

Assessment of Work Postures and Prevalence of Musculoskeletal Disorders among Diamond Polishers in Botswana: A Case Study

Authors : Oanthata Jester Sealetsa, Richie Moalosi

Abstract : Musculoskeletal Disorders (MSDs) are reported to be amongst the leading contributing factors of low productivity in many industries across the world, and the most affected being New Emerging Economies (NEC) such as Botswana. This is due to lack of expertise and resources to deal with existing ergonomics challenges. This study was aimed to evaluate occupational postures and the prevalence of musculoskeletal disorders among diamond polishers in a diamond company in Botswana. A case study was conducted with about 106 diamond polishers in Gaborone, Botswana. A case study was chosen because it can investigate and explore an issue thoroughly and deeply, and record behaviour over time so changes in behaviour can be identified. The Corlett and Bishop Body Map was used to determine frequency of MSDs symptoms in different body parts of the workers. This was then followed by the use of the Rapid Entire Body Assessment (REBA) to evaluate the occupational postural risks of MSDs. Descriptive statistics, chi square, and logistic regression were used for data analysis. The results of the study reveal that workers experienced pain in the upper back, lower back, shoulders, neck, and wrists with the most pain reported in the upper back (44.6%) and lower back (44.2%). However, the mean REBA score of 6.07 suggests that sawing, bruiting and polishing were the most dangerous processes in diamond polishing. The study recommends that a redesign of the diamond polishing workstations is necessary to accommodate the anthropometry characteristic of Batswana (people from Botswana) to prevent the development of MSDs.

Keywords : assessment, Botswana, diamond polishing, ergonomics, musculoskeletal disorders, occupational postural risks

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