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Prevalence of Hypertension and Its Associated Factors among a Group of Bus Drivers in Colombo, Sri Lanka

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Hypertension is a major public health challenge worldwide, especially in developing countries, because of its high prevalence and concomitant risks of macro- and micro-vascular complications.¹ In Sri Lanka, the prevalence of non-communicable diseases is on the rise. Around 28% of male adults are hypertensive; 25.2% are overweight, and 9.2% are obese.^{2,3} Hypertension is associated with a high mortality and a leading cause of disability-adjusted life-years.¹

Although scarce, available literature reveals an increased prevalence of risk factors related to hypertension in certain groups of heavy vehicle drivers. Smoking, obesity, physical inactivity, sedentary behavior, and consumption of alcohol and high-calorie diet are reported risk factors related to work and life style of bus drivers.^{4,5} However, most of the studies were conducted in developed countries where there is proper implementation of preventive measures. We therefore, conducted this study to assess the prevalence and associated factors of hypertension among a group of bus drivers in Colombo, Sri Lanka, a developing country in South Asia.

In this cross-sectional study, 120 male bus drivers, selected by systematic sampling from the Colombo central bus stand,

were studied. Those who reported vigorous physical activity, tobacco chewing, smoking, or drinking coffee or tea within 30 min prior to the blood pressure measurements were excluded from the study. Blood pressure, height, and weight were measured. Relevant data including age, occupation-related parameters, smoking, alcohol consumption, and other risk factors of hypertension were collected using an interviewer administered questionnaire. The associations were established using χ^2 test, *Student's t* test for independent samples, and Spearman's ρ .

The mean age of the study group was 40.4 (SD 7.7) years. They had a median work experience of 12 (IQR 7 to 16) years. According to the WHO/ISH, 2003 criteria, 36.7% (95% CI 28.0 to 45.4%) of the drivers were hypertensive. Among them, 25% (n=11) were previously diagnosed to have hypertension.

Of 120 studied drivers, 55.0% (n=66) smoked at least 5 cigarettes per day; 55.0% (n=66) consumed alcohol either weekly or monthly, and 13.3% (n=16) consumed daily (at least a quarter bottle (approximately 200 mL) of Arrack (20%–40% alcohol). However, there was no significant association between smoking or alcohol consumption with hypertension.

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Based on a recent study, the prevalence of hypertension in general male population aged over 20 (mean 46.1) years, in Sri Lanka is 28%.³ The prevalence in our study group (with a mean age of 40.4 years) was 36.7%—the mean age was lower and the prevalence of hypertension was higher in the studied drivers compared to the general male population of Sri Lanka.

We found that 35.0% (n=42) were overweight and 13.3% (n=16) were obese—a total of 48.3% (95% CI 39.3% to 57.4%) were either overweight or obese, which was considerably higher than the general population where 34.4% of adults were either overweight or obese.² There was a significant association between body mass index (BMI) and the prevalence of hypertension (p=0.021). Furthermore, a positive significant (p=0.003) association (Spearman's ρ 0.346) between the mean systolic blood pressure and BMI was noted. Similar studies also demonstrated a significant association between hypertension and obesity.^{4,6} This may be attributed to consumption of unhealthy diet, inadequate physical activity, and having a sedentary life, which promotes a positive energy balance and weight gain.

There was a significant association between the prevalence of hypertension and the average trip distance (p=0.039) and average trip duration per day (p=0.046). These variables reflected the sedentary behavior of the bus drivers during work hours and may reflect the duration of job strain. More studies are needed to further investigate this association. There were no significant associations between the prevalence of hypertension and the average hours of night driving (p=0.276), presence of fatigue (p=0.217), or presence of musculoskeletal pain (p=0.15) in studied drivers. A considerable proportion (35%) of the drivers experienced musculoskeletal

pain. Interventions are necessary to educate proper ergonomic practices among bus drivers.

Although our study was limited by its small sample size, it revealed important findings and a significantly high prevalence of hypertension. Large scale studies are needed to further study bus drivers from developing countries. Health-related preventive measures should be adopted to reduce the prevalence of modifiable risk factors of hypertension in this at risk occupational group.

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