

# Sociodemographic Characteristics among Hypertension in Type 2 Diabetes Mellitus Client Attending Kuala Pilah Health Clinic, Negeri Sembilan

Siti Munisah Mohd Shoaib<sup>1</sup>, Noraliza Radzali<sup>1</sup>, Azline Abdilah<sup>1</sup>,

<sup>1</sup> Kuala Pilah Health District, Negeri Sembilan State Health Department, Ministry of Health Malaysia

Corresponding author's email: [dr\\_sitimunisah@moh.gov.my](mailto:dr_sitimunisah@moh.gov.my)



## SUMMARY

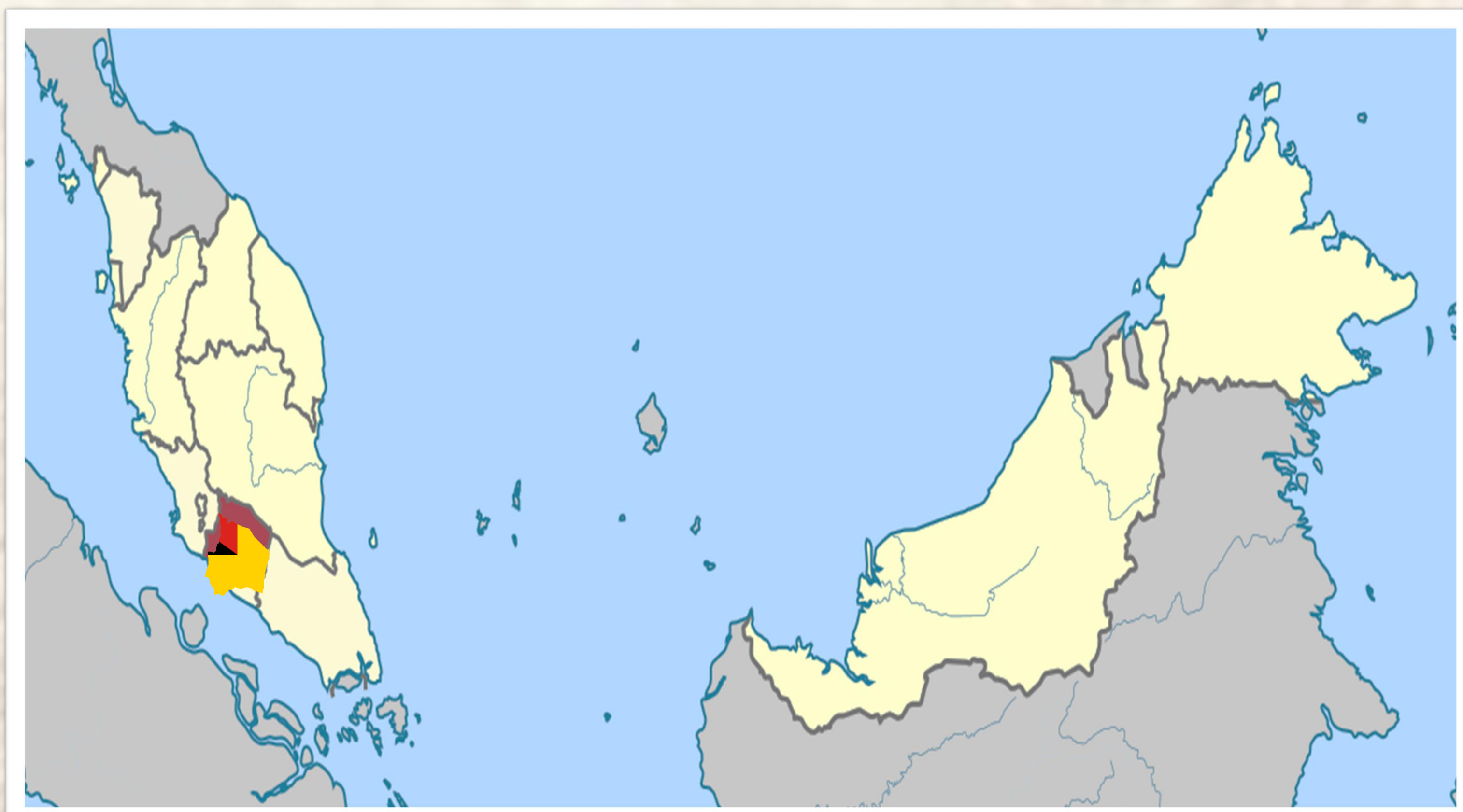
Non-communicable disease (NCD) is the leading cause of death and health burden not only in Malaysia but worldwide. This study aimed to determine sociodemographic characteristics among hypertension patients with type 2 diabetes mellitus attending Kuala Pilah Health Clinic, Negeri Sembilan. Clients' blood pressure was regularly measured during follow-up, and those with blood pressures of more than 140/90 mmHg were then treated accordingly by medical personnel attending. The majority of hypertension in type 2 diabetes mellitus occurs in the elderly. Hypertension raises the likelihood of macrovascular and microvascular diabetes complications, so optimal blood pressure should be achieved in all diabetes patients.

