

Mental Health And Sociodemographic Predictors Of Patient Empowerment During Autosomal Dominant Alzheimer's Disease Genetic Counseling

Authors and Affiliations

Alejandro Espinosa Rojas, MD¹, Juan Camilo Becerra, MD¹, Alexander Navarro Roldán¹, Claudia Ramos, MD PhD, Esp¹, Claudia Madrigal, Psic. Esp¹, Yudy León, MSc¹, Mauricio Arcos-Burgos, MD, PhD, Esp¹, Pablo M. Bagnati, MD², Daniel A. Jiménez, MD³, Elena Flores⁴, Jorge J. Libre-Guerra, MD, MSc, Esp⁵, David Aguillón, MD PhD¹.

¹Grupo de Neurociencias de Antioquia, Facultad de Medicina, Universidad de Antioquia, Medellín, Colombia. ²Department of Cognitive Neurology, Neuropsychiatry and Neuropsychology, Fleni Neurological Research Institute, Buenos Aires, Argentina. ³Department of Neurological Sciences, University of Chile, Santiago, Chile. ⁴Department of Neurology, Hospital Civil de Guadalajara, Guadalajara, Mexico. ⁵Washington University School of Medicine, St. Louis, MO, USA.

Introduction //

Autosomal dominant Alzheimer's disease (ADAD) represents less than 5% of Alzheimer's disease cases worldwide. Recent advances in Alzheimer's therapeutic have increased the importance of early genetic counseling (GC) for at-risk preclinical individuals. Structured GC protocols aim to promote patient empowerment, which can be assessed using the Genetic Counseling Outcome Scale (GCOS-24), a validated health-related quality-of-life instrument.

Objective //

To evaluate clinical and sociodemographic factors associated with patient empowerment among individuals undergoing genetic counseling for autosomal dominant Alzheimer's disease, using the Genetic Counseling Outcome Scale (GCOS-24).

Methods //

This secondary analysis evaluated baseline data from the PRAGA genetic counseling protocol in Colombia (N = 81) to assess the influence of clinical and sociodemographic factors on empowerment among individuals entering a GC program. Associations with continuous variables were assessed using Pearson correlation coefficients, and multiple linear regression was used to adjust for comorbid anxiety (Hamilton Anxiety Rating Scale) and depression (Montgomery-Åsberg Depression Rating Scale, MADRS). Prespecified sociodemographic variables were analyzed using independent samples Welch's t-tests.

Results //

Mean baseline GCOS-24 score was 135.43 ± 13.32 , with no significant difference between carriers and non-carriers (mean difference = 2.46, $p = 0.373$). Baseline depressive symptoms (MADRS total score) showed a strong negative correlation with empowerment ($r = -0.50$, $p < 0.001$), and anxiety symptoms (Hamilton total score) showed a moderate negative correlation ($r = -0.32$, $p = 0.006$). In multivariable analyses including both affective measures, only depressive symptoms remained independently associated with lower empowerment ($p < 0.001$). Sociodemographic factors including number of children, sex, and direct caregiving status were not significantly associated with empowerment. In contrast, years of education were positively associated with GCOS-24 scores ($r = 0.33$, $p = 0.004$).

Conclusions //

These findings highlight the importance of baseline psychological and educational factors in shaping patient empowerment during the GC process. Individualized GC approaches informed by multidisciplinary assessment may help identify and address vulnerabilities, particularly depressive symptoms. Future studies should evaluate how these baseline factors influence longitudinal empowerment outcomes following GC interventions.

Acknowledgments

We sincerely thank the participants of the PRAGA genetic counseling protocol and their families for their invaluable contribution to this research. We also acknowledge the dedication of the Grupo de Neurociencias de Antioquia clinical, research, and support staff whose efforts made this study possible.

Results //



Figure 1. GCOS-24 score by genetic test result (carriers vs. non-carriers), mean difference = 2.46, $p = 0.373$ (n.s.)

