

INTISARI

Latar belakang: Defisiensi zat gizi mikro banyak terjadi pada balita dan menyebabkan *stunting*. Fortifikasi zat besi dan zink pada susu diketahui *cost-effective* dan berkelanjutan guna menangani masalah *stunting*. Namun, pemberian zat besi dapat meningkatkan bakteri patogen saluran cerna. Penambahan sinbiotik pada susu dapat menjadi solusi, serta berdampak positif pada pertumbuhan. Penelitian ini bertujuan mengetahui pengaruh pemberian susu sinbiotik (*Lactobacillus plantarum* Dad13 dan fruktooligosakarida) dengan fortifikasi zat besi dan zink terhadap pertumbuhan balita *stunting*.

Metode: Penelitian *double-blind randomized controlled trial* dilakukan dengan subjek balita *stunting* usia 2-5 tahun di Kecamatan Seyegan, Sleman. Sebanyak 94 subjek dirandomisasi ke dalam kelompok intervensi diberi susu sinbiotik (*Lactobacillus plantarum* Dad13 dan FOS) yang difortifikasi dengan ferro sulfat dan zink asetat atau kelompok kontrol diberi susu sinbiotik (*Lactobacillus plantarum* Dad13 dan FOS) tanpa fortifikasi. Pemberian intervensi sebanyak 100 mL susu/hari dilakukan selama 3 bulan. Pertumbuhan balita diukur sebelum dan sesudah pemberian intervensi.

Hasil: Analisis dilakukan pada 81 subjek pada dua kelompok, yaitu balita *stunting* yang diberi susu sinbiotik dengan fortifikasi zat besi dan zink (n=38) dan balita *stunting* yang diberi susu sinbiotik tanpa fortifikasi (n=43). Perbedaan rata-rata pertumbuhan antara kedua kelompok yaitu perubahan tinggi badan 0,08 (95% CI: -0,72-0,92, $p=0,363$) cm dan *z-score* TB/U 0,03 (95% CI: -0,14-0,20, $p=0,384$). Tidak terdapat perbedaan pertumbuhan yang signifikan antara kedua kelompok.

Kesimpulan: Penambahan zat besi dan zink pada susu sinbiotik tidak berpengaruh secara signifikan terhadap pertumbuhan balita *stunting*.

Kata kunci: balita *stunting*, fortifikasi zat besi dan zink, pertumbuhan, susu sinbiotik

ABSTRACT

Background: Micronutrient deficiencies are common problem among preschool children in developing countries and often lead to growth faltering. Iron and zinc fortification in milk containing synbiotic could be a cost-effective and sustainable strategy to overcome stunting. This study evaluated the effect of iron and zinc fortification in synbiotic milk (*Lactobacillus plantarum* Dad13 and fructooligosacharides) on growth of preschool children with stunting.

Methods: A double-blind, randomized controlled trial was performed to stunting preschool children aged 2-5 years in Seyegan, Sleman. Children were randomly allocated to receive either synbiotic milk (*Lactobacillus plantarum* Dad13 and FOS) with addition of ferrous sulfate and zinc acetate or synbiotic milk (*Lactobacillus plantarum* Dad13 and FOS) without addition of micronutrient for three months (100 mL per day) (n=94). Growth of children was assessed before and after the intervention.

Results: 81 participants were analysed. Comparing fortified synbiotic milk group (n=38) to non-fortified milk group (n=43), the mean differences of growth between groups were 0.08 (95% CI: -0.72-0.92, $p=0.363$) cm for height change and 0.03 (95% CI: -0.14-0.20, $p=0.384$) for HAZ change. There was no significant difference of growth between groups.

Conclusion: Provision of additional iron and zinc fortification in synbiotic milk has no effect on growth of stunting preschool children.

Keywords: growth, iron and zinc fortification, preschool children, stunting, synbiotic milk