### Keywords

Hypertension, type 2 diabetes mellitus, prevalence, sociodemographic characteristics, Kuala Pilah

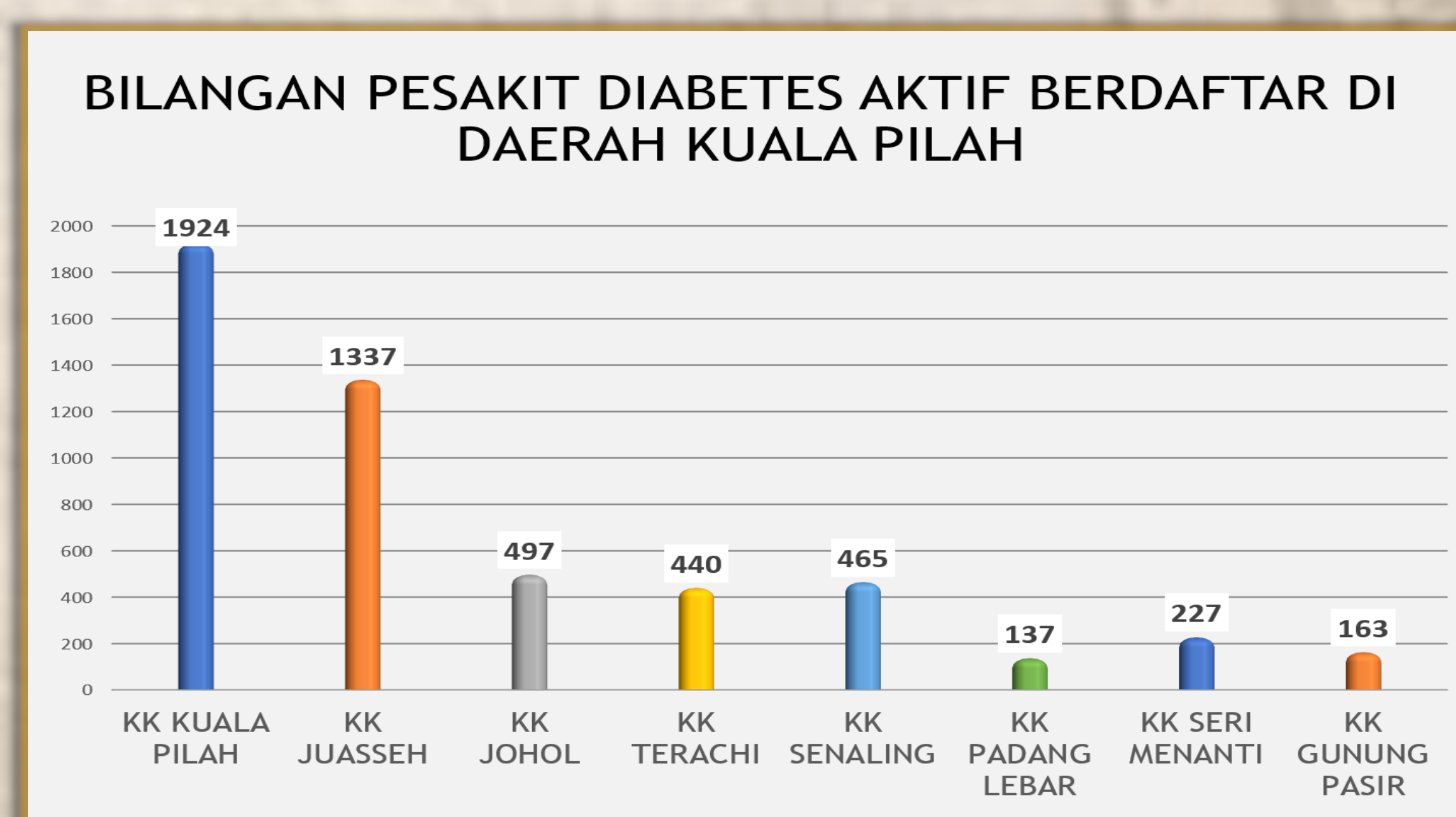
## INTRODUCTION

A major cause of premature death worldwide is hypertension. According to the World Health Organisation (WHO), it is estimated that 1.28 billion adults living in low- and middle-income countries worldwide have hypertension (1). Malaysia, being a middle-income country, also has a high prevalence of hypertension among people aged 18 and older. According to the National Health Morbidity Survey in 2019, the prevalence of hypertension among 18-year-olds and older in Negeri Sembilan was 31.6% (2). However, there is no sociodemographic data on hypertension in diabetes mellitus patients. Diabetes is well recognized to increase the risk of death from renal failure, coronary artery disease, and cerebrovascular illness, and the risk may increase up to fourfold if hypertension is present (3). Thus, this study was aimed at determining sociodemographic characteristics among hypertension patients with type 2 diabetes mellitus attending Kuala Pilah Health Clinic, Negeri Sembilan.



