HUBUNGAN KONTRIBUSI ZAT GIZI MAKANAN SEKOLAH, DENGAN KADAR HEMOGLOBIN MURID SD ISLAM INTEGRAL LUQMAN AL-HAKIM PURWODADI

disusun oleh :

SUGIYANTO

G2C206019

PROGRAM STUDI ILMU GIZI FAKULTAS KEDOKTERAN
UNIVERSITAS DIPONEGORO
SEMARANG
2008

ASSOCIATION OF NUTRITION CONTRIBUTION SCHOOL FEEDING WITH THE CONCENTRATION OF HEMOGLOBIN ELEMENTARY SCHOOL ISLAM INTEGRAL LUQMAN AL-HAKIM PURWODADI

Sugiyanto[*] Enik Sulistiyowati[**]

ABSTRACT

Back Ground: School child are more susceptible of iron deficiency anemia because inadequate of iron and lower the bioavailability of food. Menu pattern which food source like flour, fruits and vegetables are barrier iron absorption. Barrier factors like tannin, phythate, oksalat, phosphate and fiber, if not consume balance with enhancing iron absorption like heme, vitamin C and protein, iron deficiency anemia become the threat for school child.

Object: To explain association contribution of protein intake, heme iron intake, non heme iron intake, contribution iron total intake, contribution folic intake, contribution vitamin C intake, phythate intake, tannin intake and oksalat intake from food in school, with the concentration of hemoglobin elementary school.

Method: A cross sectional was conducted on 60 elementary school, taken by simple random sampling from 72 eligible elementary school. Data of intake protein, total iron, heme iron, non heme iron, folic acid, vitamin C, phythate, tannin and oksalat using by food weighing during five days measurement. Hemoglobin data measured by cyanmethemoglobin. Analysis data use by regression linear with α 5%.

Result: There are 66,67%   sample is included in anemia category. Contribution of factor enhancing of iron absorption consisted of the protein, heme iron, non heme iron, total iron, folic acid and vitamin C with the average value $32,96 \pm 6,00$; $6,88 \pm 1,35$; $44,25 \pm 2,97$; $36,78 \pm 2,33$; $22,93 \pm 3,85$; $34,48 \pm 7,39$. While intake inhibitor of iron absorption consisted of phythate, tannin and oksalat with the average $351,97 \pm 46,45$; $5,43 \pm 0,61$ and $38,20 \pm 6,73$. Contributions of protein intake, contribution folic acid intake, contribution vitamin C intake, tannin intake and phythate intake have the significance less than 0,005. Contribution of protein intake, contribution folic acid intake, contribution vitamin C intake, tannin intake and phythate intake have relation effect significant to concentration of hemoglobin elementary school.

Conclusion: Contribution of protein intake, contribution folic acid intake, contribution vitamin C intake, tannin intake and phythate intake have relation effect significant to concentration of hemoglobin elementary school. Explainable variation from hemoglobin concentration elementary school by contribution of protein intake, contribution folic acid intake, contribution vitamin C intake, tannin intake and phythate intake equal to 81,4%.

Keyword: elementary school, hemoglobin, protein, heme iron, non-heme iron, phytate, tannin, oksalat, vitamin C, folic acid.

[*]   Student of Program in Nutrition Medical Faculty Diponegoro University, Semarang
[**] Lecture of Program in Nutrition Medical Faculty Diponegoro University, Semarang

HUBUNGAN KONTRIBUSI ZAT GIZI MAKANAN SEKOLAH DENGAN KADAR HEMOGLOBIN MURID SD ISLAM INTEGRAL LUQMAN AL-HAKIM PURWODADI

Sugiyanto[*] Enik Sulistiyowati[**]

ABSTRAK

Latar belakang: Anak sekolah merupakan kelompok rawan terhadap anemia gizi besi. Tidak cukupnya besi yang masuk dan rendahnya bioavailabilitas makanan yang mengandung besi merupakan penyebab kondisi ini. Pola menu yang bersumber utama dari tepung-tepungan, sayur dan buah yang mengandung penghambat penyerapan besi seperti tannin, phythate, oksalat, phosphate dan serat bila tidak diimbangi dengan mengkonsumsi zat pemacu penyerapan besi seperti besi heme, vitamin C dan protein, anemia gizi besi menjadi ancaman bagi anak sekolah.

Tujuan: Menjelaskan hubungan kontribusi asupan protein, asupan besi heme, asupan besi non heme, kontribusi asupan total besi, kontribusi asupan asam folat, kontribusi asupan vitamin C, asupan phythate, asupan tannin dan asupan oksalat dari makanan sekolah, dengan kadar hemoglobin murid SD.

Metode: Desain penelitian *cross sectional* dengan jumlah sampel 60 murid dari 72 murid kelas 2 dan 3 yang memenuhi kriteria inklusi. Data asupan protein, total besi, asam folat, vitamin C phythate, tannin dan oksalat diperoleh dengan *food weighing* selama lima hari pengukuran. Data hemoglobin diukur dengan *cyanmethemoglobin*. Data diuji dengan regresi linier dengan α 5%.

Hasil: Sebanyak 66,67% sampel termasuk dalam kategori anemia. Kontribusi pemacu penyerapan zat besi yang terdiri dari protein, besi heme, besi non heme, total besi, asam folat dan vitamin C dengan nilai rerata 32,96 ± 6,00; 6,88 ± 1,35; 44,25 ± 2,97; 36,78 ± 2,33; 22,93 ± 3,85; 34,48 ± 7,39. Sedangkan asupan penghambat penyerapan besi yang terdiri dari phythate, tannin dan oksalat dengan rerata 351,97 ± 46,45; 5,43 ± 0,61 dan 38,20 ± 6,73. Kontribusi asupan protein, kontribusi asupan asam folat, kontribusi asupan vitamin C, asupan tannin dan asupan phythate berhubungan dengan *p value* < 0,05. Kontribusi asupan protein, kontribusi asupan asam folat, kontribusi asupan vitamin C, asupan tannin dan asupan phythate berhubungan secara signifikan dengan kadar hemoglobin murid SD

Kesimpulan: Kontribusi asupan protein, kontribusi asupan asam folat, kontribusi asupan vitamin C, asupan tannin dan asupan phythate berhubungan secara signifikan dengan kadar hemoglobin murid SD Variasi dari kadar hemoglobin murid dapat dijelaskan oleh kontribusi asupan protein, kontribusi asupan asam folat, kontibusi asupan vitamin C, asupan tannin dan asupan phythate sebesar 81,4%.

Kata Kunci: Murid SD, hemoglobin, protein, besi heme, besi non-heme, phytate, tannin, oksalat, vitamin C, asam folat

[*] Mahasiswa Program Studi Ilmu Gizi Fakultas Kedokteran, Universitas Diponegoro Semarang
[**] Pengajar Prgram Studi Ilmu Gizi Fakultas Kedokteran, Universitas Diponegoro Semarang