHYSICAL MORBIDITY PROFILE AMONG THE WELDERS

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Abstract:

Background: In developed countries, the number of injuries and illnesses at work is growing. About 120 million workplace incidents and more than 200,000 deaths are projected to occur in these countries each year. An estimated 42 million workplace accidents occurred with more than 54,000 casualties each year. Welding is one of the occupations which contributes to developing countries in the form of work-related accidents and diseases. The process remains the most common method of joining metals today and forms part of the art of metal making involving the construction of metal structures by cutting, bending and joining.

Objectives: This study is planned to evaluate the physical morbidity profile among the welders and that associate finding with a selected demographic variable.

Ethics approval was obtained from IEC, DMIMS (DMIMS(DU)/IEC/Dec-2019/8658). The conclusion will be drawn from the results.

Methods: It is a community based Descriptive study welders are involved in this study. The welders will be selected for study as per inclusion/ exclusion criteria and purposefully selected. Data will be collected by a self-structured checklist. The checklist is given to the welders and collects after 30min of time duration.

Results: All welders having some type of physical morbidity. Welder's injury was the most common problem at work followed by skin and eye problems. Age of welders, education qualification, welding experience, hours worked per day were associated with the physical morbidity among welders.

Conclusion: Welders in this study will have a identified physical morbidity pattern.

Keywords: Welders, Physical morbidity, Hazards, Identity, Diseases.

Introduction:

Occupancy is the key source of income in any family to lead their lives or meet the family's needs. There are many industries that are providing occupation to number of peoples and also there are many diseases, which can affect the worker during processing of the product[1].

Welding has been an important industrial method since the early twentieth century, and since about 1940 has become widespread. In industrial economies, welding on stainless steels will account for more than 50 per cent of welding. Aluminum and other metals are soldered just a few per cent of the total[2].

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The welders are exposed to other welding smoke such as chromium, nickel, arsenic, asbestos, manganese, silica, beryllium, cadmium, nitrogen oxides, phosgene, compounds of fluorine, carbon monoxide, cobalt, copper, mercury, selenium, and zinc, which can be highly harmful. It can lead to a higher risk of welders' health impairment, which mainly causes short-term effects such as metal fever, eye irritation, nose, chest and respiratory tract and pneumonitis, and also shows that welders are at increased risk of lung cancer.[3].

Around the world ten million workers are exposed to iron fumes. Many are exposed by inhaling welding fumes which have iron as their main component. Throughout steel mills and iron / steel foundries the exposure to iron fumes is also significant. Epidemiological studies have indicated that mild steel welders, stainless steel welders and metal welders are at high risk of lung cancer[4].

Rationale of study –

The welders are exposed to some smoke, light and radiation. And its incident is rapidly increasing. Due to they are malpractice of welding, personal problem and low use of PPE (Personal Protective Equipment). Thus, there is need of assess their physical problem of welders from welding and collection of data. That data use to find out most incident problem and planning for intervention on it for minimize risk factors.

It is community base Descriptive study, purposefully take sample and assess their physical morbidity profile.

The objective of the study is to evaluate the physical morbidity profile among the welders and that associate finding with selected demographic variable.

Methodology:

It is community base Descriptive study, It will be conducted in Wardha city respectively.

Inclusion Criteria:

The study includes,

1. Welder of Wardha city who are willing to participate.

2. Welder who will present at the time of data collection.

3. Those welders who have already acquired some form of physical morbidity.

Exclusion Criteria:

The study excludes.

1.Those welders who has participated in the same study previously.

Conclusion: Conclusion will be drawn from the statistical analysis.

Sample Size- In previous studies, the sample size ranges from 100 to 150.[5]

For this study, the sample size will be selected 100.

Data management and monitoring- The demographic data (age, educational qualification, welding experience). The physical profile assessment at the site of their work after 30min given checklist data sheet will be collected.

Statistical analysis-Statistical analysis will be carried out using version 19 of SPSS program.

Expected Outcome/Result: This study is planned to investigate the welder physical morbidity. And after investigation data should recognized the physical problems of the welders. This study shows various physical problems of welders and see the prevalence rate of morbidity of welders.