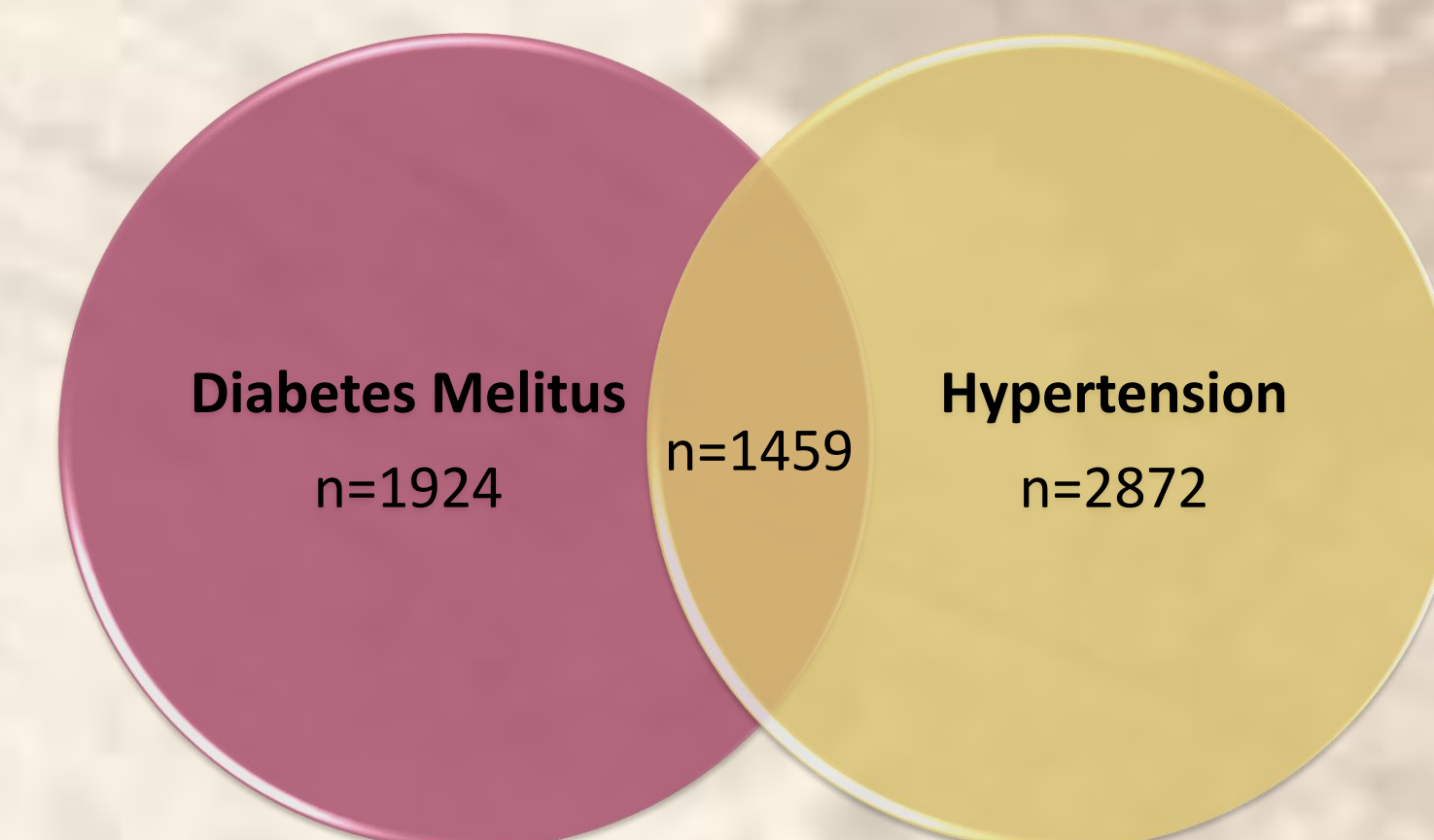
## MATERIALS AND METHODS

A cross-sectional study was conducted among all active diabetes mellitus clients attending Kuala Pilah Health Clinic, Negeri Sembilan, from January 2022 to April 2023. Client's blood pressure was regularly measured during follow-up, and those with blood pressures of more than 140/90 mmHg were then treated accordingly by medical personnel attending. Clients who had been diagnosed with hypertension were recorded in the National Diabetic Registry (NDR). Data for a total of 1924 clients with type 2 diabetes mellitus were collected from the NDR.



