A Cross Sectional Study on Hand Arm Vibration Syndrome among a Group of Construction Workers in Malaysia – A Preliminary Findings.

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Introduction: Hand arm vibration syndrome (HAVS) is a disabling clinical condition due to prolonged exposure to hand transmitted vibration, widely recognizable in temperate zone countries. Although the condition is felt to be presence similarly with sufficient vibration hazard exposure, it is not classically recognized in tropical countries due to lack of manifestation on vascular component. There is no published data on the condition in local setting and the prevalence in Malaysia is unknown. Objectives: This study was conducted to determine the extent of vibration exposure and prevalence of HAVS related signs and symptoms among a group of construction workers in Malaysia. Methods: All general workers contracted to the main subcontractor of the selected construction site were recruited. Questionnaire interviews followed by detailed hand evaluation were administered to 194 (84.7%) respondents. The vibration magnitudes for three commonest tools (concrete breaker, drill and grinder) were measured using 3-axis accelerometer. Subjects were regrouped according to status of vibration exposure and compared with clinical outcomes. Results: The vibration total value for concrete breaker, impact drill and grinder were 10.02 m/s², 7.72 m/s² and 5.29 m/s² respectively. The mean eight-hour time weighted average vibration magnitude \((A(8))\) in the construction site was 7.51 m/s². The general prevalence of finger coldness, finger tingling, finger numbness, musculoskeletal problem of upper limbs and handgrip weakness were 13.5%, 15.5%, 14.0%, 19.2% and 18.1% respectively. Although one subject with vibration exposure exceeding threshold limit value (TLV) gave a history of intermittent isolated fingers whiteness, he was a current smoker and the detailed description was not classical of vibration white fingers. The prevalence of neurological and musculoskeletal symptoms among the vibration exposed subjects are however significantly higher than the unexposed group. Discussion and Conclusion: The \(A(8)\) obtained from this study had exceeded the threshold limit value (TLV) adopted by Department of Occupational Safety and Health Malaysia. The exposure to hand transmitted vibration in local construction sites is likely to exceed TLV if common tools such as concrete breaker, drill and grinder are used. HAVS is likely to present in peripheral neuropathy and musculoskeletal disorders rather than vascular disorders in warm environment. The condition may be prevalent in Malaysia but is not recognized widely, probably due to lack of awareness and acquisition of proper occupational history among the medical professional.