

Ergonomic Assessment of Workplace Environment of Flour Mill Workers

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Abstract : The study was carried out in Parbhani district of Maharashtra state, India with the objectives to study environmental problems faced by flour mill workers, prevalence of work-related health hazards and the physiological cost of workers while performing work in flour mill in traditional method as well as improved method. The use of flour presser, dust controlling bag and noise and dust controlling mask developed by AICRP College of Home Science, VNMKV, Parbhani was considered as an improved method. This investigation consisted survey and experiment which was conducted in the respective locations of flour mills. Healthy, non-smoking 30 flour mill workers ranged between the age group of 20-50 yrs comprising 16 female and 14 male working at flour mill for 4-8 hrs/ day and 6 days/ week and had minimum five years experience of work in flour mill were selected for the study. Pulmonary function test of flour mill workers was carried out by trained technician at Dr. ShankarraoChavan Government Medical College, Nanded by using Electronic Spirometer. The data regarding heart rate (resting, working and recovery), energy expenditure, musculoskeletal problems and occupational health hazards and accidents were recorded by using pretested questionnaire. Scientific equipment used in the experiment were polar sport test heart rate monitor, Hygrometer, Goniometer, Dialed Thermometer, Sound Level Meter, Lux Meter, Ambient Air Sampler and Air Quality Monitor. The collected data were subjected to appropriate statistical analysis such as 't' test and correlation coefficient test. Results indicated that improved method i.e. use of noise and dust controlling mask, flour presser and dust controlling bag were effective in reducing physiological cost of work of flour mill workers. Lung function test of flour mill workers showed decreased values of all parameters, hence the results of present study support paying attention to use of personal protective noise and dust controlling mask by flour mill workers and also to the working conditions in flour mill especially ventilation and illumination level needs to be enhanced in flour mill. The study also emphasizes the need to develop some mechanism for lifting load of grains and unloading in the hopper. It is also suggested that the flour mill workers should use flour presser suitable to their height to avoid frequent bending and should use dust controlling bag to flour outlet of machine to reduce inhalable flour dust level in the flour mill.

Keywords : physiological cost, energy expenditure, musculoskeletal problems

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