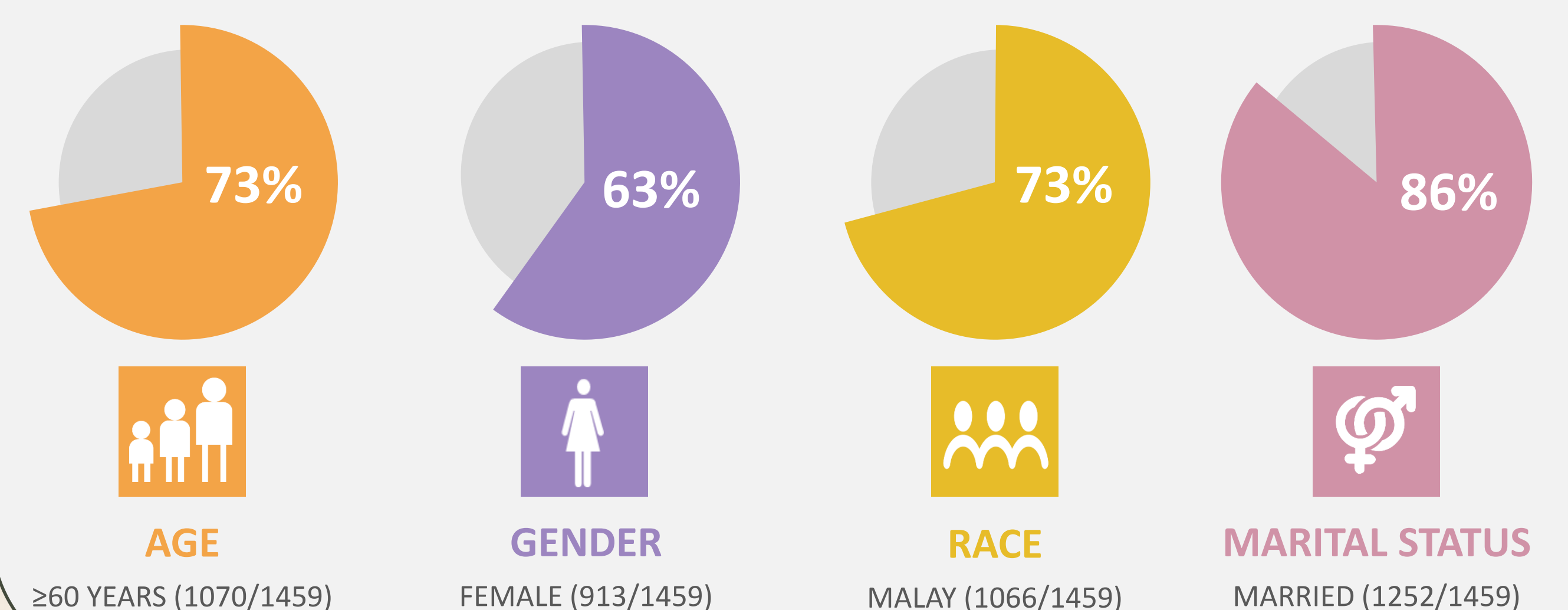
## RESULTS AND DISCUSSION

Among the 1,924 type 2 diabetes mellitus patients attending Kuala Pilah Health Clinic, a total of 1,459 (75.83%) also had hypertension, using the definition of hypertension based on a pre-existing history of hypertension. The results show that the majority of those are in the elderly group, age 60 and above, which is 73.34%. This finding is consistent with a cross-sectional study conducted in 140 randomly selected adults with a prospective follow-up descriptive study carried out in Kelantan from January to December 2008, and a prospective cohort study conducted at Al-Faiha Diabetes and Endocrine Centre in Basrah from August 2008 to April 2011 (4).



In our study, among 1,459 clients, 37.42% were male and 62.58% were female, consistent with the findings in other studies carried out in Kelantan (4). The present study showed that among diabetes patients, the majority of hypertension was present in Malay (73.06%), followed by Chinese (20.01%), Indians (6.72%), and others (0.21%). This finding is comparable to findings reported in other studies. The result may perhaps be due to the fact that Malays are the majority ethnic group in Malaysia. Lastly, the majority of hypertension in type 2 diabetes mellitus clients is in the married group (85.81%).

