

## Work Related and Psychosocial Risk Factors for Musculoskeletal Disorders among Workers in an Automated flexible Assembly Line in India

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**Abstract :** Background: Globally, musculoskeletal disorders are the largest single cause of work-related illnesses accounting for over 33% of all newly reported occupational illnesses. Risk factors for MSD need to be delineated to suggest means for amelioration. Material and methods: In this current cross-sectional study, the prevalence of MSDs among workers in an electrical company assembly line, the socio-demographic and job characteristics associated with MSD were obtained through a semi-structured questionnaire. A quantitative assessment of the physical risk factors through the Rapid Upper Limb Assessment (RULA) tool, and measurement of psychosocial risk factors through a Likert scale was obtained. Statistical analysis was conducted using Epi-info software and descriptive and inferential statistics including chi-square and unpaired t test were obtained. Results: A total of 263 workers consented and participated in the study. Among these workers, 200 (76%) suffered from MSD. Most of the workers were aged between 18-27 years and majority of the workers were women with 198 (75.2%) of the 263 workers being women. A chi square test was significant for association between male gender and MSD with a P value of 0.007. Among the MSD positive group, 4 (2%) had a grand score of 5, 10 (5%) had a grand score of 6 and 186 (93%) had a grand score of 7 on RULA. There were significant differences between the non-MSD and MSD group on five out of the seven psychosocial domains, namely job demand, job monotony, co-worker support, decision control and family and environment domains. Discussion: The current cross-sectional study demonstrates a high prevalence of MSD among assembly line works with inherent physical and psychosocial risk factors and recommends that not only physical risk factors, addressing psychosocial risk factors through proper ergonomic means is also essential to the well-being of the employee.

**Keywords :** musculoskeletal disorders, India, occupational health, Rapid Upper Limb Assessment (RULA)

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