Respiratory and eye symptoms, and ventilatory functions; comparison among stone/granite quarry workers and general population in Kurunegala district, Sri Lanka

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Abstract: A cross sectional study carried out with the aim to compare the prevalence of occupation related respiratory and eye symptoms and peak expiratory flow rates (PEFR) among quarry workers (N=290), (20–60 years) working (>6 months) in stone/granite quarries installed with mechanical crushers in the Kurunegala district. Comparison group (N=290) was selected from the general population (labourers), living beyond a radius of 2 km from a quarry site. Selection was done by cluster sampling method with probability proportional to size sampling technique. Interviewer administered questionnaires were used, based on British Medical Research Council questionnaire on respiratory symptoms and a questionnaire for eye symptoms developed with consensual validity from eye experts. PEFR was recorded by using a portable ST95 Spirometer. Differences between the prevalence of symptoms tested using the chi-squared test, results expressed as Odds ratio, 95% confidence intervals. Quarry workers vs comparison group; the prevalence of cough (95.9% *vs* 62.1%), phlegm (75.9% *vs* 52.8%), redness (47.9% *vs* 17.6%), gritty feeling (7.9% *vs* 1.7%), tearing (49% *vs* 10.7%), itching in the eyes (56.9% *vs* 14.1%) was significantly higher. The observed mean values of PEFR L/min among male (360.45 *vs* 391.79) and female (291.42 *vs* 376.77) quarry workers were significantly low which could be implicated to exposure duration and particulate concentration. However, current smokers (51.4% *vs* 18.6%) were significantly higher. In conclusion, quarry workers *vs* comparison group; the prevalence of respiratory and eye symptoms was significantly higher and mean PEFR value among male and female quarry workers was significantly low.

Keywords: Eye conditions, Granite worker, PEFR, Respiratory conditions