

UNIVERSITI TEKNOLOGI MARA

**THE ASSOCIATION BETWEEN THE RISK OF DIABETES
MELLITUS (T2DM), EATING PATTERN BEHAVIOUR,
PHYSICAL ACTIVITY AND STRESS LEVEL AMONG THE
ADULT POPULATION IN SELANGOR**

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ABSTRACT

Background: This study examines the association between the risk of Type 2 Diabetes Mellitus (T2DM), eating behaviour patterns, physical activity levels, and stress levels among the adult population in Selangor. With the increasing prevalence of T2DM posing a significant public health challenge, understanding these associations is crucial for effective prevention strategies. **Method:** This cross-sectional study utilized self-administered questionnaires to collect data on socio-demographic characteristics, risk of Type 2 Diabetes Mellitus (FINDRISC), eating behaviour pattern (EBPQ), physical activity (IPAQ), and perceived stress levels (PSQ). **Results:** Based on FINDRISC, 84.08% of participants are classified as low risk of T2DM, whereas 15.92% are high-risk. Emotional eating is more common among individuals at high risk of T2DM, with a significant relationship ($p=0.015$). Furthermore, a substantial adverse relationship exists between a low-fat diet and the risk of T2DM ($p=0.001$). Meal planning ($p=0.048$) also has a substantial protective effect against T2DM. Meal skipping ($p=0.032$) also contributes to a high risk of T2DM. There is a negative correlation ($r_s = -0.07$, $p=0.323$) between physical activity and the risk of T2DM; however, it is not significant. Meanwhile, the stress level ($p=0.066$) is not significantly associated with the risk of diabetes. Nonetheless, there is an inverse relationship between the variables ($r_s = -0.16$, $p < 0.05$). **Conclusion:** The study's findings indicate that a higher risk of type 2 diabetes (T2DM) is linked to emotional eating, following a low-fat diet, meal planning, and insufficient physical activity. Therefore, promoting healthier lifestyles with balanced eating habits and regular exercise is essential. Besides, it provides essential intervention strategies for reducing T2DM risk in the population.

Keywords: Type 2 Diabetes Mellitus (T2DM), Eating behaviour patterns, Physical activity level, Stress level, Selangor population

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CHAPTER ONE

Introduction

1.1 Research Background

Diabetes Mellitus (DM) is a chronic disease that is characterised by an increase in blood sugar levels. The diagnosis of diabetes is based on three clinical parameters: fasting blood sugar level (regular FBS: Less than 100 mg/dl or between 3.9 mmol/L and 5.6 mmol/L), Hemoglobin A1c (normal HbA1c: Below 5.7%) and the 2-hour oral glucose tolerance test (normal OGTT: Less than 140mg/dL or <7.8 mmol/L). The rate of diabetes incidence has been an alarming increase, presenting a worrisome vision of the global threat to the public's health, along with the prevalence of other non-communicable diseases, including obesity, hypertension, and hyperlipidemia. In 2021, the number of undiagnosed diabetes cases remains high; it was estimated that 240 million people are living with this condition unknowingly (Ogurtsova et al., 2022).

Additionally, the current prevalence of diabetes cases is predicted to triple by the year 2030. Both genetic and environmental elements influence the onset of this condition. However, studies suggest that unhealthy dietary habits and physical inactivity can exacerbate the condition beyond expectations (Galicia-Garcia et al., 2020). As stated by the World Health Organization (WHO), Diabetes Mellitus (DM) has impacted millions of people worldwide, resulting in 1.6 million deaths each year (Ismail et al., 2023). Among these fatalities, Saeedi et al. (2020) mentioned in the study that an estimated 4.2 million are observed in adults aged 20 to 79 years, establishing diabetes as a significant contributor that contributes to 11.3 % of global mortality. It is in line with the data released from the IDF Diabetes Atlas 10th edition in 2021, which revealed that 6.7 million individuals experienced death linked to diabetes and its complications (Saeedi et al., 2020 & IDF Diabetes Atlas (10th edition), 2021). Of these, 45% were linked to insufficient intake of essential foods and nutrients and high consumption of unhealthy food such as processed food and high sugar intake (Wein et al., 2017). Stress is a general phase