

**Penyusunan rekomendasi makanan berdasarkan identifikasi
kesenjangan gizi menggunakan program linear pada remaja sekolah di
Kabupaten Malang, Indonesia = Development of food based
recommendation on nutrient gap identified using linear program among
school adolescents in Malang district, Indonesia**

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Abstrak

Remaja sekolah membutuhkan asupan gizi yang cukup untuk mendukung pertumbuhan dan perkembangan kognitif. Penelitian ini bertujuan untuk menyusun rekomendasi makanan berdasarkan kesenjangan gizi yang diidentifikasi menggunakan pemrograman linier (LP) dengan software Optifood. Sebuah studi potong lintang dilakukan dengan metode acak purposif sekolah yang berasal dari program "Gizi untuk Prestasi" by SEAMEO RECFON. Pengulangan diet 24 jam, pengukuran antropometrik, dan kuesioner terstruktur dilakukan di antara 186 siswa (laki-laki = 68, perempuan = 118, berusia 15-18 tahun), serta survei pasar. Remaja sekolah laki-laki memiliki dua masalah gizi absolut, yaitu kalsium dan folat. Sementara itu, remaja perempuan memiliki tiga masalah gizi absolut, kalsium, folat, dan zat besi. Makanan padat nutrisi yang dipilih untuk mengisi kesenjangan adalah susu fortifikasi, nasi putih, telur ayam, hati sapi, dan roti. Kombinasi akhir rekomendasi makanan mingguan untuk remaja sekolah laki-laki adalah 7 porsi telur, termasuk 5 porsi telur ayam, 7 porsi sumber protein nabati, 10 porsi sayuran berdaun hijau tua, 14 porsi nasi, dan 3 porsi susu fortifikasi. Sedangkan untuk remaja sekolah putri adalah 5 porsi buah, 14 porsi sumber protein hewani, termasuk 1 porsi hati sapi, 7 porsi produk sumber protein nabati, termasuk 5 porsi kedelai dan produknya, 7 porsi sayuran berdaun hijau tua, 3 porsi susu fortifikasi, dan 3 porsi roti.

.....School adolescents need an adequate nutrition to support their growth and cognitive development. This study aimed to develop food based recommendation based on nutrient-gap identified using linear programming (LP) with Optifood software. A cross-sectional study was done with purposive sampling of school obtained from "Gizi untuk Prestasi" program by SEAMEO RECFON. A repeated-24 hour dietary recall, anthropometric measurement, and structured questionnaire were conducted among 186 school adolescents (male= 68, female= 118, aged 15-18 years old), also market survey. Male adolescents had two absolute problem nutrients, namely calcium and folate. Whilst, adolescent females had three absolute problem nutrients, calcium, folate, and iron. The final combination of weekly FBR for male school adolescents were 7 serves of any eggs, included 5 serves of chicken egg, 7 serves of any plant protein sources, 10 serves of dark green leafy vegetables, 14 serves of cooked rice, and 3 serves of fortified milk. While for female school adolescents were 5 serves of fruits, 14 serves of animal protein sources, included 1 serves of beef liver, 7 serves of plant protein sources products, included 5 serves of soybean and products, 7 serves of dark green leafy vegetables), 3 serves of fortified milk, 3 serves of bread.