Discussion- Occupancy is the key source of income in any family to lead their lives or meet the family's needs. In this study purposefully take a sample for the study to assess physical morbidity profile among welders. Welders go through so many physical hazardous activities that are harmful to welders. A study of Welders reflect that welders suffered substantial morbidity of the head, eyes and ears, accentuated by the non-use of PPE. All worked without formal training and were unaware of the safe working guidelines that exist for the welders in India, but

are not implemented.[5] Similar study was conducted by Khanam et al among Brick Field Workers[6], Aryal et al on Nepali Migrants[7] and Deolia et al on Class-III and IV healthcare workers[8]. Among the key morbidities, respiratory problems due to exposure to harmful fumes are also of concern. Dhar et al has published studies on profile of non-ccystic fibrosis bronchiectasis in India[9,10]. Cases of ophthalmic morbidity have also been reported[11,12,13].

In this main objective is to assess the physical morbidity profile and association with their demographic variable. After analysis of results and assessment, guidelines for referral to hospital for health check-up and promoting use of preventive measures to prevent injuries from physical hazardous activities will be promoted. Use of PPE (Personal Protective Equipment) will be recommended.

Conclusion- Conclusion will be drawn from the statistical analysis.

References –

1. Park K. Text Book of Prevention and social medicine. 19th ed. Jabalpur: M/s Banaridas Bhanot; 2005;
2. Fred Blosser. "Health Effects of welding". published in the journal of Critical Reviews in Toxicology, 33(1); 61-103 (2003).
3. Lyon France. IARC Monographs on the evaluation of carcinogenic Risks to Humans; 2010-2014, (P.19)
4. Dr. G. H. Grant Mcmillan. Lung cancer and electric Arc welders; UK, N 12-March 2005
5. Alexander V, Sindhu KN, Zechariah P, Resu AV, Nair SR, Kattula D, Mohan VR, Alex T RG. Occupational safety measures and morbidity among welders in Vellore, Southern India. International journal of occupational and environmental health. 2016 Oct 1;22(4):300-6.
6. Khanam, N., V. Wagh, A.M. Gaidhane, and S.Z. Quazi. "Assessment of Work-Related Musculoskeletal Morbidity, Perceived Causes and Preventive Activities Practiced to Reduce Morbidity among Brick Field Workers." Indian Journal of Community Health 31, no. 2 (2019): 213–19.
7. Aryal, Nirmal, Pramod R. Regmi, Erwin Martinez Faller, Edwin van Teijlingen, Chan Chee Khoon, Adrian Pereira, and Padam Simkhada. "Sudden Cardiac Death and Kidney Health Related Problems among Nepali Migrant Workers in Malaysia." NEPAL JOURNAL OF EPIDEMIOLOGY 9, no. 3 (2019): 788–91. https://doi.org/10.3126/nje.v9i3.25805.
8. Deolia, Shravani, Shreya Choudhary, Savi Vora, Amit Reche, Kumar Gaurav Chhabra, and Sourav Sen. "Evaluation of Job Satisfaction of Class III and Class IV Workers in a Tertiary Medical Care Centre, Maharashtra." JOURNAL OF EVOLUTION OF MEDICAL AND DENTAL SCIENCES-JEMDS 8, no. 51 (December 23, 2019): 3841–45. https://doi.org/10.14260/jemds/2019/832.
9. Dhar, R., M. Mohan, G. D'souza, S. Rajagopalan, V. Singh, A. Jindal, A. B, et al. "Phenotype Characterization Of Non Cystic Fibrosis Bronchiectasis In India: Baseline Data From An Indian Bronchiectasis Registry." *AMERICAN JOURNAL OF RESPIRATORY AND CRITICAL CARE MEDICINE* 195 (2017).
10. Dhar, Raja, Sheetu Singh, Deepak Talwar, Murali Mohan, Surya Kant Tripathi, Rajesh Swarnakar, Sonali Trivedi, et al. "Bronchiectasis in India: Results from the European Multicentre Bronchiectasis Audit and Research Collaboration (EMBARC) and Respiratory Research Network of India Registry." *LANCET GLOBAL HEALTH* 7, no. 9 (September 2019): E1269–79. https://doi.org/10.1016/S2214-109X(19)30327-4.
11. Shahpurkar, Vinay V., and Amit Agrawal. "Fatal Orbitocranial Injury by Fencing and Spectacle Sidebar." *INDIAN JOURNAL OF OPHTHALMOLOGY* 56, no. 4 (August 2008): 345–46.
12. Yeola, Meenakshi Pate, S. R. Joharapurkar, A. M. Bhole, Manisha Chawla, Sumit Chopra, and Anup Paliwal. "Orbital Floor Dermoid: An Unusual Presentation." *INDIAN JOURNAL OF OPHTHALMOLOGY* 57, no. 1 (February 2009): 51–52. https://doi.org/10.4103/0301-4738.44486.
13. Sorte, K., P. Sune, A. Bhake, V. B. Shivkumar, N. Gangane, and A. Basak. "Quantitative Assessment of DNA Damage Directly in Lens Epithelial Cells from Senile Cataract Patients." *MOLECULAR VISION* 17, no. 1–2 (January 5, 2011): 1–6.

