

UNIVERSITI TEKNOLOGI MARA

**THE ASSOCIATION BETWEEN DIETARY INTAKE, DIETARY
INFLAMMATORY INDEX AND EATING BEHAVIOUR WITH MENTAL
HEALTH OF PREGNANT MOTHERS IN KUALA SELANGOR**

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ABSTRACT

Maternal mental health during pregnancy is a crucial determinant of both maternal and child well-being. Emerging evidence suggests that dietary factors and eating behaviours may influence psychological outcomes, particularly through inflammatory mechanisms. This study aimed to examine the association between dietary intake, Dietary Inflammatory Index (DII), and eating behaviour patterns with depression, anxiety and stress among pregnant mothers in Kuala Selangor. A cross-sectional study was conducted among 118 pregnant women attending antenatal clinics in Kuala Selangor. Data were collected through structured questionnaires including the Food Frequency Questionnaire (FFQ), Modified-Malay Eating Behaviour and Patterns Questionnaire (M-EBPQ), and the Depression, Anxiety, and Stress Scale (DASS-21). DII scores were computed based on nutrient intake, and statistical analyses were conducted using binary logistic regression. In the unadjusted model, participants with a pro-inflammatory diet had greater odds of experiencing depression compared to those with an anti-inflammatory diet; however, this association was not statistically significant (OR = 4.37, 95% CI: 0.55–34.85, $p = 0.16$). No significant associations were observed between DII and anxiety or stress. Among eating behaviour constructs, low-fat eating was initially associated with higher odds of stress in the unadjusted model but became non-significant after adjustment. Additionally, no significant associations were found between overall dietary intake levels and mental health outcomes. The findings suggest that a pro-inflammatory diet may contribute to increased risk of depression in pregnant women, highlighting the importance of anti-inflammatory dietary strategies during pregnancy. Further research is warranted to explore causality and to develop tailored nutritional interventions for maternal mental health.

Keywords: dietary intake, dietary inflammatory index (DII), eating behaviour, mental health, pregnant women, maternal nutrition

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CHAPTER ONE

INTRODUCTION

In this study, the associations of dietary intake, Dietary Inflammatory Index (DII) and eating behaviour with the mental health of pregnant mothers in Kuala Selangor were investigated. This chapter will cover the background of the study, problem statements related to the study, main and specific objectives, research questions, hypothesis, significance of the study and assumptions.

1.1 Background of Study

Pregnancy is the most fragile state in a woman's life that entails biological, psychological, and social changes in the woman's mental health. According to World Health Organization (WHO), health is, in general, defined as a state of complete physical, mental and social well-being, and not merely the absence of disease or disability. A healthy fetus is associated with a physically and mentally healthy mother (Flor-Alemany et al., 2022). Adequate nutrition plays a fundamental role in ensuring optimal pregnancy outcomes and the long-term well-being of a child (Marshall et al., 2022).

Postpartum depression is a common issue post-delivery. The majority (40%) of depressive episodes that are recognized after birth start early postpartum—within 4–6 weeks of delivery—with many episodes starting before or during pregnancy (26.5%) or during pregnancy (Abdelhafez et al., 2023). Perinatal anxiety disorders can also be seen, with a 15.2% total pregnancy prevalence and a 9.9% postpartum prevalence. The studies also indicate that it is important to note that maternal mental health during pregnancy has been associated with several unfavourable outcomes, including preterm delivery, neonatal hypoglycemia, poor neurodevelopmental outcomes, and disturbed attachment. This