ABSTRACT

The World Health Organization estimates occupational health risks as one of the leading cause of morbidity and mortality. The burden of disease from selected occupational risk factors amounts to 1.5% of the global burden in terms of DALY (Disability Adjusted Life Years). Work-related musculoskeletal disorders, especially low back pain affect workers in many occupations including vehicle drivers. Lower back disorders (LBD) represent a main cause for absence from occupational work and leads to substantial economic losses to individuals as well as to the community. There are numerous works related to LBDs have been conducted globally but there are only few studies were conducted in India among vehicle drivers.

The aim of this cross-sectional study was to analyze the work related LBDs among vehicle drivers. The research objectives analyze the potential environmental ergonomic risk factors influencing LBD prevalence among vehicle drivers and to determine that the LBD causing potential environmental ergonomic risk factors individually or jointly influence lower back disorders among drivers in India. The LBD prevalence level and its relationship with prevention of activities and Medical Intervention are studied. The relationship between the individual conditions like age, educational qualification, income, body mass index, smoking habit, pan/Tobacco chewing habit, alcoholic beverages drinking habit, exercising habit, prevalence of low back pain in previous jobs, type of occupation
(driving and non-driving), type of vehicle driven by the drivers, type of seat suspension and LBD prevalence level and prevention of activities and Medical Intervention among vehicle drivers are tested.

An LBD potential environmental ergonomic risk factor model to reduce the LBD prevalence for drivers has been developed. The constructs of the model are intensity of Whole Body Vibration, Posture, Road Condition, Seat Condition, Discomfort, Drive Duration, Break Duration, Psychosocial Work Aspect and Psychosocial Personal Aspect. The instrument is designed to measure the level of prevalence of lower back disorder symptoms through the perception of vehicle drivers. The study consists of two phases. In the first phase, a preliminary study is conducted and the questionnaire is empirically validated for further use. In the second phase, a final study is conducted and the model is validated by testing the various hypotheses developed in the study. Data for both the preliminary study and final study have been collected from vehicle drivers by following the stratified random sampling procedure.

Unidimensionality, Reliability and Discriminant analysis are conducted and questionnaire is validated. Initially the instrument was designed using 79 items, for eliciting data. Out of 79 operating elements, 60 items only are retained in the instrument after statistical analysis. For conducting final study, the validated survey instrument has been used to solicit the respondents like single Decker bus drivers, Volvo AC bus drivers, Container lorry drivers, Lorry drivers and Tractor drivers. The study was limited to drivers in the state of Tamil Nadu in South India. Data collected through the structured questionnaire have been processed using SPSS 17.0
package. Descriptive statistics like mean and standard deviations were computed. Pearson’s moment correlation analysis, simple linear regression analysis, multiple regression analysis, step-wise regression analysis, t-test and one-way ANOVA were performed on variables under study.

The effects of age, educational qualification, income, body mass index, smoking habit, pan/Tobacco chewing habit, alcoholic beverages drinking habit, exercising habit, prevalence of low back pain in previous jobs, type of occupation (driving and non-driving), type of vehicle driven by the drivers, type of seat suspension on the level of LBD prevalence among vehicle drivers have been analysed and discussed in the study.

This research work has developed an LBD potential environmental ergonomic risk factor model to test the prevalence of LBD among vehicle drivers. The instrument framed in this study is an easy assessment of the LBD symptoms among vehicle drivers. The study has established the relationship between the potential environmental ergonomic risk factors and the prevalence of LBD among the vehicle drivers. The study has established the relationship between the prevalence of LBD, prevention of activities and medical intervention due to LBD prevalence. The study has brought out