

# Factors Associated with Uncontrolled Hypertension among Hypertensive Patients in Tuaran, Sabah, Malaysia: A Cross-Sectional Study

Rosfina Ghazali<sup>1</sup>, Khamisah Awang Lukman<sup>2</sup>, Daw Khin Saw Naing<sup>1</sup>, Fairrul Kadir<sup>3,\*</sup>, Mohammad Saffree Jeffree<sup>1</sup>, Freddie Robinson<sup>1</sup>, Nelbon Giloi<sup>1</sup>, Mohammad Yusof Ibrahim<sup>1</sup>, Urban John Arnold D'souza<sup>4</sup>, George George Mathew<sup>5</sup>

<sup>1</sup> Community and Family Medicine Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

<sup>2</sup> Centre for Occupational Safety and Health, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

<sup>3</sup> Medicine Based Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

<sup>4</sup> Biomedical and Therapeutic Department, Faculty of Medicine and Health Sciences, Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia

<sup>5</sup> Tamparuli Health Clinic, Tuaran, Sabah, Malaysia

\*Corresponding author: sfairrul.kadir@ums.edu.my

## ABSTRACT

**Introduction:** Hypertension prevalence is increasing globally and has become a major issue of disease as it is a major cause for cerebrovascular, kidney and cardiovascular diseases. Even among treated patients, there is a disproportional of blood pressure control causing a major public health challenge. This study is aimed to decide on the prevalence of uncontrolled hypertension and its associated factors among hypertensive patient attending hypertension clinic at primary health clinics in Tuaran district. This study is justified by the fact that uncontrolled hypertension leads to high mortality, morbidity and even premature death. **Methods:** This study is a cross-sectional study among 460 hypertensive patients attending three primary health clinics in Tuaran district, Sabah. Data were collected using structured modified questionnaires through interviews, physical examinations and patient's medical records. Types of data collected include socio-demography, lifestyle behavior, physical examination, co-morbidity status and medical adherence. Data analysis done using SPSS version 24.0. **Results:** Prevalence of uncontrolled hypertension was 45.9%. The study found that factors significantly associated with uncontrolled hypertension with  $p < 0.05$  were lower medication adherence (OR 1.834, 95% CI: 1.256, 2.678), presence of diabetes mellitus (OR 3.436, 95% CI: 2.104, 5.613), high BMI status (OR 1.975, 95% CI: 1.305, 2.990) and male gender (OR 2.1, 95% CI: 1.442, 3.061). **Conclusion:** The prevalence of uncontrolled hypertension was found in nearly half of the study population. The present of other associated factors such as lower hypertensive medication compliance, diabetes mellitus and obesity had a higher impact on uncontrolled hypertension patients in the study group. Further study is needed to address attitude change, extra guidance, coaching and empowerment issues in the treatment of hypertensive patients.

**Keywords:** Hypertension, Prevalence, Diabetes mellitus