



## **Prevalence of Work-Related Musculoskeletal Symptoms (WMSS) among the Motorcycle Mechanics of Lahore, Pakistan**

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### **Dear Editor-in-Chief**

Ergonomics and identification of work-related musculoskeletal symptoms (WMSS) due to poor working environment has been emerged as a profession after the World War II, particularly in the developed countries (1). These WMSS ultimately lead to development of occupational injuries and disabilities, more precisely, as work-related musculoskeletal disorders (WMSD) (2). According to Standardized Nordic Musculoskeletal Questionnaire conducted studies, WMSS and WMSD are associated with poor working environment (3, 4). The present study reports the prevalence of WMSS/WMSD among 260 motorcycle mechanics in Lahore (Pakistan), based on a self-administered questionnaire survey. The questionnaire comprises of two parts, i.e., the socio-demographic information and the Standardized Nordic Musculoskeletal Questionnaire (NMQ), previously designed under a project supported by Nordic Council of Ministers and consists of binary questions correlating to nine anatomical areas where symptoms accumulates.

For the last 12-months period, prevalence of WMSS among motorcycle mechanics was significantly high in the directly involved body organs such as shoulders, neck, low-back, wrists, ankles and elbows, i.e., 57%, 54%, 44%, 44%, 41% and 39%, respectively; compared to indirectly involved body organs such as knees, thighs/hips and upper

back, i.e. of 32%, 30%, 28% and 22% respectively ( $P<0.05$ ). Overall, the prevalence was significantly associated with the working period and age of the participants. Mechanics with working period  $>70$  hours per week was suffering from serious shoulder, low-back and neck pain. Shoulder and lower-back pain was significantly associated with 0-20 and 21-30 years age group while neck pain was associated with of 31-40 years. Wrist pain was observed with working period more than 50 hours per week without having any correlation with age. Besides, no significant correlation was found for the group with more than 40 years age. The prevalence of neck, shoulders, elbows, wrists/hands, and upper back pains were not significantly associated with literacy, marital status, monthly income, body weight (BMI), height, and experience in present occupation.

The results further revealed that the prevalence of trouble in the body parts of motorcycle mechanics significantly caused limitation in the normal work activities leading to the development of WMSD. A total of 121 (47%), 119 (46%), 108 (42%), 80 (31%), 76 (29%), 72 (28%), 69 (27%), 68 (26%), and 63 (24%) mechanics reported hindrance in normal work due to trouble in neck, shoulders, low back, elbows, wrists/hands, ankles/ feet, upper back, knees, and hips/thighs, respectively. There were serious complaints about significant

reduction in working efficiencies of shoulders among proponents of 0-20 year's age group; of wrists and hips in 21-30 years; and neck, lower back, knees, and ankles for 31-40 years age group. Moreover, no significant WMSD association was found for respondents having more than 40 years age. The order of magnitude for limitation in the normal work activities was as follows: low back (94%), neck (86%), shoulders (81%), knees (81%), hips (80%), elbows (78%), wrists/hands (67%), and ankles/feet (67%) respectively.

The study reveals that the motorcycle mechanics are vulnerable to WMSS at high prevalence rate due to poor working environment, prolonged working hours and lack of training and ergonomically oriented work practices. The high prevalence of WMSS further limited the motorcycle mechanics from their normal work activities, leading to economic losses. Therefore, a special attention must be paid at international level to protect the health and safety of the mechanics.

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