

# KORELASI TINGKAT AKTIVITAS FISIK DENGAN KADAR GLUKOSA DARAH *POSTPRANDIAL* PADA PASIEN DIABETES MELITUS TIPE 2 DI RUMAH SAKIT UMUM DAERAH CILACAP

## ABSTRAK

**Latar Belakang:** Diabetes merupakan suatu penyakit kronis yang ditandai dengan ketidakmampuan tubuh untuk melakukan metabolisme karbohidrat, lemak, dan protein sehingga menyebabkan hiperglikemia (peningkatan kadar glukosa darah) yang terjadi karena kurangnya respon terhadap insulin (resistensi insulin) sehingga glukosa tidak dapat masuk ke dalam sel. Permeabilitas membran terhadap glukosa meningkat saat otot berkontraksi karena kontraksi otot memiliki sifat seperti insulin, sehingga pada saat beraktivitas fisik seperti berolahraga resistensi insulin berkurang.

**Tujuan Penelitian:** Mengetahui korelasi tingkat aktivitas fisik dengan kadar glukosa darah *postprandial* pada pasien diabetes melitus tipe 2 di Rumah Sakit Umum Daerah Cilacap.

**Metode Penelitian:** Observasi analitik *cross sectional*. Metode pengambilan sampel yang digunakan adalah *non probability* sampling dengan jenis *consecutive* sampling. Subjek penelitian berjumlah 48 sampel. Instrumen yang digunakan adalah kuesioner RISKESDAS untuk menilai tingkat aktivitas fisik, serta glucometer merk *Glucocard* untuk mengukur kadar glukosa darah *postprandial*.

**Hasil:** Analisis univariat karakteristik responden rata-rata umur  $55,35 \pm 5,35$  tahun, hasil rata-rata kadar glukosa darah *postprandial* responden  $232,42 \pm 82,01$  mg/dl dan hasil rata-rata tingkat aktivitas fisik  $221,15 \pm 116,73$  menit. Untuk pengujian hipotesis digunakan uji korelasi *Pearson* didapatkan nilai  $p = 0,001$  dan  $r = -0,454$ , nilai signifikan  $p < 0,05$ . Hal ini berarti  $H_0$  ditolak dan  $H_1$  diterima.

**Kesimpulan:** Terdapat korelasi antara tingkat aktivitas fisik dengan kadar glukosa darah *postprandial* pada pasien diabetes mellitus tipe 2 di Rumah Sakit Umum Daerah Cilacap dengan kekuatan korelasi sedang dan arah hubungan berbanding terbalik sehingga semakin tinggi tingkat aktivitas fisik, semakin rendah kadar glukosa darah *postprandial*.

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**Kata Kunci:** Diabetes Melitus Tipe 2, Kadar Glukosa Darah *Postprandial*, Tingkat Aktivitas Fisik.

**CORRELATION BETWEEN PHYSICAL ACTIVITY LEVELS WITH  
POSTPRANDIAL BLOOD GLUCOSE LEVELS IN DIABETES MELLITUS  
TYPE 2 PATIENTS GENERAL HOSPITAL OF CILACAP**

**ABSTRACT**

**Introduction:** Diabetes mellitus is a chronic disease that has signs body's disability to metabolize carbohydrate, fat, and protein and it causes hyperglycemia (The increasing of blood glucose levels) because there is a lack of response to insulin (insulin resistance) so that glucose can not enter the cells. The increasing of membrane permeability towards glucose due to muscles contraction because muscles contraction have characteristics like insulin, therefore when we do physical activities like sport, the insulin resistance will decrease

**Objective:** To determine correlation of physical activity levels with postprandial blood glucose levels in diabetes mellitus type 2 patients.

**Method:** This experiment used analytic observation with cross sectional. The method that used for took the samples was non probability type consecutive sampling. Total subjects for this research were 48 diabetes mellitus type 2 patients in General Hospital of Cilacap. The instruments that used in this experiment were RISKESDAS questionnaire to measured physical activity levels and glucometer to measured postprandial blood glucose levels.

**Result:** Univariate analyses shows that the characteristic of respondents' age are  $55,35 \pm 5,35$  years old, the average result of respondents' postprandial blood glucose levels are  $232,42 \pm 82,01$ mg/dl and the average results of respondents' physical activity levels are  $221,15 \pm 116,73$ . For the hypothesis testing, this experiment uses Pearson correlation test and obtain  $p= 0.001$  and  $r= -0,454$ , significant result  $p < 0.05$ . Therefore,  $H_0$  rejected and  $H_1$  accepted.

**Conclusion:** There are significant correlation between physical activity levels with postprandial blood glucose levels in diabetes mellitus type 2 patients in general hospital of Cilacap with medium strength correlation and inversely proportional correlation so the higher levels of physical activity the lower of postprandial blood glucose levels will get.

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**Keyword:** diabetes mellitus type 2, physical activity levels, postprandial blood glucose levels.