

# Korelasi Antara Kendali Glikemik dengan Komponen PhysioCognitive Decline Syndrome pada Penyandang Diabetes Melitus Tipe 2 Dewasa Usia Pertengahan = Correlation between Glycemic Control with Component of PhysioCognitive Decline Syndrome among Patients with Type 2 Diabetes Melitusin Middle-Aged Adult

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## Abstrak

### Latar Belakang

Peningkatan kasus diabetes melitus tipe 2 (DMT2) dengan berbagai komplikasinya memberikan dampak gangguan fungsional seseorang dalam bentuk gangguan kognitif dan kapasitas fisik. Keduanya masih reversibel dan baru diketahui berhubungan sehingga disebut sebagai PhysioCognitive Decline Syndrome (PCDS). Kondisi PCDS baru dipelajari pada lansia dan belum spesifik pada penyandang DMT2.

### Tujuan

Mengetahui korelasi antara kendali glikemik dengan komponen physiocognitive decline syndrome pada penyandang DMT2 dewasa usia pertengahan.

### Metode

Studi potong lintang menggunakan consecutive sampling dari pasien di poliklinik metabolik endokrin dan poli jantung terpadu sejak Januari 202-November 2022. Subjek DMT2 berusia 40-59 tahun diinklusi. Pemeriksaan kekuatan genggam tangan, dan kecepatan berjalan 6-meter diperiksa di ruangan standar. MoCA-Ina dilakukan oleh dokter yang telah dilatih. Data HbA1c subjek yang diperiksa adalah HbA1c 3 bulan terakhir. Analisis korelasi Pearson's atau Spearman's pada SPSS 20.0 dilakukan sesuai sebaran data.

### Hasil

Sebanyak 133 subjek telah dianalisis. Usia median mencapai 53 tahun dengan proporsi laki-laki dan perempuan serta komplikasi pada masing-masing kateori kendali glikemik (batas HbA1c 7,0%) serupa. Subjek didominasi dengan pendidikan SMA dan Sarjana/Diploma. Median durasi terdiagnosisnya diabetes melitus mencapai 7 tahun dengan HbA1c median 7.6%. Nilai MoCA-Ina pada subjek mencapai nilai median 24 dengan kecepatan berjalan rerata 1.02 + 0.23 m/detik dan median kekuatan genggam tangan 24 kg. Terdapat korelasi bermakna hanya pada HbA1c dengan kekuatan genggam tangan ( $r = -0.24$ ,  $R^2 = 0.06$ ,  $p$  value  $<0.01$ ), terutama pada perempuan

### Kesimpulan

Terdapat korelasi bermakna antara kendali glikemik dan kekuatan genggam tangan.

### .....Background

Increasing cases of type 2 diabetes melitus (T2DM) including its complication have caused functional dysfunction consisted of cognitive decline and physical incapacity. Both cognitive decline and physical incapacity had been just known to be reversible and related to each other, so it is termed as PhysioCognitive Decline Syndrome (PCDS). However, it had been just evaluated in geriatric and not specific to T2DM patient.

### Aim

To investigate the correlation between glycaemic correlation and component of physiocognitive decline

syndrome in middle-aged adult with T2DM.

#### Methods

A cross sectional study with consecutive sampling in our metabolic and endocrine clinic and integrated heart centre in January 2021-November 2022 had been conducted. Inclusion criteria was 40-59 years old subjects with T2DM. Measurement of HbA1c in the last 3 month were analysed, while hand grip strength and gait speed were done in standard room. MoCA-Ina had been conducted by trained doctor. Correlation analysis using Pearson's or Spearman's in SPSS 20.0 was done according to data distribution.

#### Result

133 subjects were analysed. Median age was 53 years old with both sex and complication within each glycaemic control category (HbA1c 7,0% cut off) were similar. Subjects were dominated by high school and undergraduate/diploma education level. Most subjects were diagnosed in up to 7 years of T2DM. Median of HbA1c levels in our study was 7.6%. MoCA-Ina score was 24 in median with mean of gait speed was 1.02 + 0.23 m/s. Our median for hand grip was 24 kg. Significant correlation was only found in relationship of HbA1c and hand grip strength ( $r = -0.24$ ,  $R^2 = 0.06$ ,  $p \text{ value} < 0.01$ ).

#### Conclusion

There was significant correlation between glycaemic control and hand grip strength.