

UNIVERSITI TEKNOLOGI MARA

**VIBRATION SYNDROME
SYMPTOMS AMONG BUS
DRIVER'S UNIVERSITY IN
SELANGOR**

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In the name of Allah, The Most Gracious, The Most Merciful.

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ABSTRACT

The university's bus drivers have critical roles in being the main transport for students and are occupationally exposed to different environmental stressors. This study aimed to determine the relationship between vibration exposure level with vibration syndrome symptoms among bus drivers' diversity in Selangor. It seems evident that occupational drivers have an increased risk of developing back pain. Not only are they exposed to whole body vibration, but their work also often includes exposure to several other risk factors for low back pain (LBP), particularly the seated posture (posture). This cross-sectional study was conducted on 65 university bus drivers working in the transportation system at universities in Selangor especially Universiti Teknologi Mara, Cawangan Selangor, Kampus Puncak Alam. The subjects' exposures to whole-body vibration were measured during driving activities. Chi-Square and odd ratios were employed to vibration exposure levels with vibration syndrome symptoms among bus drivers using SPSS version 28.0. The highest exposure levels to whole-body vibration (WBV) among bus drivers are $347.63 \text{ ms}^{1.75}$, followed by $293.91 \text{ ms}^{1.75}$ and $193.17 \text{ ms}^{1.75}$. The odd ratio for smoking and non-smoking respondents either back and neck pain or not experiencing back and neck pain are 15.625% and X^2 is 12.968 meanwhile the odd ratio for smoking and non-smoking respondents either back and neck pain or not experiencing back and neck pain are 1.429% and X^2 is 0.196. Bus drivers who are smoking were easily exposed to whole-body vibration compared to bus drivers who are not smoking. Long exposure will cause low back pain and neck pain to the bus drivers. Due to the limited number of vehicles tested, vehicle variabilities such as vehicle model, the age of the vehicle, and its condition should be evaluated in future WBV exposure studies.

Keywords: *Whole Body Vibration, vibration syndrome symptoms, back pain, neck pain, bus drivers.*

CHAPTER 1

INTRODUCTION

1.1 Background

On the road every day, transportation workers are responsible for the safe delivery of passengers, materials, and goods across the United States as bus drivers ensure our kids and family members arrive safely (Peter,2016). Bus drivers are vital to our economy, but their job can put them at increased risk for health problems. According to Tamrin et al., (2007), bus drivers are a person or group who drive a bus and normally they drive their bus between stops or stations. Usually, they are exposed to whole-body vibration during their work time. Bus drivers are vulnerable to health risks as their job requires long hours of sitting while absorbing vehicle vibrations from the roads and highways (Peter, 2016). Bus design may be an important factor in determining the WBV exposure a bus driver receives (Thamsuwan, 2013). Research has also shown that whole-body vibration contributes to other negative health effects including cardiovascular, gastrointestinal, nervous, and urological disorders (Okunribido,2008). It is important to understand how to minimize exposure to whole-body vibration to reduce negative health effects on bus drivers.