

ABSTRAK

Efek Pemberian Makanan Tambahan Tinggi Protein terhadap Pertumbuhan Anak *Stunting* usia 6-59 bulan di Puskesmas Bandarharjo

Atika Rahmi Hendrini, Rina Pratiwi, Maria Mexitalia Setyawati
Bagian Ilmu Kesehatan Anak Fakultas Universitas Diponegoro
RSUP Dr. Kariadi, Semarang

Latar belakang : Protein hewani memiliki peran penting dalam pertumbuhan dan perkembangan, serta mempengaruhi aktivitas Faktor Pertumbuhan Insulin-1 (IGF-1) dan mTORC. Kualitas protein hewani yang rendah mempengaruhi kualitas asam amino, yang dapat menjadi faktor risiko terjadinya *stunting*. Penyerapan protein hewani pada balita di Indonesia hanya memenuhi kurang dari 80% dari Rasio Kecukupan Protein. Nilai prevalensi *stunting* di Pusat Kesehatan Bandarharjo adalah 4,9%. Pemberian makanan tambahan dengan komposisi rasio energi protein (PER) 10-16% terbukti dapat meningkatkan kondisi *stunting*.

Tujuan : Mengetahui efek PMT tinggi protein terhadap pertumbuhan anak *stunting* usia 6-59 bulan di Puskesmas Bandarharjo.

Metode : Desain penelitian adalah *total sampling pretest-posttest* kuasi eksperimental dengan anak *stunting* usia 6-59 bulan. Subjek diberikan makanan tambahan dengan komposisi energi 1440 kkal, karbohidrat 220 gram, protein 25 gram, lemak 50 gram, PER 10-18% selama 90 hari dan dilakukan pengukuran berkala antropometri, *food recall*, kejadian infeksi, serta kepatuhan konsumsi. Uji T berpasangan digunakan untuk data terdistribusi normal dan uji wilcoxon untuk data terdistribusi tidak normal. Uji korelasi Pearson digunakan untuk data parametrik dan uji spearman untuk data nonparametrik.

Hasil Penelitian : Pemberian makanan tambahan secara signifikan meningkatkan asupan energi, protein, lemak, dan karbohidrat. Terdapat peningkatan pada berat badan (BW) ($\Delta=1,9$ kg; $p=0,000$), tinggi badan (TB) ($\Delta=0,5$ cm; $p=0,00$), skor Z BW/TB ($\Delta=0,06$; $p=0,00$), dan BW/U ($\Delta=0,17$; $p=0,00$). Terdapat hubungan yang signifikan antara pemberian makanan tambahan berprotein tinggi dan peningkatan nilai WAZ dan WHZ ($p<0,05$). Tidak terdapat hubungan yang signifikan pada skor HAZ ($p>0,05$). Tidak terdapat hubungan antara tingkat kepatuhan dalam konsumsi makanan tambahan dan insidensi infeksi terhadap perubahan status gizi.

Kesimpulan : Pemberian makanan tambahan secara signifikan meningkatkan WAZ dan WHZ dalam 90 hari. Pemberian makanan tambahan dengan nilai rasio protein-energi yang tinggi meningkatkan asupan gizi anak-anak *stunting* berusia 6-59 bulan di Puskesmas Bandarharjo.

Kata kunci: *stunting*, pemberian makanan tambahan (PMT), status gizi, protein energy ratio (PER)

ABSTRACT

The Effects of High Protein Supplementary Feeding on Growth of Stunting Children Aged 6-59 months at Bandaharjo Health Center

Atika Rahmi Hendrini, Rina Pratiwi, Maria Mexitalia Setyawati

Pediatric Division of Kariadi General Hospital, Semarang, Indonesia

Faculty of Medicine Universitas Diponegoro, Kariadi General Hospital, Semarang, Indonesia

Background: Animal protein has an essential role in the growth and development in to influence on Insulin Growth Factor-1 and mTORC activity. The low quality of animal protein affects the quality of amino acids which be a risk factor to happen stunting. The fulfillment of animal protein consumption among toddlers in Indonesia only fulfill <80% of the Protein Adequacy ratio. The prevalence value of stunting in Bandarharjo Health Center is 4.9%. Supplementary feeding with 10-16% protein energy ratio (PER) composition was shown to improve stunting.

Objective:

To determine the effect of high-protein supplementary feeding for stunted children aged 6-59 months at Bandaharjo Health Center in the period 2023.

Methods:

The research design was total sampling pretest-posttest quasi-experimental with 101 subjects of stunted children aged 6-59 months. Subjects were given supplementary food with an energy-protein ratio of 10-18% for 90 days and periodic anthropometric measurements (weight body, height body, WHZ, WAZ, HAZ), food recall, infection incidence, and consumption compliance were taken. Paired T test was used for normally distributed data and Wilcoxon test for non-normally distributed data. Pearson correlation test was used for parametric data and Spearman test for nonparametric data.

Results:

Supplementary feeding significantly increased energy, protein, fat, and carbohydrate intake. There was an increase in BW ($\Delta=1.9$ kg; $p=0.000$), TB ($\Delta=0.5$ cm; $p=0.00$), Z-score of BW/TB ($\Delta=0.06$; $p=0.00$) and BW/U ($\Delta=0.17$; $p=0.00$). There was a significant relationship between the provision of high protein supplementary food and the increase in WAZ and WHZ values ($p<0.05$). There was no significance in HAZ score ($p>0.05$). There is no relationship between the level of compliance with supplementary food consumption and the incidence of infection on changes in nutritional status.

Conclusion :

Supplementary feeding significantly improved WAZ and WHZ scores within 90 days. Supplementary feeding with a high protein energy ratio value improves the nutritional intake of stunted children aged 6-59 months at Bandarharjo Health Center.

Keywords: stunting, supplementary feeding, anthropometry, protein energy ratio

