

Orthopaedics-2021 Ergonomic risks, mental agony and musculoskeletal pain among Thai informal workers

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Informal sector is one of the important industries employing a large number of people on its workforce, especially in the developing country like Thailand. The workers in the informal sector suffer from various types of occupational risks and musculoskeletal pain (MSP). Ergonomic risks and mental agony are recognized as important in the development and progression of MSP that can result in potentially huge cost in terms of health problems and economic burden for the individual and society. This study aimed to focus on the association among ergonomic risks, mental agony and MSP as well as discusses potential solution and recommended practices for minimizing the negative ergonomic and psychological consequences of the Thai informal sector.

Total of 979 home-based handicraft workers were invited to participate in the study; 174 workers gave incomplete responses resulting a final response rate of 82.23%. The analysis sample comprised of 805 workers including ten groups of handicraft profession in Chiangmai and Lumpun provinces, Thailand. Research instruments were consisted of an interview questionnaire and the ergonomic checklist. The three levels of MSP participants were compared using chi-square test. Multiple regression analyses evaluated the significant impacts of independent variables on the dependent variable.

The overall prevalence of MSP in the Thai home-based handicraft workers was 96.5%. The most common location for MSP was upper back (86.8%). Poor work methods was found to be a highest prevalence for ergonomic risks (100%) while burnout

was found to be a highest prevalence of mental risk (97.2%). Analysis with the chi-square test indicated significant differences between mental agony and ergonomic (except work method) risks for the three levels of MSP ($P < 0.001$).

The analysis with multiple regression suggested mental risks were more important than ergonomic risks in explaining variations in MSP. Workstation design ($\beta = 0.087$, $t = 2.475$ $p < 0.05$) and work methods ($\beta = 0.087$, $t = 2.190$ $p < 0.05$) were the most significant ergonomic risk factors while burnout ($\beta = 0.313$, $t = 6.273$ $p < 0.001$) was the strongest mental risk factor impacting the severity of MSP. The model explained 16.3 of the variance for MSP severity. On the other hand, anxiety ($\beta = 0.704$, $t = 26.246$ $p < 0.001$) and work methods ($\beta = 0.085$, $t = 3.177$ $p < 0.01$) were the significant risk factors impacting the severity of burnout. The model explained 51.8% of the variance in burnout severity.

The Thai informal sector is a high risk occupational sector to develop various types of MSP. The prevalence of MSP is very high. Both ergonomic risks and mental agony have significant impacts. To prevent MSP, an interdisciplinary and a multi-level approaches are needed, MSP and occupational risk assessment should be conducted from time to time. If significant risk factors are observed, appropriate interventions and management should be taken. Thai government should push more active political agendas and action frameworks for reducing MSP, mental agony and unorganized surroundings derived from informal employment.