

Effectiveness of Participatory Ergonomic Education on Pain Due to Work Related Musculoskeletal Disorders in Food Processing Industrial Workers

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Abstract : Ergonomics concerns the fitting of the environment and the equipment to the worker. Ergonomic principles can be employed in different dimensions of the industrial sector. Participation of all the stakeholders is the key to the formulation of a multifaceted and comprehensive approach to lessen the burden of occupational hazards. Taking responsibility for one's own work activities by acquiring sufficient knowledge and potential to influence the practices and outcomes is the basis of participatory ergonomics and even hastens the process to identify workplace hazards. The study was aimed to check how participatory ergonomics can be effective in the management of work-related musculoskeletal disorders. Method: A mega kitchen was identified in a twin city of Karnataka, India. Consent was taken, and the screening of workers was done using observation methods. Kitchen work was structured to include different tasks, which included preparation, cooking, distributing, and serving food, packing food to be delivered to schools, dishwashing, cleaning and maintenance of kitchen and equipment, and receiving and storing raw material. Total 100 workers attended the education session on participatory ergonomics and its role in implementing the correct ergonomic practices, thus preventing WRMSDs. Demographic details and baseline data on related musculoskeletal pain and discomfort were collected using the Nordic pain questionnaire and VAS score pre- and post-study. Monthly visits were made, and the education sessions were reiterated on each visit, thus reminding, correcting, and problem-solving of each worker. After 9 months with a total of 4 such education session, the post education data was collected. The software SPSS 20 was used to analyse the collected data. Results: The majority of them (78%), depending on the availability and feasibility, participated in the intervention workshops were arranged four times. The average age of the participants was 39 years. The percentage of female participants was 79.49%, and 20.51% of participants comprised of males. The Nordic Musculoskeletal Questionnaire (NMQ) showed that knee pain was the most commonly reported complaint (62%) from the last 12 months with a mean VAS of 6.27, followed by low back pain. Post intervention, the mean VAS Score was reduced significantly to 2.38. The comparison of pre-post scores was made using Wilcoxon matched pairs test. Upon enquiring, it was found that, the participants learned the importance of applying ergonomics at their workplace which in turn was beneficial for them to handle any problems arising at their workplace on their own with self confidence. Conclusion: The participatory ergonomics proved effective with workers of mega kitchen, and it is a feasible and practical approach. The advantage of the given study area was that it had a sophisticated and ergonomically designed workstation; thus it was the lack of education and practical knowledge to use these stations was of utmost need. There was a significant reduction in VAS scores with the implementation of changes in the working style, and the knowledge of ergonomics helped to decrease physical load and improve musculoskeletal health.

Keywords : ergonomic awareness session, mega kitchen, participatory ergonomics, work related musculoskeletal disorders

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