Research project of counterparts funded at UNJA

Name	Counterpart	Title
Ummi Kalsum, Zulkifli Alamsyah	C07	Health status of female oil palm farmers and feeding pattern of children related to malnutrition (stunting) in under five-year-old children of smallholder households in Muaro Jambi Regency, Jambi Province

Research summary

Jambi Province has more than 1,000 hectares of oil palm plantations and ranks 6th in Indonesia in terms of acreage. In Jambi province, Muaro Jambi has the largest oil palm plantations, it has grown very rapidly in the last ten years. The expansion of oil palm plantations has a major impact on the environment, flora, fauna, and socio-economic changes such as the level of family welfare, including health. Oil palm plantations are usually located far from the city center, which means access to health services is quite difficult. Changes in women's work from the domestic sector to the public sector, as plantation workers, have an impact on women's health and nutritional status, also causing changes in feeding practices. This results in nutritional deficiencies such as being underweight, having chronic energy deficiency (CED), anemia for women, and malnutrition (stunting) in children. Disruption to the health status of the mother is associated with an increased risk of stunting in her under-five children. Stunting is a condition of failure to grow and develop in children due to a lack of nutritional intake for a long time, so children are shorter than their age. Stunting is still a serious public health problem in Indonesia and Jambi Province. The prevalence of stunting in Muaro Jambi regency experienced a significant increase from 13.5% in 2019 (the lowest among 11 regencies/cities) to 27.2% (the highest) in 2021. The impact of stunting is disruption of brain development, physical growth, intelligence, and metabolic disorders in the body. While the long-term impact is getting sick easily, the emergence of diabetes, heart and blood vessel disease, obesity, cancer, stroke, disability in old age, and poor quality of work contribute to low productivity. There are many causes of stunting, which come from various factors, from children, mothers, and families to environmental health conditions. Food intake and infectious diseases; feeding practices and food diversity; food security; sanitation; and the root of the problem is poverty (family socioeconomic level). Many program policies have been carried out for the handling and prevention of stunting, as well as convergence in accelerating the reduction and prevention of stunting nationally, but have not succeeded in reducing the prevalence of stunting to < 20% in under five-year-old children. The role of women as mothers for the health of themselves and their families, especially their toddlers, is very important.

This study aimed to analyze the relationship between maternal nutritional status, maternal health, and feeding practices for toddlers and the incidence of stunting in oil palm farmer households in Muaro Jambi Regency, Jambi Province.

The research method was a cross-sectional study. Mothers and toddlers from 227 oil palm farmer households from 8 villages have been randomly selected with the dominant community working as oil palm farmers in Muaro Jambi regency. The villages selected (Sungai Dayo, Mulya Jaya, Sumber Jaya Bahar Utara, Sumber Jaya, Tarikan, Ladang Panjang, Parit, and Tanjung Katung) were also research locations of subproject C07 of EFForTS. Data collection was conducted through interviews and anthropometric measurements (height, weight, and mid-upper circumference). The independent variables were maternal nutritional status (body mass index and chronic energy deficiency), morbidity (health status of the mother), and feeding patterns. The dependent variable was stunting, which was measured using height/age < -2 standard deviation. Data analysis used multiple logistic regression at 95% confidence intervals.
The prevalence of stunting in toddlers was 30.4%. The nutritional status of the mother was 4,8% underweight, but overweight was 48,9%, and CED was 8.4%. Poor feeding patterns reached 38.3%. The morbidity of mothers with infectious diseases was 10.1% (data not shown).
Factors related to stunting incidence were maternal nutritional status (underweight, overweight, or obese mothers), chronic energy deficiency, and poor feeding patterns. The dominant factor of stunting in toddlers of oil palm farming families was the CED of mothers, after being controlled by the nutritional status of mothers and feeding patterns. CED mothers have a 2.15 times greater risk of their children suffering from stunting than mothers who are not CED (healthy) after being controlled by their nutritional status and feeding patterns (Table 1).

This final model proved to be significant, with an omnibus P-value of 0.013 and an overall percentage of 70%. It means that the model formed can predict the occurrence of stunting in toddlers by 70%, and the rest is explained by variables that have not been examined in this study.

Table 1. The final model of determinants of stunting in toddlers of oil palm farmer household in Muaro Jambi Regency, Jambi Province, Indonesia 2022

No.	Variables	B	*P-Value*	Prevalence Odds Ratio	95% CI
1.	Maternal nutritional status		0.052		
	Underweight	0.245	0.737	1.27	0.30–5.33
	Overweight to obesity	0.759	0.015	2.13	1.15–3.93
2.	Chronic Energy Deficiency	0.767	0.169	2.15	0.72–6.41
3.	Feeding patterns	0.467	0.123	1.59	0.88–2.89
	Constant	-1.732	0.140		

We conclude that the CED of mothers increases the risk for their children to suffer from stunting as well as being underweight, overweight, and having poor feeding patterns compared to mothers without CED (healthy mothers) in oil palm smallholder farmer households. It is recommended to apply a healthy lifestyle, eat a balanced and diverse nutritional diet for the mother, and give good attention to her feeding practices for her children. Improving nutrition and health education is very necessary for mothers.