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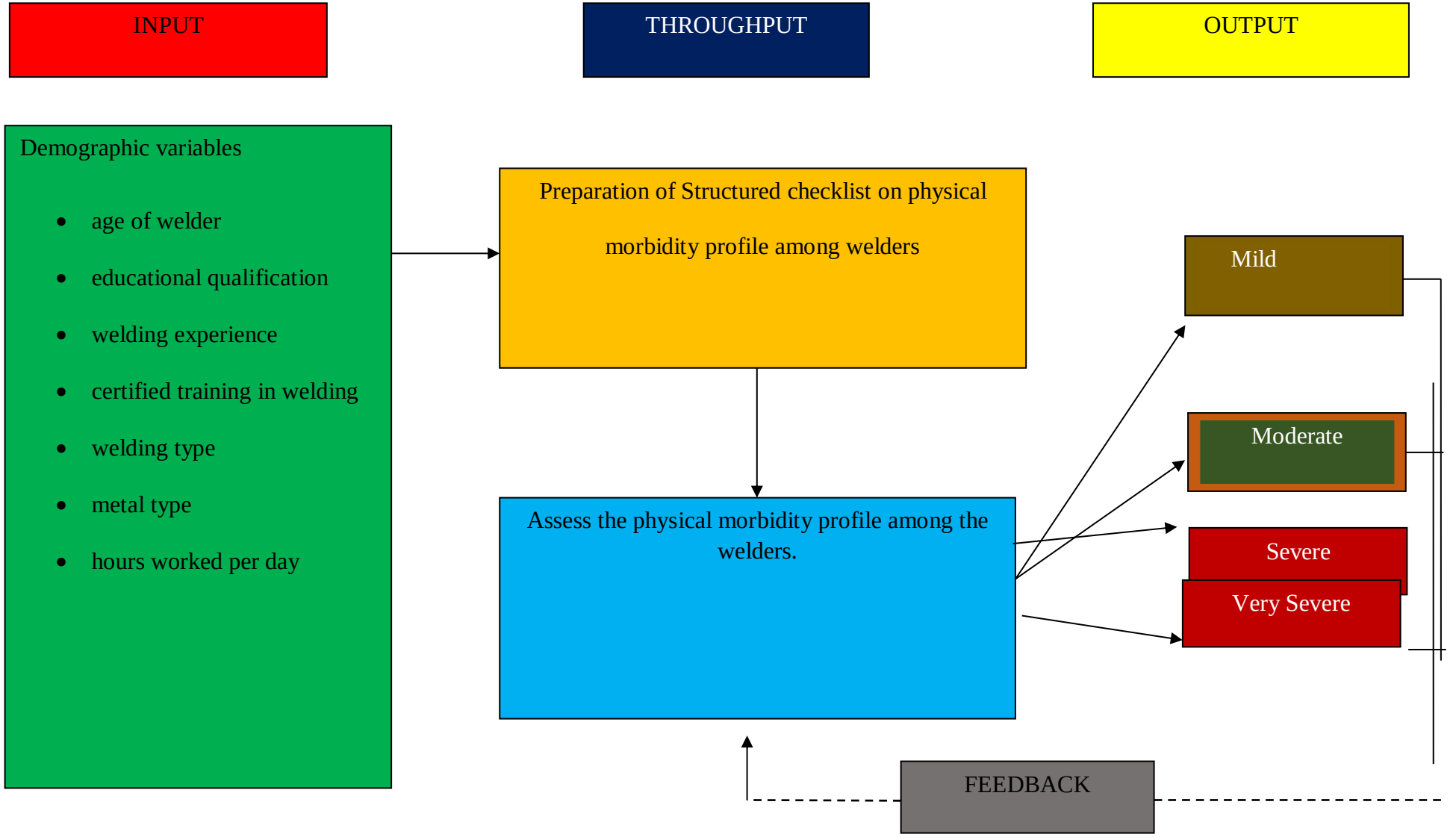
Schematic diagram of Study methodology



CONCEPTUAL FRAMEWORK BASED ON MODIFIED VON BERTALANFFY GENERAL SYSTEM MODEL 1968