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11. MINING OCCUPATIONAL SAFETY AND HEALTH

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Mining safety and health in the philippines: occupational and environmental impacts

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This research on small scale gold mining (SSGM) in Benguet, Philippines draws from three different but complementary data sources to analyze work, well-being and health in SSGM. The data sources were- 1. workplace inspection to assess working conditions; 2. health assessment and laboratory examinations among indigenous miners; and 3. environmental monitoring of mercury in water samples across all 13 municipalities of Benguet. The work analysis showed accident risks from use of explosives, poor visibility in tunnels, exposure to dust during tunneling, and chemical exposures to mercury and cyanide without protective equipment and proper ventilation. The workplace inspection of the underground tunnels showed safety infarctions including unsteady trenches, insufficient slopes, possibility of collapse of trenches, and the risk of subsidence. Another data from a sub-population of 34 miners showed major causes for hospitalization were trauma, ulcers, kidney and cardiac diseases. Low back pain was common and associated with heavy lifting ($p=0.001$). Reticulocyte count was associated with total lifetime mining hours ($p=0.033$). The mental status examination showed most deficits in repeat phrase and recent memory. For the environmental monitoring of mercury in 90 surface water and 40 drinking water samples, a considerable percentage exceeded the maximum contaminant level (MCL) of both the Philippine guideline (0.001 mg/L for drinking sources, 0.002 mg/L for surface waters), and EPA (0.002 mg/L), above which levels can cause risk to health. All the three different but complementary data sources show the need for an occupational and en

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Is personal discomfort a main factor in driving employees' wearing of hearing protectors in a mine setting?

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Introduction: Continuous exposure to noise can have both physiological and psychological effects on workers. Where a worker is exposed to excessive noise, hearing protectors should be worn. Company policy and personal comfort were the main factors identified in the adherence to wearing hearing protectors. The objective was to answer if there is an association between personal comfort and wearing of hearing protectors if the company has already set up a health and safety policy.

Material and Methods: The study employed a cross section research survey questionnaire. The target population involved was 107 workers in a heavy manufacturing and mine facility. Binary regression and descriptive analysis were conducted on the data collected.

Results: The majority of the study population agree personal discomfort is a factor using hearing protectors in the workplace, 36.2% agree ears hurt when wearing, 49.1% feel uncomfortable

when wearing especially in warm weather, and 27.6% feel itching when wearing. The adherence to wearing hearing protectors was not affected by years of employment or duration worn throughout the day. There is no significant association between reporting ears hurt while using hearing protectors and age or roles of workers. Workers are aware of sections of the company policy.

Conclusions: Although the company has a strong safety policy, personal discomfort is a factor in wearing hearing protectors within the company. To influence the wearing of hearing protectors a company should give employees the option to select the type of hearing protector and provide more choices.

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Health profile of mining workers of an open-cast iron ore mine in Eastern India: A cross-sectional study on Non-Communicable Diseases

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Introduction: Non-Communicable Diseases (NCDs) are important among adults and leading causes of mortality and morbidity globally. In the 21st century, India is experiencing a rising burden of NCDs consisting of cardiovascular diseases, stroke, diabetes, cancer, MSD, chronic respiratory diseases, accidents and injuries. Being the part of hazardous industry, mining workers are exposed to various factors and few develop disorders gradually. This study focused to know the health status of mining workers, epidemiological profile, prevalence of NCDs, factors associated and prevention.

Material and Methods: A cross-sectional study was conducted through health check-up of 160 mining workers of an open-cast iron ore mine in eastern part of India. Study period: January-March 2020. Chi-Square test was used for statistical analysis.

Results: The study revealed, mean age of employees 45.14 ± 10.09 years. Most of them (46%) were pre-obese or obese. 23%, 20% & 14% workers were hypertensive, with MSD and diabetic respectively. Ischemic Heart Disease (8%) and chronic respiratory diseases (7%) was present among few workers. BMI was significantly associated (at $p < 0.05$) with hypertension ($x^2=4.9021$, $p=0.02682$) and diabetes ($x^2=4.9354$, $p=0.02631$). Smoking showed statistically significant correlation ($x^2=6.5752$, $p=0.010341$, at $p < 0.05$) with hypertension.

Conclusions: The study emphasized need for implementation of population-based screening programs, community-based wellness program and some specific approaches like weight management plan, de-addiction program, smoking cessation program, yoga therapy to prevent NCDs in mining workers.

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Expanded health "accident" resulting from a dam rupture in Brumadinho (BRAZIL): workers' deaths surveillance

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