Pengaruh Intervensi Sup Teri (Stolephorus indicus) Instan Fortifikasi Vitamin D terhadap Kadar Kalsidiol Serum Ibu Hamil, Berat Lahir dan Panjang Lahir Bayi

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Abstrak

Defisiensi vitamin D pada ibu hamil di Indonesia masih tinggi yaitu lebih dari 60%, berkaitan dengan berbagai risiko kesehatan ibu dan dampak pada janin seperti gangguan pertumbuhan tulang dan berat lahir rendah. Fortifikasi vitamin D pada produk olahan perikanan diharapkan dapat meningkatkan asupan vitamin D sehingga memperbaiki status vitamin D ibu hamil. Tujuan penelitian adalah mengetahui pengaruh intervensi sup teri (Stolephorus indicus) instan fortifikasi vitamin D terhadap kadar kalsidiol ibu hamil, berat lahir, dan panjang lahir bayi di Kabupaten Tangerang. Penelitian diawali dengan produksi tepung teri, optimasi formula sup teri instan, pengujian mutu kimia dan sensori untuk menentukan formula terbaik. Intervensi dilakukan pada ibu hamil trimester kedua menggunakan desain two groups pre–post test dengan purposive sampling. Kelompok perlakuan diberi sup teri instan fortifikasi vitamin D, kelompok kontrol diberi sup instan tanpa teri dan tanpa vitamin D. Sup dikonsumsi empat kali per minggu selama 5 bulan atau hingga persalinan. Kadar kalsidiol ibu diukur awal dan akhir intervensi. Food Recall (FR) 24 jam dilakukan di awal, pertengahan, dan akhir intervensi. Analisis data menggunakan jumlah subjek dengan tingkat kepatuhan konsumsi produk intervensi >=80% (n=65), terdiri dari kelompok perlakuan (n=30) dan kelompok kontrol (n=35). Kelompok perlakuan memiliki rerata kadar kalsidiol akhir lebih tinggi yaitu 26,51±4,25 ng/mL dibandingkan kelompok kontrol yaitu 23,61±7,56 ng/mL. Setelah dikontrol dengan kalsidiol awal dan kecukupan vitamin D baseline, intervensi berhubungan signifikan dengan peningkatan kalsidiol akhir dengan selisih adjusted mean 5,14 ng/mL (95%CI: 0,023–10,259; p=0,049). Model multivariat berat lahir signifikan dengan R²=0,688, p < 0,001 dengan faktor yang berperan adalah kelompok perlakuan, panjang lahir, kalsidiol awal, pertambahan berat badan ibu selama hamil, dan kecukupan protein baseline. Model multivariat panjang lahir juga signifikan dengan R²=0,505; p < 0,001 dengan faktor yang berhubungan adalah berat lahir. Produk sup teri instan terfortifikasi vitamin D ini berpotensi untuk dikembangkan sebagai salah satu alternatif makanan tambahan untuk ibu hamil berbasis produk hasil laut yang enak, praktis dan mudah disajikan. <hr /> Vitamin D deficiency among pregnant women in Indonesia remains high, affecting more than 60% of pregnant women, and is associated with various maternal health risks and adverse fetal outcomes, including impaired bone growth and low birth weight. Vitamin D fortification in fish-based processed products is expected to improve vitamin D intake and consequently enhance vitamin D status among pregnant women. This study aimed to determine the effect of vitamin D-fortified instant anchovy (Stolephorus indicus) soup intervention on maternal calcidiol levels, birth weight, and infant birth length in Tangerang Regency. The study began with anchovy flour production, optimization of instant anchovy soup formulation, and chemical and sensory quality evaluations to determine the best formula. The intervention was conducted among second-trimester pregnant women using a twogroup pre–post test design with purposive sampling. The treatment group received vitamin D-fortified instant anchovy soup, while the control group received instant soup

without anchovy and without vitamin D fortification. The soup was consumed four times per week for five months or until delivery. Maternal calcidiol levels were measured at baseline and endline. Twenty-four-hour food recall assessments were conducted at baseline, midline, and endline. Data analysis included subjects with ≥80% compliance to the intervention product consumption (n = 65), consisting of the treatment group (n = 30) and the control group (n = 35). The treatment group had a higher mean final calcidiol level of 26.51±4.25 ng/mL compared to the control group of 23.61±7.56 ng/mL. After controlling for initial calcidiol and baseline vitamin D adequacy, the intervention was significantly associated with an increase in final calcidiol with a mean adjusted difference of 5.14 ng/mL (95%CI: 0.023–10.259; p=0.049). The multivariate model for birth weight was significant with R²=0.688, with contributing factors including treatment group, birth length, initial calcidiol, weight gain during pregnancy, and baseline protein adequacy. The multivariate model for birth length was also significant with R²=0.505; Associated factors was birth weight. This vitamin D-fortified instant anchovy soup showed promise as an alternative seafood-based nutritional supplement for pregnant women due to its palatability, convenience, and ease of preparation.