
Neuropsychological Performance of Memory and Processing Speed of Information in Type 2 Diabetes Mellitus

Rendimiento neuropsicológico de la memoria y velocidad de procesamiento de la información en la diabetes mellitus tipo 2

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ABSTRACT

Cognitive Decline (CD) could start in middle age when people report Type 2 Diabetes Mellitus (T2DM) for at least five years and high levels of HbA1c. We proposed to compare the neuropsychological performance of memory and processing speed of information (PSI) in people with T2DM, determine if there are differences between groups' memory and PSI performance, and identify protective factors. This cross-sectional pilot study gathered 40 participants between 41 and 64 years old, divided into 41-48, 49-56, and 57-64, diagnosed with at least five years of T2DM. The sample was evaluated using nine neuropsychological tests in Bayamon following the Covid-19 protocols. Nonparametric statistics were used—IRB protocol # 2103056534. Our study revealed differences between participants and the normative population in memory ($<.001$). There were differences among 49-56 – 57-64 groups ($<.001$) in HbA1c levels (.031), memory (.004), and PSI (.031). High levels of HbA1c correlated with memory ($<.001$) and PSI (.001) decline. Higher education (.006), and continuing education (.012), improved memory performance. Diet improved memory (.029) and PSI (.004) performance. These results were congruent with findings that suggest prolonged high levels of HbA1c in middle age could impact neuropsychological performance. Findings revealed that high HbA1c levels might impair neuropsychological functions such as PSI and visual and verbal memory. People who reported continuing education, higher education, low HbA1c levels, and being on a diet revealed better memory and PSI performance. These findings lay the foundations for developing health programs adapted to populations with T2DM.