### SOCIDEMOGRAPHIC CHARACTERISTICS AMONG MAJORITY OF HYPERTENSION IN TYPE 2 DIABETES MELLITUS CLIENT ATTENDING KUALA PILAH HEALTH CLINIC



## CONCLUSION

According to our study, the majority of diabetes patients attending Kuala Pilah Health Clinic have hypertension (75.83%). Few studies showed the presence of hypertension raises the likelihood of macrovascular and microvascular diabetes complications in these patients. Thus, optimal blood pressure should be achieved in all diabetes patients.

## REFERENCES

- Organization WH. [Online].; 2023 [cited 2023 05 11. Available from: <https://www.who.int/news-room/fact-sheets/detail/hypertension>
- National Health and Morbidity Survey 2019. Non-Communicable Diseases: Risk Factors and other Health Problems. Shah Alam: Institute for Public Health and Institute for Health Systems Research; 2019
- Unadike BC, Eregie A, Ohwovoriole AE. Prevalence of Hypertension Amongst Persons With Diabetes Mellitus in Benin City, Nigeria. Nigerian Journal of Clinical Practice. 2011 Jul-Sep; 14(3): 300-302
- Abougambou, S.S.I., Abougambou, A.S. A Study Evaluating Prevalence Of Hypertension And Risk Factors Affecting On Blood Pressure Control Among Type 2 Diabetes Patients Attending Teaching Hospital In Malaysia. Diabetes & Metabolic Syndrome: Clinical Research & Reviews. 2013 Apr-Jun; 7(2): 83-86. doi:10.1016/j.dsx.2013.02.019
- Mansour AA. Prevalence and Control of Hypertension in Iraqi Diabetic Patients: A Prospective Cohort Study. The Open Cardiovascular Medicine Journal. 2012; 6: 68-71. doi: 10.2174/1874192401206010068