

# DIABETES MELLITUS IN KEDAH: FACTORS ASSOCIATED WITH GOOD GLYCAEMIC CONTROL

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## 1 INTRODUCTION

Diabetes mellitus is a chronic metabolic disorder that affects millions of people worldwide. It is characterized by high blood glucose levels due to insufficient insulin production or action. Among the states in Malaysia, Kedah had the highest prevalence of diabetes mellitus at 24.6%. Poor glycaemic control can lead to serious complications such as cardiovascular disease, kidney failure, blindness and amputation. Therefore, it is important to identify and address the factors that influence glycaemic control among diabetic patients. The aim of this article is to explore the factors associated with good glycaemic control among patients with type 2 diabetes mellitus in Kedah. The article will discuss the demographic and clinical characteristics, and how they relate to the glycaemic control.

## 2 MATERIALS AND METHODS

Diabetes mellitus is a chronic metabolic disorder that affects millions of people worldwide. It is characterized by high blood glucose levels due to insufficient insulin production or action. Among the states in Malaysia, Kedah had the highest prevalence of diabetes mellitus at 24.6%. Poor glycaemic control can lead to serious complications such as cardiovascular disease, kidney failure, blindness and amputation. Therefore, it is important to identify and address the factors that influence glycaemic control among diabetic patients. The aim of this article is to explore the factors associated with good glycaemic control among patients with type 2 diabetes mellitus in Kedah. The article will discuss the demographic and clinical characteristics, and how they relate to the glycaemic control.

The data were analysed using Statistical Package for the Social Sciences, SPSS (version 26.0) from International Business Machines, IBM. The bivariate analysis was conducted using simple logistic regression to determine the association between the independent variables and the glycaemic control. The significance level in this study was set at  $p < 0.05$ .

## 3 RESULTS AND DISCUSSIONS

This study analysed the sociodemographic and clinical characteristics of 1945 diabetic patients in Kedah and their glycaemic control status. These findings are consistent with previous studies that reported majority of diabetic patients as showed in figure 1 had poor glycaemic control (Hassan et al., 2021; Saher et al., 2022).

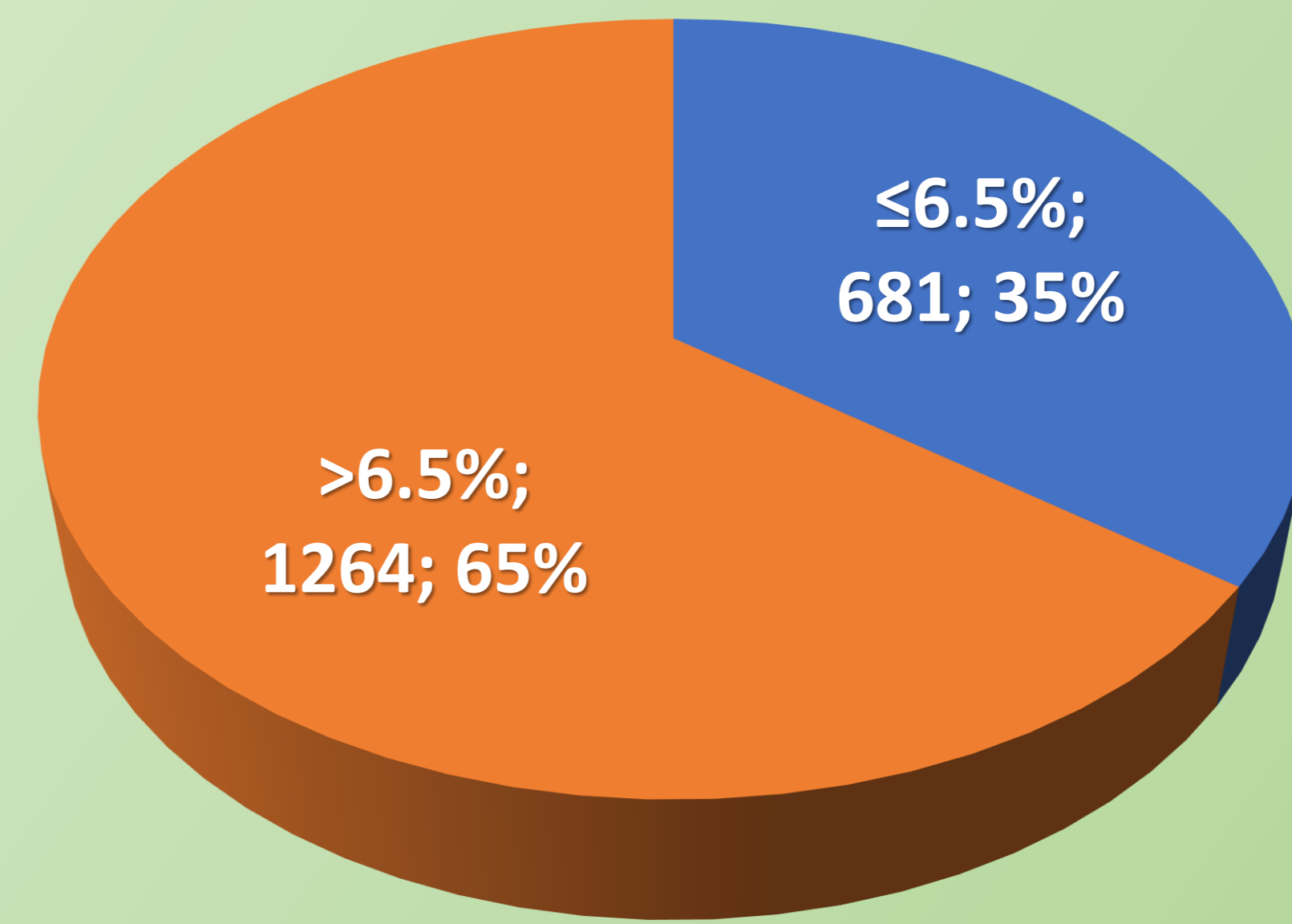


Figure 1: Distribution of Diabetic Patient based on Glycaemic Control

In general, the findings of bivariate analysis suggest that age, Chinese and Indian ethnicity, and lipid profile are important factors that influence glycaemic control among diabetic patients in Kedah. After considering other factors, older age (adjusted OR = 1.039, 95% CI = 1.028-1.049,  $p < 0.001$ ), non-Indian ethnicity (adjusted OR = 1.613, 95% CI = 1.245-1.801,  $p < 0.05$ ) and lower triglycerides (adjusted OR = 1.235, 95% CI = 1.108-1.343,  $p < 0.001$ ) remain significant. The findings of this study are consistent with previous studies that reported similar associations of sociodemographic and clinical characteristics with glycaemic control among diabetic patients in Malaysia and other countries (Ghani et al., 2020; Hassan et al., 2021).

However, some studies also reported other factors that affect glycaemic control, such as duration of diabetes, medication adherence, self-care behaviours, psychological factors and quality of care (Cheng, Wang, Lim, & Wu, 2019; Kakade, Mohanty, & Rai, 2018). All those factors are not analysed in this study due to limited data. Therefore, a comprehensive approach that considers all these factors is needed to improve glycaemic control among diabetic patients.

## 4 CONCLUSION

In conclusion, this study showed that age, ethnicity and triglyceride levels were important factors associated with glycaemic control among diabetic patients in Kedah. Older age group, non-Indian ethnicity, and lower triglyceride levels have higher odd of having better glycaemic control.

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