

Pengaruh Pemberian Susu Tempe Terfermentasi Sinbiotik (*Lactobacillus plantarum* Dad 13 – Fruktooligosakarida) yang difortifikasi FeSO₄ terhadap Status Gizi Remaja Putri Anemia di Wates

Risnhukathulistiwi Maghribi¹⁾, Istiti Kandarina²⁾, Siti Helmyati³⁾

INTISARI

Latar belakang : Zat besi sangat dibutuhkan oleh tubuh. Kekurangan zat besi dapat menyebabkan anemia dan gangguan pertumbuhan. Kebutuhan zat besi meningkat di usia remaja seiring dengan kebutuhan untuk proses pertumbuhan. Fortifikasi dengan *vehicle* berupa susu fermentasi dan adanya tambahan pangan lokal berupa tempe diharapkan efektif dalam memperbaiki status gizi pada masa remaja.

Tujuan : Untuk mengetahui pengaruh susu tempe terfermentasi sinbiotik (*Lactobacillus plantarum* Dad 13 dan FOS) yang difortifikasi FeSO₄ terhadap status gizi remaja putri anemia.

Metode : Penelitian eksperimental dengan rancangan *Randomised Controlled Trial* dilakukan pada 62 remaja putri SMP di Wates yang mengalami anemia. Mereka dibagi secara random menjadi 2 kelompok (kelompok intervensi dan kontrol). Kelompok intervensi mengonsumsi susu tempe fermentasi sinbiotik (*L.plantarum* Dad 13 dan fruktooligosakarida) dengan fortifikasi FeSO₄ sebanyak 100 ml dan kelompok kontrol mengonsumsi susu tempe fermentasi sinbiotik (*L.plantarum* Dad 13 dan fruktooligosakarida) sebanyak 100 ml selama 13 minggu. Pengukuran tinggi badan dan berat badan dan perhitungan z-score tinggi badan menurut umur dan z-score IMT menurut umur dilakukan pada awal dan akhir penelitian.

Hasil : Karakteristik kedua kelompok pada awal penelitian sama. Berat badan, tinggi badan dan z-score IMT menurut umur pada kelompok intervensi mengalami kenaikan secara signifikan ($p < 0,05$) tetapi tidak ada perbedaan bermakna dengan kelompok kontrol. Z-score tinggi badan menurut umur kelompok intervensi tidak mengalami kenaikan signifikan ($p > 0,05$).

Kesimpulan : Susu tempe terfermentasi sinbiotik dengan fortifikasi FeSO₄ dapat digunakan untuk menaikkan status gizi berdasarkan IMT menurut umur, namun tidak ada pengaruh produk ini terhadap tinggi badan menurut umur.

Kata kunci : susu fermentasi, tempe, sinbiotik, *L.plantarum* Dad 13, fruktooligosakarida, fortifikasi zat besi, anemia, status gizi

¹⁾Mahasiswa Program Pascasarjana Ilmu Kesehatan Masyarakat UGM, email : kathulistiwiwimaghribi@gmail.com

²⁾Program Studi Ilmu Kesehatan Masyarakat, Fakultas Kedokteran, UGM

²⁾Program Studi Gizi Kesehatan, Fakultas Kedokteran, UGM

Effects of Fermented Tempeh Milk by Synbiotic (*Lactobacillus plantarum* Dad 13 and Fructooligosaccharida) with Ferrous Sulfate Fortified on Anemic Female Adolescent's Nutritional Status in Wates

Risnhukathulistiwi Maghribi¹⁾, Istiti Kandarina²⁾, Siti Helmyati³⁾

ABSTRACT

Background : Iron was needed for human body. Iron deficiency could cause anemia and impaired growth. Increasing iron occurs in adolescent which was needed to achieve growth. Iron fortified with fermented milk as *vehicle* and locally food additive (tempeh) was expected increasing nutritional status in adolescent effectively.

Objective : To identify effects of fermented tempeh milk by synbiotic (*Lactobacillus plantarum* Dad 13 and fructooligosaccharida) with ferrous sulfate on nutritional status of anemic female adolescent.

Method : A randomized controlled trial was conducted on 62 anemic female adolescent in Junior High School, Wates district. They were randomly allocated to two groups (intervention and control group). Intervention group was consumed 100 ml fermented tempeh milk by synbiotic (*Lactobacillus plantarum* Dad 13 and fructooligosaccharida) with ferrous sulfate fortified and control group was consumed 100 ml fermented tempeh milk by synbiotic (*Lactobacillus plantarum* Dad 13 and fructooligosaccharida) for 13 weeks. Height, weight measurements, height for age z-score and BMI for age z-score calculation were recorded at baseline and the end of study.

Results : Both groups were similar at baseline. Weight, height, and BMI for age z-score of group was given fermented tempeh milk with iron fortified are increased significantly ($p < 0,05$) but there is no significant different with control group. Height for age z-score of intervention group was not increased at the end study ($p > 0,05$).

Conclusions : Fermented tempeh milk by synbiotic (*Lactobacillus plantarum* Dad 13 and fructooligosaccharida) with ferrous sulfate fortified increased nutritional status according to BMI for age z-score, but no effect of this product to height for age z-score.

Keywords : fermented milk, tempeh, synbiotic, *L.plantarum* Dad 13, fructooligosaccharida, iron fortified, anemia, nutritional status

¹⁾School of Public Health, Graduate Programme of Medical Faculty UGM, email : kathulistiwimaghribi@gmail.com

²⁾Department of Public Health, Medical Faculty UGM

³⁾Department of Health and Nutrition, Medical Faculty UGM