

UNIVERSITI TEKNOLOGI MARA

**RELATIONSHIP BETWEEN MATERNAL ANAEMIA HISTORY AND
STUNTING OF CHILDREN BELOW FIVE YEARS OLD IN
SELANGOR**

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ABSTRACT

Introduction: Stunting remains a major public health issue in Malaysia, particularly among children under five years old. Maternal anaemia during pregnancy has been proposed as a contributing factor, but evidence in the local context is limited. This study aimed to determine the relationship between maternal anaemia history and stunting in children aged ≤ 60 months, and to identify significant maternal and child predictors.

Methods: A cross-sectional study was conducted among 170 mother–child pairs attending four health clinics in Klang and Gombak, Selangor using purposive sampling. Data were collected through face-to-face interviews with mothers, using a validated questionnaire. Maternal sociodemographic characteristics, haemoglobin levels during pregnancy, and child-related factors were collected. Stunting was determined using WHO Anthro Survey Analyser. Data were analysed using descriptive statistics, chi-square tests, and binary logistic regression.

Results: The prevalence of stunting was 22.9%. Children of mothers with moderate–severe anaemia were more likely to be stunted than those with mild anaemia (32.9% vs 14.3%, $p = .016$). Logistic regression showed that unemployed mothers (OR = 0.084, 95% CI: 0.020–0.348), M40 household income (OR = 0.178, 95% CI: 0.058–0.548), moderate–severe maternal anaemia (OR = 3.203, 95% CI: 1.150–8.917), male gender (OR = 9.908, 95% CI: 2.369–41.431), and low birth weight (OR = 0.043, 95% CI: 0.005–0.330) were significant predictors of stunting ($p < .05$).

Conclusion: Stunting prevalence among children of mothers with a history of anaemia in Selangor exceeds the national average. Severity of maternal anaemia, alongside socioeconomic and biological factors, plays a key role in child growth outcomes. Interventions in this population should prioritise anaemia prevention and management during pregnancy, targeted support for low-income households, and early monitoring of male and low birth weight infants.

Keywords: stunting, maternal anaemia, child growth, predictors, Selangor, Malaysia

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CHAPTER 1: INTRODUCTION

1.1 Research Background

Globally, the prevalence of stunting, wasting, and underweight among children under five is reported at 22.3%, 6.8%, and 15.4%, respectively, with the highest rates in Africa and Asia (WHO, 2023). In Asia, the number of stunted children decreased from 106.8 million to 76.6 million—a 28% reduction over ten years (WHO, 2023). Southeast Asia saw a decline from 17.2 million to 14.4 million stunted children between 2012 and 2022, but it remains the second highest region in Asia for stunting prevalence at 26.4%, just behind South Asia at 30.5%. In Malaysia, stunting was the most common form of undernutrition among children under five in 2022 at 21.2%, followed by underweight at 15.3% and wasting at 11.0% (IPH, 2023).

On the other hand, anaemia remains a public health issue in Malaysia, particularly among women of reproductive age. It is a common comorbidity during pregnancy, with the World Health Organization (WHO) reporting that 36.5% of pregnant women globally suffered from anaemia in 2019. In Malaysia, the prevalence among pregnant women was 31.0% according to WHO. Recent local data from the National Health and Morbidity Survey (NHMS) 2022 indicates that the prevalence of anaemia among women aged 15 to 49 is 19.3% (IPH, 2023).

Numerous studies have explored the factors linked to stunting, underweight, and wasting in children, primarily in South Asia, particularly India and Pakistan, with some research also conducted in Africa. Neighbouring countries like Vietnam, the Philippines, and Indonesia have reported similar issues, as Southeast Asians are significantly affected by child malnutrition. Key factors associated with these conditions include low birth weight (LBW), preterm birth, short maternal stature, lack of maternal education, low household income, parasitic infections, and inadequate water sources (Siti Fatimah et al., 2018; Sartika et al., 2021). Additionally, in latest article written by Gebreegziabher and Sidibe (2024), they found that children aged 25 to 29 months whose mothers were anaemic were 1.47 times more likely to be stunted. Similarly, a study carried out in Pakistan found that children of mothers with mild anaemia were more likely than non-anaemic mothers to experience anthropometric failure, stunting, or wasting (Siddiqa et al., 2024).

Although several studies have been done to investigate the association between maternal anaemia and the nutritional status of children, the results are inconsistent, with only seven articles confirming the significant association between the two variables. Two articles