UNIVERSITI TEKNOLOGI MARA

THE EFFECT OF WHOLE BODY VIBRATION ON LOW BACK PAIN AMONG RAPID KL BUS DRIVERS

NURUL SYAFIQAH BINTI AHMAD

Project submitted in fulfillment of the requirements for the degree of
Bachelor in Environmental Health and Safety (Hons.)

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DECLARATION BY STUDENT

Project entitled “The Effect of Whole Body Vibration on Low Back Pain Among Rapid Kl Bus Drivers” is a presentation of my original research work. Whenever contributions of others are involved, every effort is made to indicate this clearly, with due reference to literature, and acknowledgement of collaborative research and discussions. The project was done under the guidance of Project Supervisor Dr Abdul Mujid bin Abdullah. It has been submitted to the Faculty of Health Sciences in partial fulfilment of the requirement for the Degree of Bachelor in Environmental Health and Safety (Hons).

Student’s Signature:

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(Nurul Syafiqah binti Ahmad)

2014895458

930303-07-5618

Date: …….

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ABSTRACT

Background The prevalence of musculoskeletal disease has been increased tremendously among the urban bus drivers especially developing country. Increased spinal load and intervertebral disc degradation have also been identified as possible mechanisms for WBV-related LBP. **Objectives** To identify the effect of Whole Body Vibration on Low Back Pain among Rapid KL bus drivers. **Methodology** A cross-sectional study was conducted on 40 bus drivers using systematic sampling. The inclusion and exclusion criteria were selected base on ISO 2631-1. WBV Accelerometer was used to measure the WBV frequency and Standardize Nordic Musculoskeletal Questionnaire was used to identify the prevalence of low back pain among bus drivers. A chi-square test was performed to identify the effect of WBV on LBP among bus drivers. **Results** Of 40 participants, 75% having low back pain and 45% having back pain for the past 12 months. 15% and 5 % of the participants absent from work due to low back pain and back pain disorders respectively. There was a significant association between bus types and comfort seat design with $p<0.001$ and there was no significant association between WBV and LBP among bus drivers. The Daily Vibration Exposure A (8) are ranging from 0.94 ms2 to 2.38 ms2 exceeding the Exposure Action Value 0.5 ms2. **Conclusion** Although LBP is caused by multiple risk factors, the WBV may one of the contributing factors. In order to reduce the WBV, the management should consider redesigning the driver's seat, duration of work and the frequency of bus maintenance and services.

Keywords *Bus drivers, Whole Body Vibration, Low Back Pain, Musculoskeletal disorder, EAV, ELV.*