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SITI IRMA DUROTUNISA
HUBUNGAN KADAR GLUKOSA DARAH, ASUPAN VITAMIN B12 DAN
VITAMIN C DENGAN FUNGSI KOGNITIF PADA PASIEN DIABETES MELITUS
TIPE 2

ABSTRAK

Latar Belakang: Diabetes melitus merupakan salah satu masalah kesehatan utama pada masyarakat yang mempunyai komplikasi jangka panjang dan pendek. Pengaruh DM Tipe 2 dapat berimbas terhadap kualitas SDM. Salah satu dampaknya yaitu terhadap fungsi kognitif. Penurunan fungsi kognitif pada pasien dengan diabetes melitus tipe 2 dipengaruhi oleh banyak faktor, diantaranya adalah karakteristik demografik (usia, jenis kelamin, dan tingkat pendidikan), karakteristik klinik (durasi penyakit diabetes melitus tipe 2, kontrol glikemik, dan pengobatan), perilaku kesehatan yang dapat dimodifikasi termasuk diet dan asupan zat gizi serta faktor-faktor risiko vaskuler lain sebagai penyertanya (hipertensi, dislipidemia, obesitas sentral, merokok, dan penyakit jantung koroner).

Tujuan: Mengetahui hubungan kadar glukosa darah, asupan vitamin B12 dan vitamin C dengan fungsi kognitif pada pasien Diabetes Melitus Tipe 2.

Metode Penelitian: Desain penelitian yang digunakan adalah *cross sectional* dengan sampel sebanyak 98 responden. Data kadar glukosa darah (HbA1c) menggunakan data hasil rekam medis responden yang melakukan pemeriksaan maksimal 3 bulan dari pengambilan data, asupan vitamin B12 dan vitamin C menggunakan formulir SQ-FFQ (*Semi Quantitative Food Frequency Questioner*), dan fungsi kognitif menggunakan kuesioner MoCA-Ina (*Montreal Cognitive Assessment – versi Indonesia*). Analisis data menggunakan Uji Korelasi Spearman.

Hasil Penelitian: Dari hasil uji korelasi Spearman didapat, ada hubungan yang bermakna antara kadar glukosa darah dengan fungsi kognitif ($r=-0,212;p=0,036$), tidak ada hubungan yang bermakna antara asupan vitamin B12 dengan fungsi kognitif ($r=-0,005;p=0,959$), tidak ada hubungan yang bermakna antara asupan vitamin C dengan fungsi kognitif ($r=0,126;p=0,217$).

Kesimpulan: Ada hubungan antara kadar glukosa darah dengan fungsi kognitif, tidak ada hubungan asupan vitamin B12 dan vitamin C dengan fungsi kognitif.

Kata Kunci: Kadar Glukosa Darah, HbA1c, Vitamin B12, Vitamin C, Fungsi Kognitif, DM Tipe 2



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*THE RELATIONSHIP BLOOD GLUCOSE LEVELS, VITAMIN B12 AND VITAMIN C
INTAKE WITH COGNITIVE FUNCTION IN TYPE 2 DIABETES MELLITUS PATIENTS*

ABSTRACT

Background: *Diabetes mellitus is one of the main health problems in society which has long and shortterm complications. The effect of Type 2 DM can impact on the quality of human resources. One of the impacts is on cognitive function. Decreased cognitive function in patients with type 2 diabetes mellitus is influenced by many factors, including demographic characteristics (age, gender, and level of education), clinical characteristics (duration of type 2 diabetes mellitus, glycemic control, and treatment), health behavior modifiable include diet and nutrient intake as well as other accompanying vascular risk factors (hypertension, dyslipidemia, central obesity, smoking and coronary heart disease).*

Objective: *To determine the relationship between blood glucose levels, intake of vitamin B12 and vitamin C with cognitive function in patients with Type 2 Diabetes Mellitus.*

Research Method: *The research design used was cross sectional with a sample of 98 respondents. Data on blood glucose levels (HbA1c) used data from medical records of respondents who carried out examinations for a maximum of 3 months from data collection, vitamin B12 and vitamin C intake using the SQ-FFQ (Semi Quantitative Food Frequency Questioner) form, and cognitive function using the MoCA-Inda questionnaire (Montreal Cognitive Assessment – Indonesian version). Data analysis using Spearman Correlation test.*

Results: *From the results of the Spearman correlation test, it was found that there was a significant relationship between blood glucose levels and cognitive function ($r=-0.212$; $p=0.036$), there was no significant relationship between vitamin B12 intake and cognitive function ($r=-0.005$; $p=0.959$), there was no significant relationship between vitamin C intake and cognitive function ($r=0.126$; $p=0.217$).*

Conclusion: *There is a relationship between blood glucose levels and cognitive function, there is no relationship between vitamin B12 and vitamin C intake and cognitive function.*

Keywords: *Blood Glucose Level, HbA1c, Vitamin B12, Vitamin C, Cognitive Function, Type 2 DM*