

MANAGING THIAMINE DEFICIENCY AT NURUL SAADAH CURE AND CARE REHABILITATION CENTRE (CCRC), PENDANG, KEDAH

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Introduction

Thiamine (Vitamin B1) deficiency remains a recurring health problem among detainees and inmates in Malaysia's Cure and Care Rehabilitation Centres (CCRCs), with a reported prevalence ranging from 3.2% to 74.0%. In August 2022, a similar episode occurred at the Nurul Saadah CCRC in Pendang, Kedah, resulting in five symptomatic cases and one fatality. This study aims to identify nutritional gaps and evaluate the effectiveness of remedial interventions implemented at the centre.

Methodology

Nurul Saadah CCRC is a privately managed rehabilitation centre approved by the National Anti-Drugs Agency (NADA). Established in 2015, it accommodates 197 residents aged 10–59 years, with a treatment duration of six months. Convenience sampling was used to select symptomatic cases. A case series analysis involving ten symptomatic residents (5% total population) aged 20–54 years was selected for clinical and dietary assessment. Dietary assessments were carried out by nutritionist using a 3-day 24-hour dietary recall and a simplified Food Frequency Questionnaire (FFQ). Nutrient analysis was conducted using NutritionistPro™ software. Immediate and long-term remedial actions were documented and evaluated over a two-year follow-up period.

Results

Analysis of the 24-hour dietary recall and food frequency data showed that the average daily intake among residents was as follows; 1,399 kcal of energy, 33.87 g of protein, and 0.59 mg of thiamine. A comparative analysis found this average nutrient intake to be significantly lower than the Recommended Nutrient Intakes for Malaysia (RNI, 2017). As an immediate response, thiamine and B-complex supplements were immediately provided using a DOTS, and a new thiamine-rich menu was developed and proposed to meet the residents' nutritional needs.

In the long term, technical advisory support was provided to strengthen dietary planning, food safety, and hygiene monitoring. The effectiveness of the intervention was assessed through annual monitoring visits, with the latest conducted in May 2025. No new cases of beriberi have been reported since the intervention, indicating successful containment of the deficiency.

Discussion

The finding of inadequate energy, protein, and thiamine intake has serious implications for the health of residents, particularly in a rehabilitation setting. Chronic thiamine deficiency can lead to severe neurological and cardiovascular complications, as evidenced by the reported fatality. Low calorie and protein intake can also impair physical and mental recovery and reduce the effectiveness of rehabilitation programs.

However, limitations included the small sample size and lack of biochemical follow-up for all residents. A key future challenge will be ensuring full adherence to the proposed menu by the food service provider at the centre.

Conclusion

Early detection, timely supplementation, and improved dietary planning proved effective in controlling the thiamine deficiency outbreak at Nurul Saadah CCRC. Moving forward, ongoing menu monitoring, capacity building for staff, and a standardized nutrition plan are essential to prevent future deficiencies and protect the health of residents.

Keywords: CCRC, thiamine, Recommended Nutrient Intake (RNI)