

## ABSTRACT

Stunting is the most nutrition problem happened in the world and Indonesia. Deficiency zinc can cause linear growth disorders. Disease infection when happencontinue continuously could inhibits the growth process physical cause stunting. the purpose of this study was to analyze the differences between zinc hairs and events disease infection (ARI and diarrhea) stunting and non-stunting aged 24-59 months in UPTD Puskesmas Wilangan.

Observational analytic study design with case control design. Population was all children aged 24-59 months (306 people). The sample size is determined by hypothesis of two proportions. Samples was 23 stunting and 23 non-stunting. used simple random sampling technique. Height data used microtoice, zinc hairs content with Atomic Absorption Spectrophotometry, food intake with 3x24 hour food recall and questionnaire interviews. Data were analyzed with chi-square test, independent t-test and logistic regression.

There were differences in zinc hair levels between stunting and non-stunting toddlers ( $p=0.039$ ), there was no significant difference in story of ARI and diarrhea between stunting and non-stunting (ARI  $p=0.063$ ; diarrhea  $p=0.608$ ). Nutritional intake of stunting is lower than non-stunting. Risk factor for stunting are zinc hair levels 1,035 times, energy intake 1,005 times, protein intake 1,253 times, zinc intake 19,891 times, iron intake 1,163 and ARI history 3,800 times higher than non-stunting toddlers.

Hair zinc levels, energy, protein, zinc and iron intake for stunting toddlers is lower than non-stunting. Low zinc levels, energi, protein, zinc and iron intake deficiency and history of ARI risk factor for stunting in UPTD Puskesmas Wilangan Nganjuk Regency. Need to improve nutrition education to the public regarding the importance of food intake in terms of quantity and quality as well as prevention of infectious diseases which can be a direct cause of *stunting*.

Keywords: Zinc Hair, Infectious Disease, Stunting, Toddler

**ABSTRAK**

*Stunting* merupakan salah satu permasalahan gizi terbanyak yang terjadi di dunia termasuk Indonesia. Defisiensi *zinc* menyebabkan gangguan pertumbuhan secara linear dan menurunkan nafsu makan. Penyakit infeksi bila terjadi terus menerus dapat menghambat proses pertumbuhan fisik sehingga menyebabkan *stunting*. Tujuan penelitian ini menganalisis perbedaan antara *zinc* rambut dan kejadian penyakit infeksi (ISPA dan diare) balita *stunting* dan *non-stunting* usia 24-59 bulan di wilayah kerja UPTD Puskesmas Wilangan.

Rancangan penelitian observasional analitik dengan *case control design*. Populasi penelitian yaitu semua balita usia 24-59 bulan (306 orang). Besar sampel ditentukan dengan uji hipotesis dua proporsi. Jumlah sampel 23 *stunting* dan 23 *non-stunting*. Pengambilan sampel acak menggunakan teknik *simple random sampling*. Data tinggi badan menggunakan *mikrotoice*, kadar *zinc* rambut dengan metode Spektrofotometri Serapan Atom, asupan makan dengan *food recall* 3x24 jam dan wawancara kuesioner. Data dianalisis dengan uji *chi square*, *t-test independen* dan regresi logistik.

Ada perbedaan kadar *zinc* rambut antara balita *stunting* dan *non-stunting* ( $p=0,039$ ), tidak terdapat perbedaan riwayat ISPA dan diare yang signifikan antara balita *stunting* dan *non-stunting* (ISPA  $p=0,063$ ; diare  $p=0,608$ ). Asupan gizi balita *stunting* lebih rendah dibandingkan balita *non-stunting*. Faktor risiko terjadinya *stunting* yaitu kadar *zinc* rambut yang kurang 1,035 kali, asupan energi kurang 1,005 kali, asupan protein kurang 1,253 kali, asupan *zinc* kurang 19,891 kali, asupan zat besi kurang 1,163 dan riwayat ISPA 3,800 kali lebih tinggi dibandingkan balita *non-stunting*.

Kadar *zinc* rambut, asupan energi, protein, *zinc* dan zat besi balita *stunting* lebih rendah. Kadar *zinc* rambut yang kurang, asupan energi, protein, *zinc*, zat besi yang kurang dan riwayat kejadian ISPA merupakan faktor resiko terjadinya *stunting* di wilayah UPTD Puskesmas Wilangan Kabupaten Nganjuk. Perlu meningkatkan edukasi gizi kepada masyarakat terkait pentingnya asupan makan dari segi kuantitas dan kualitas serta pencegahan penyakit infeksi yang dapat menjadi penyebab langsung *stunting* pada balita

Kata Kunci : *Zinc* Rambut, Penyakit Infeksi, *Stunting*, Balita