

A Comparison of Hand-arm Vibration Syndrome between Malaysian and Japanese Workers

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Abstract: A Comparison of Hand-arm Vibration Syndrome between Malaysian and Japanese Workers: Anselm Ting Su, *et al.* Centre for Occupational and Environmental Health, Department of Social and Preventive Medicine, University of Malaya, Malaysia—The evidence on hand-arm vibration syndrome (HAVS) in tropical environments is limited. The legislation for the control of occupational vibration exposure has yet to be established in Malaysia. **Objectives:** The aim of this study was to investigate the clinical characteristics of HAVS in a tropical environment in comparison with a temperate environment. **Methods:** We conducted a series medical examinations among the forestry, construction and automobile industry workers in Malaysia adopting the compulsory medical examination procedure used by Wakayama Medical University for Japanese vibratory tools workers. We matched the duration of vibration exposure and compared our results against the Japanese workers. We also compared the results of the Malaysian tree fellers against a group of symptomatic Japanese tree fellers diagnosed with HAVS. **Results:** Malaysian subjects reported a similar prevalence of finger tingling, numbness and dullness (Malaysian=25.0%, Japanese=21.5%, $p=0.444$) but had a lower finger skin temperature (FST) and higher vibrotactile perception threshold (VPT) values as compared with the Japanese workers. No white finger was reported in Malaysian

subjects. The FST and VPT of the Malaysian tree fellers were at least as bad as the Japanese tree fellers despite a shorter duration (mean difference=20.12 years, 95%CI=14.50, 25.40) of vibration exposure. **Conclusions:** Although the vascular disorder does not manifest clinically in the tropical environment, the severity of HAVS can be as bad as in the temperate environment with predominantly neurological disorder. Hence, it is essential to formulate national legislation for the control of the occupational vibration exposure. (J Occup Health 2013; 55: 468–477)

Key words: Comparison, Hand-arm vibration syndrome, Hand-transmitted vibration, Tropical

Hand-arm vibration syndrome (HAVS) is a well-recognized health disorder in temperate climate countries because of the appearance of its peripheral circulatory disturbances, especially the “white fingers”, along with its neurological disorders such as tingling, numbness and dullness of the fingers during cold seasons^{1–6}. The condition, however, has not been clearly demonstrated in the tropical environment. Up to now, only six papers have reported cross-sectional studies among vibratory tools workers in Singapore, Indonesia, Papua New Guinea, Southern Vietnam and Malaysia^{7–12}. A recent systematic review of HAVS in the tropical environment revealed that vibration white finger has not been reported in tropical countries and that the symptoms have been predominantly neurological¹³. There is no previous study comparing the clinical outcomes of hand-transmitted vibration between the tropical and temperate environments.

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