

# Hubungan antara infeksi parasit dengan prevalensi anemia pada anak-anak Sekolah Dasar di Kecamatan Nangapanda Ende Nusa Tenggara Timur = The relationship between prevalence and status of anemia with malaria or helminths infection among elementary school children in Nangapanda Ende East Nusa Tenggara

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## Abstrak

Latar Belakang: Indonesia bagian Timur memiliki beban ganda dalam infeksi parasit di negara tropis yaitu cacing usus dan malaria. Infeksi parasit tersebut secara tunggal maupun bersama-sama dapat menyebabkan kejadian anemia. Di Indonesia, kejadian anemia berhubungan dengan asupan nutrisi zat besi yang kurang dan infeksi parasit. Belum diketahui bagaimana hubungan antara infeksi parasit dan anemia pada populasi anak sekolah di Kecamatan Nangapanda yang merupakan daerah ko-endemis malaria dan cacing usus.

Tujuan: Mengetahui hubungan antara infeksi parasit dengan prevalensi anemia pada anak-anak sekolah dasar di Nangapanda Provinsi Nusa Tenggara Timur.

Metode: Penelitian ini menggunakan data sekunder yang diperoleh studi potong lintang dari tim peneliti Departemen Parasitologi FKUI. Populasi terjangkau adalah populasi anak sekolah di Ende Provinsi Nusa Tenggara Timur berusia 6-10 tahun. Teknik pengambilan sampel menggunakan total population sampling. Penentuan status gizi menggunakan aplikasi WHO AnthroPlus untuk anak usia 5-18 tahun. Pemeriksaan infeksi cacing usus pada tinja menggunakan pemeriksaan Katokatz. Pemeriksaan malaria menggunakan metode polymerase chain reaction (PCR). Data diuji menggunakan uji chisquare dengan alternatifnya uji Fisher. Hubungan bermakna bila nilai  $p < 0,05$ .

Hasil: Didapatkan 240 subyek penelitian dengan rerata usia 8,21 tahun, rerata hemoglobin 11,92g/dL dengan proporsi anemia 53,3%. Proporsi infeksi cacing usus sebesar 24,2% dan infeksi malaria sebesar 6,7%. Hasil analisis didapatkan bermakna pada variabel jenis kelamin ( $p < 0,001$ ) sedangkan variabel infeksi cacing usus dan malaria didapatkan hasil tidak bermakna terhadap kadar hemoglobin dengan masing-masing nilai  $p = 0,747$  dan  $p = 0,782$ .

Kesimpulan: Tidak terdapat hubungan antara infeksi cacing usus dan malaria dengan tingkat keparahan anemia pada anak-anak sekolah dasar yang tinggal di daerah Nangapanda, Nusa Tenggara Timur.

.....Background: East Region of Indonesia has double burden for parasitic infection endemic in tropical country such as soil transmitted helminths and malaria. These parasitic infections alone or together can cause anemia. In Indonesia, anemia was associated with low nutrition intake of iron and parasitic infection. However, this association was not known in the population of school children in Nangapanda District, Nusa Tenggara Timur Province which was ko-endemic between malaria and soil transmitted helminths.

Aim: To find the association between parasitic infection and prevalence of anemia in children who attends primary school in Nangapanda, Nusa Tenggara Timur.

Method: This research used secondary data from cross-sectional study conducted by FKUI Parasitology Team. Target population was children 6-10 year who attended primary school in Ende, Nusa Tenggara Timur. The sampling method was using total population sampling. The nutritional status was determined using the application of WHO AnthroPlus for children aged 5-18 years old. Soil-transmitted helminths

infection was being detected by Katokatz method and malaria infection is using PCR method. Data was being analyzed with chi-square test and Fisher test as the alternative. Association is significant when p value is  $<0,05$ .

Result: Total sample is 240 subjects with mean age 8,21 years old, mean hemoglobin is 11,92 g/dL and anemic proportion is 53,3%. Soil-transmitted helminths infection proportion is 24,2% and malaria infection is 6,7%. The analytical results is significant for gender ( $p < 0,001$ ) and not significant for Soil-transmitted helminths infection and malaria with  $p = 0,747$  and  $p = 0,782$ , respectively versus hemoglobin concentration.

Conclusion: There is no association between Soil-transmitted helminths infection and malaria with the severity of anemia in children who attends primary school and live in Nangapanda, Nusa Tenggara Timur.