

# Hubungan asupan, pola makan, dan kualitas diet berbasis lokal dengan status seng pada ibu hamil Minangkabau di Sumatera Barat, Indonesia = Relationship of local based dietary intake patterns and quality with zinc status among Minangkabau pregnant women in West Sumatera Indonesia

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## Abstrak

Diet dapat menentukan status seng selama kehamilan. Namun, beberapa penelitian mengenai hubungan antara asupan, pola makan dan kualitas makanan berbasis lokal dengan status seng masih terbatas. Oleh karena itu, penelitian ini bertujuan untuk mengetahui apakah asupan seng, pola makan berbasis lokal PMBL dan kualitas diet berhubungan dengan kadar serum seng pada ibu hamil Minangkabau. Penelitian cross-sectional ini dilakukan dengan melibatkan 360 ibu hamil dengan usia kehamilan antara 16 dan 32 minggu. Semi-quantitative Food Frequency Questionnaire SFFQ digunakan untuk memperoleh data asupan makanan, dan PMBL ditentukan berdasarkan hasil principal component analysis PCA. Penelitian ini mengolah 21 kelompok makanan dengan menggunakan PCA menjadi pola makanan bersumber nabati, pola makanan bersumber ikan, ayam dan jeroan, pola makanan bersumber tepung dan pemanis, pola makanan bersumber daging, pola makanan bersumber ikan masak santan, telur dan kacang-kacangan, pola makanan bersumber seafood/hasil laut dan pola makanan bersumber susu. Kualitas diet dianalisis dengan menggunakan Healthy Eating Index HEI 2010. Kadar serum seng diukur dengan menggunakan metode atomic absorption spectrophotometric. Analisis regresi linier multivariat dilakukan untuk menilai asupan seng, PMBL dan kualitas diet dengan kadar serum seng setelah dikontrol oleh faktor perancu. Rerata kadar serum seng adalah 10.1  $\mu$ mol/L. Asupan seng secara signifikan berhubungan dengan konsentrasi serum seng setelah dikontrol oleh umur, usia kehamilan, asupan energi, asupan serat, lokasi geografis dan pengeluaran rumah tangga adjusted  $\beta = 0,083$ , 95 CI: 0,003, 0.163,  $p < 0.05$ . Pola makanan bersumber tepung dan pemanis berbanding terbalik dengan kadar serum seng setelah dikontrol oleh umur, usia kehamilan dan pengeluaran rumah tangga adjusted  $\beta = -0.179$ , 95 CI: -0,335, -0,023,  $p < 0.05$ ; sedangkan PMBL lainnya tidak berhubungan secara signifikan dengan kadar serum seng. Skor total HEI 2010 tidak berhubungan dengan kadar serum seng pada semua responden, tetapi skor HEI 2010 menunjukkan hasil yang berhubungan di daerah pantai setelah dikontrol oleh umur, usia kehamilan, asupan serat dan asupan serat adjusted  $\beta = 0.186$ , 95 CI: 0.066, 0.306,  $p < 0.05$ . Secara keseluruhan, antara asupan seng, pola makanan lokal Minangkabau dengan rendah tepung dan pemanis secara positif mempengaruhi kadar serum seng selama masa kehamilan. Meskipun kualitas diet yang dinilai menggunakan HEI 2010 tidak berhubungan dengan kadar serum seng, tetapi kualitas diet menunjukkan hubungan dengan serum seng pada ibu hamil yang tinggal di daerah pantai. Kata Kunci : pola makan; kehamilan; kadar serum seng; Minangkabau; Indonesia

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Diet has consequences on zinc status during pregnancy. However, studies focusing on association of dietary intake, pattern and quality in locally produced foods with zinc status are limited. Therefore, this study aimed to investigate whether zinc intake, local based dietary patterns LBDPs and diet quality are associated with

serum zinc concentration among Minangkabau pregnant women. A cross sectional study was conducted involving 360 pregnant women between the 16th and 32nd weeks of gestation. Using dietary data from semi quantitative Food Frequency Questionnaire, LBDPs were identified by principal component analysis PCA . This study extracted 21 food groups into plant sources, fish, chicken and meat organ sources, flour and sweetness source, meats sources, fish with coconut milk, eggs and nuts sources, seafood sources and milk sources patterns by PCA. Dietary quality was analyzed by using the Healthy Eating Index HEI 2010. Serum zinc concentration was measured by using atomic absorption spectrophotometric methods. Multivariate linear regression analysis was performed to assess zinc intake, the LBDPs, and diet quality with serum zinc concentration after adjusted for potential confounders. The mean serum zinc concentration of pregnant women was 10.1 2.1 mol L. Zinc intake significant associated with serum zinc concentration after adjusted for age, gestational age, energy intake, fiber intake, geographic location and household expenditure adjusted 0.083 95 CI 0.003, 0.163 p 0.05 . The flour and sweetness sources pattern was inversely associated with serum zinc concentration after adjusted for age, gestational age and household expenditure adjusted 0.179 95 CI 0.335, 0.023 p 0.05 while the other LBDPs were not significantly associated with serum zinc concentration. The overall HEI 2010 score was not significantly associated with serum zinc concentration in the total subjects, but it was associated in coastal area after adjusted for age, gestational age, fiber and phytate intakes adjusted 0.186, 95 CI 0.066, 0.306, p 0.05 . In conclusion, zinc intake and local based Minangkabau foods with less in flour and sweetness positively influence serum zinc concentration during pregnancy. Although, the dietary quality assessed by the HEI 2010 did not associate with serum zinc concentration, it clearly associated with zinc serum of pregnant women in coastal area. Keywords dietary patterns pregnancy serum zinc Minangkabau Indonesia.