

## ABSTRACT

**Background:** Stunting is associated to the developmental delays of gross motor and fine motor skills. Previous studied state that micronutrient supplementation has a positive effect on both motor skills development in children aged under 24 months.

**Objective:** The aim of this study was to analysis the effect of micronutrient sprinkle on motor development among stunted children aged 24 to 48 months.

**Methods:** A quasi-controlled experimental group study with a total of 63 stunting age 24-48 months are divided into treatment group (31 children) and controls (32 children). Treatment group received micronutrient sprinkle supplementation once in two days for two months. Fine and gross motor development was measured by DDST II before and after intervention.

**Results:** There was no difference in age, sex, energy intake, protein, zinc, folic acid and developmental delay percentage before treatment. The percentage of fine motor delays before treatment was 48.4% in the treatment group and 53.1% in the control group, while the percent of gross motor delay was 32.3% in the treatment group 34.4% in the control group. After intervention, the percentage of fine motor developmental delays significant decreases 25.8%, in the treatment group and 34.4% in the control group, while the percentage of gross motor delay in the control group significant decreased to 12.5%, but not significant decreased to 16,1% in the treatment group. Confounding variables in this study were include energy adequacy level, protein adequacy level, zinc, iron and folic acid. There was no differences percentage of developmental delays on fine motor ( $p= 0,514$ ) and gross motor ( $p= 0,571$ ) after the intervention and after controlling with confounding variables.

**Conclusion:** Micronutrient sprinkle supplementation for two months did not influence the development of fine motor skills gross motor skills on stunting preschooler children age 24 to 48 months

**Keyword:** fine motor skills, gross motor skills, stunting, preschool children, sprinkle micronutrient.

## ABSTRAK

**Latar belakang:** Keadaan stunting berhubungan dengan keterlambatan perkembangan motorik kasar dan motorik halus. Studi sebelumnya menunjukkan suplementasi mikronutrien berefek positif pada kedua perkembangan motorik anak usia dibawah 24 bulan.

**Tujuan:** Menganalisis pengaruh pemberian sprinkle mikronutrien terhadap perkembangan motorik anak pendek usia 24 – 48 bulan.

**Metode:** Penelitian kuasi eksperimen dengan subjek sebanyak 63 anak usia 24 – 48 bulan yang pendek. Sebanyak 31 anak sebagai kelompok perlakuan dan 32 anak kelompok kontrol. Kelompok perlakuan mendapat sprinkle mikronutrien 2 hari sekali selama 2 bulan. Perkembangan motorik kasar dan morotik halus diukur dengan kuesioner deteksi tubuh kembang Denver Tes II sebelum dan sesudah intervensi.

**Hasil:** Tidak ada perbedaan usia, jenis kelamin, asupan energi, protein, seng, asam folat dan perkembangan sebelum perlakuan. Persentase keterlambatan motorik halus sebelum perlakuan adalah 48,4% pada kelompok perlakuan dan 53,1% pada kelompok kontrol, sedangkan persen keterlambatan motorik kasar adalah 32,3% pada kelompok perlakuan 34,4% pada kelompok kontrol. Setelah intervensi, persentase keterlambatan perkembangan motorik halus signifikan menurun 25,8%, pada kelompok perlakuan dan 34,4% pada kelompok kontrol, sedangkan persentase keterlambatan perkembangan motorik kasar pada kelompok kontrol signifikan menurun menjadi 12,5%, namun tidak signifikan menurun menjadi 16,1% pada kelompok perlakuan. Variabel diduga sebagai perancu dalam penelitian ini adalah meliputi tingkat kecukupan energi, protein, seng, besi dan asam folat. Tidak ada perbedaan persentase keterlambatan perkembangan motorik halus ( $p = 0.514$ ) dan motorik kasar ( $p = 0.571$ ) setelah intervensi dan setelah mengendalikan dengan variabel pengganggu.

**Simpulan:** suplementasi sprinkle mikronutrien selama dua bulan tidak mempengaruhi perkembangan motorik halus dan motorik kasar pada anak stunting 24 sampai 48 bulan

**Kata kunci:** perkembangan motorik halus, motorik kasar, stunting, anak 24 – 48 bulan, sprinkle mikronutrien.