

Title : Evaluation of Job Related Stress of Golden Thread ('Jori') Workers and an Ergonomics Intervention for Reducing Problems of the Workstation

Author(s) : Prakash C. Dhara , Amitava Pal and Payel Maity

Institution : Ergonomics and Sports Physiology Division, Department of Human Physiology with Community Health, Vidyasagar University, Midnapur -721 102, West Bengal,

Email : prakashcdhara@gmail.com

Keywords: *Golden thread work, Work posture, MSD, Workstation design*

Introduction :

A little attention has been given to assess the occupational stress of the golden thread (locally known as 'Jori') workers, who were engaged in making ornamental cloth pieces. The present investigation was aimed to assess the work related musculoskeletal disorders (MSD) and postural stress of golden thread workers and to make an ergonomics intervention for improving the workstation.

Methodology:

The study was carried out on 107 (49 males and 58 females) workers in different districts of West Bengal state. The MSD of the workers was evaluated by modified Nordic Questionnaire method. The postural pattern was assessed by direct observation method. The analysis of working posture of the workers was done by OWAS method. The design of the workstation for golden thread work was modified based on the anthropometric dimension of the users and psychophysical analysis of user's preference. For modifying the existing design some prototypes were made and those were evaluated by paired comparison tests. After finalizing the design the suitability of the workstation was assessed by joint angles study of the workers.

Results:

The results showed that the prevalence of MSDs was high among the workers and the most affected body segments were back and upper extremity. It was observed that the work time was around 84.83% and 83.1% of total work shift and rest time was around 15.42% and 16.89% of the total work shift for male and female workers respectively which showed that the workers were involved in work for much longer time. Postural analysis made by OWAS method suggested that corrective measures should be employed for their posture as soon as possible. An ergonomic intervention was made to reduce the occurrence of MSD and postural stress of the golden thread workers. The workstation for golden thread work was modified by changing the height and inclination of the work surface according to the scores of psychophysical analysis and anthropometric dimension of the users. From the joint angle study it appeared that the users got some biomechanical advantage when worked in modified workstation than that of existing one.

Conclusion:

It has been concluded that the modified workstation for golden thread work appeared to be ergonomically effective, less prone to muscular stress and may provide better comfort to the workers.