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## **Factors Affecting Hand Grip Strength In Chronic Kidney Disease Patients Undergoing Maintenance Hemodialysis In Dr. Sardjito Hospital Yogyakarta-Indonesia**

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**Objectives:** Muscle atrophy and lower muscle mass in maintenance hemodialysis patients (MHD) affecting patients' quality of life. Hand grip strength (HGS) has become one of the methods widely used to measure muscle strength. Determining factors affecting HGS as follows patient characteristics, nutritional status, nutrition intake and type 2 diabetes mellitus as comorbid factor in MHD patients.

**Methods:** Cross-sectional design was conducted among 97 MHD patients in Dr. Sardjito Hospital, Yogyakarta, Indonesia. Participants were elected using purposive sampling. The inclusion criteria were patient >18 years old whose signing informed consent, undergoing MHD 2x/week for at least 3 months, and able to communicate well. We interviewed participant characteristics and food record 3x24-hours to obtain nutrition intake. We assessed HGS using Digital Hand Dynamometer, body mass index (BMI), and mid upper arm circumference (MUAC).

**Results:** There was no significant correlation between gender, type 2 diabetes mellitus, dialysis vintage and BMI with HGS, but the correlations were found between age ( $p < 0,001$ ), MUAC ( $p < 0,0001$ ), energy intake ( $p = 0,005$ ) and protein intake ( $p = 0,01$ ) with HGS using Spearman's rank correlation test.

**Conclusions:** Age, MUAC, energy and protein intake are correlated with HGS. The MUAC affecting HGS in MHD patients could be one of factors to detect protein-energy malnutrition. We suggest for any further research to carried out about improvement protein-energy intake with HGS in MHD patients.