

# Hubungan Kebiasaan Konsumsi Fruktosa terhadap Resistensi Insulin dengan Biomarker TyG Index yang Bermanifestasi Sindrom Metabolik di Posyandu Lansia Monjok = Relationship between Fructose Consumption Habits and Insulin Resistance with TyG Index Biomarker Manifesting Metabolic Syndrome at Monjok Elderly Integrated Healthcare Center

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## Abstrak

Latar belakang: Sindrom metabolik merupakan kumpulan gejala abnormalitas metabolik tubuh yang meliputi hipertensi, obesitas sentral, hiperglikemia, resistensi insulin, dan dislipidemia. Hal ini menurunkan kualitas hidup seseorang dan berdampak meningkatnya biaya pengobatan. Salah satu faktor risikonya adalah kebiasaan konsumsi produk instan tinggi fruktosa. Penelitian ini bertujuan membuktikan hubungan antara kebiasaan konsumsi makanan dan/atau minuman yang mengandung fruktosa dengan terjadinya resistensi insulin yang bermanifestasi sindrom metabolik pada subjek di Posyandu Lansia Monjok Kota Mataram.

Metode: Penelitian ini merupakan studi cross-sectional. Pengambilan sampel ditetapkan secara consecutive sampling. Subjek penelitian sebanyak 48 orang berusia 45-90 tahun dari Posyandu Lansia Monjok. Data diperoleh dari wawancara subjek, Puskesmas Mataram, dan Posyandu Monjok. Asupan fruktosa dikumpulkan dengan metode food recall 24hour dan dinilai dengan software nutrisurvey. Resistensi insulin ditetapkan dengan metode TyG Index. Sindrom metabolik ditetapkan berdasarkan parameter National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III).

Hasil: Hasil penelitian menunjukkan 52.1% subjek di Posyandu Lansia Monjok Kota Mataram mengalami resistensi insulin dan 62.5% sindrom metabolik. Uji Chi-Square menunjukkan terdapat hubungan signifikan antara kebiasaan konsumsi fruktosa dengan terjadinya resistensi insulin ( $p=0.000$ ) dan sindrom metabolik ( $p=0.001$ ).

Kesimpulan: Sebagian subjek di Posyandu Lansia Monjok Kota Mataram memiliki kebiasaan konsumsi tinggi fruktosa sehingga menyebabkan terjadinya resistensi insulin yang bermanifestasi menjadi sindrom metabolik.

.....Introduction: Metabolic syndrome is a collection of symptoms of metabolic abnormalities, including hypertension, central obesity, hyperglycemia, insulin resistance, and dyslipidemia. This matter reduce a person's quality of life and impact financially due to high treatment costs. One of the risk factors that trigger metabolic syndrome is the habit of consuming instant food or beverages that contain high fructose. This study aims to prove the relationship between the habit of consuming food and/or drinks containing fructose and the occurrence of insulin resistance manifesting metabolic syndrome among subjects at Monjok Elderly Integrated Healthcare Center Mataram.

Method: This study was cross-sectional. Sampling was determined using consecutive sampling. Subjects, as many as 48 people, aged 45-90 years form Monjok Elderly Integrated Healthcare Center Mataram. Data were obtained from subject interviews and data from Mataram Public Health Center and Monjok Integrated Healthcare Center. Fructose intake was collected using a 24-hour food recall method and assessed using NutriSurvey software. Insulin resistance was determined by the TyG Index method. Metabolic syndrome

was determined based on the Adult Care Panel of the National Cholesterol Education Program III (NCEP ATP III).

Result: The results showed that 52.1% subjects at Monjok Elderly Integrated Healthcare Center experienced insulin resistance and 62.5% metabolic syndrome. The Chi-Square test showed a significant correlation between fructose consumption habits and the occurrence of insulin resistance ( $p=0.000$ ) and metabolic syndrome ( $p=0.001$ ).

Conclusion: Half of the subjects at Monjok Elderly Integrated Healthcare Center had a high fructose consumption habit that cause to insulin resistance manifesting metabolic syndrome.