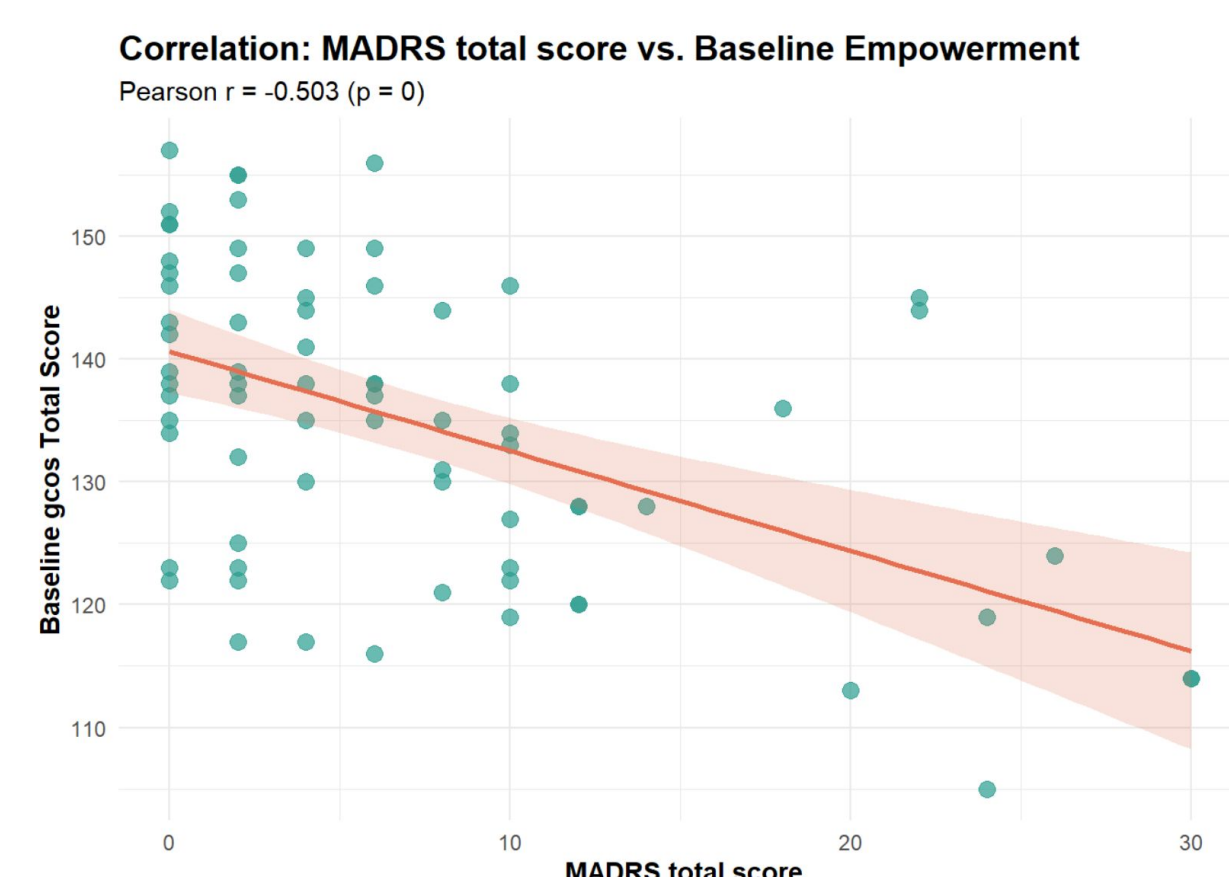


Figure 2. Baseline empowerment (GCOS-24) vs. depressive symptoms (MADRS), $r = -0.50$, $p < 0.001$

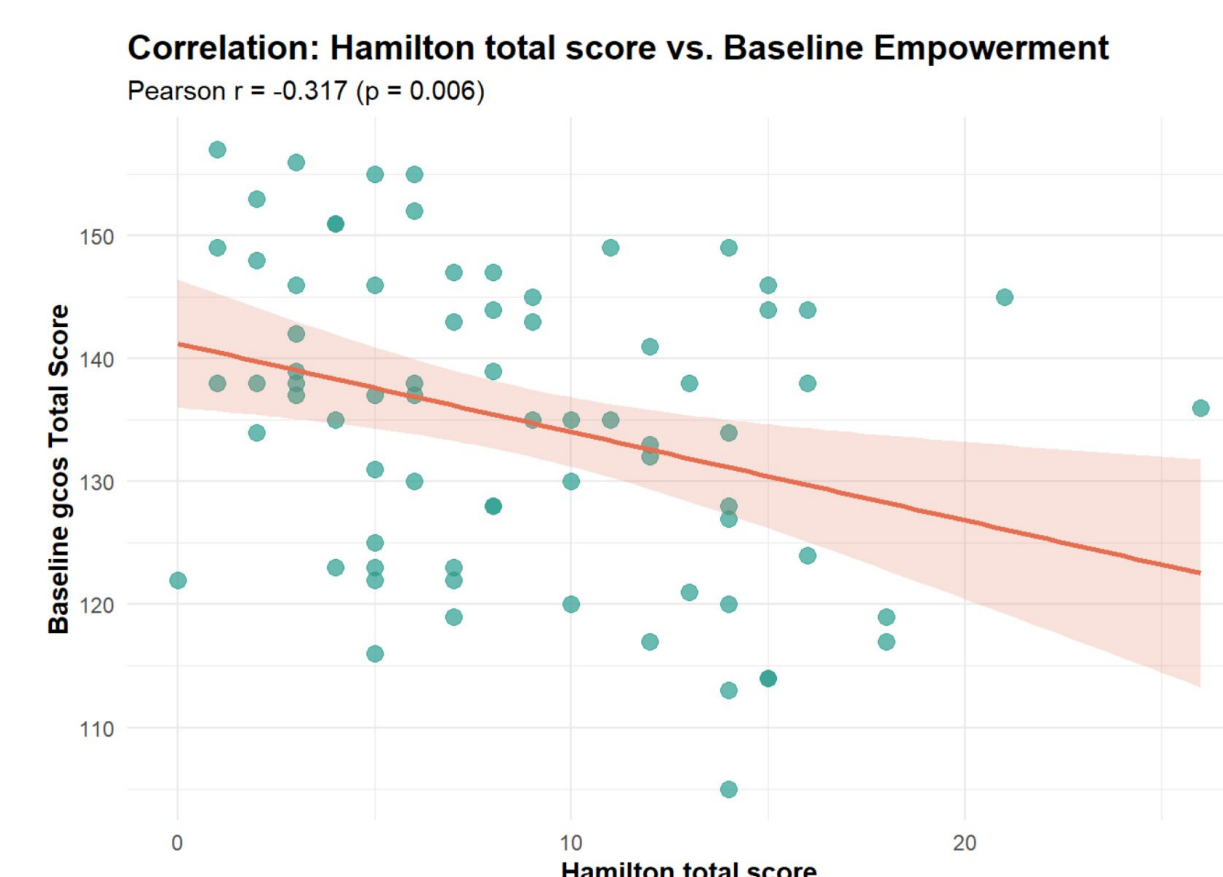


Figure 3. Baseline empowerment (GCOS-24) vs. anxiety symptoms (Hamilton), $r = -0.32$, $p = 0.006$

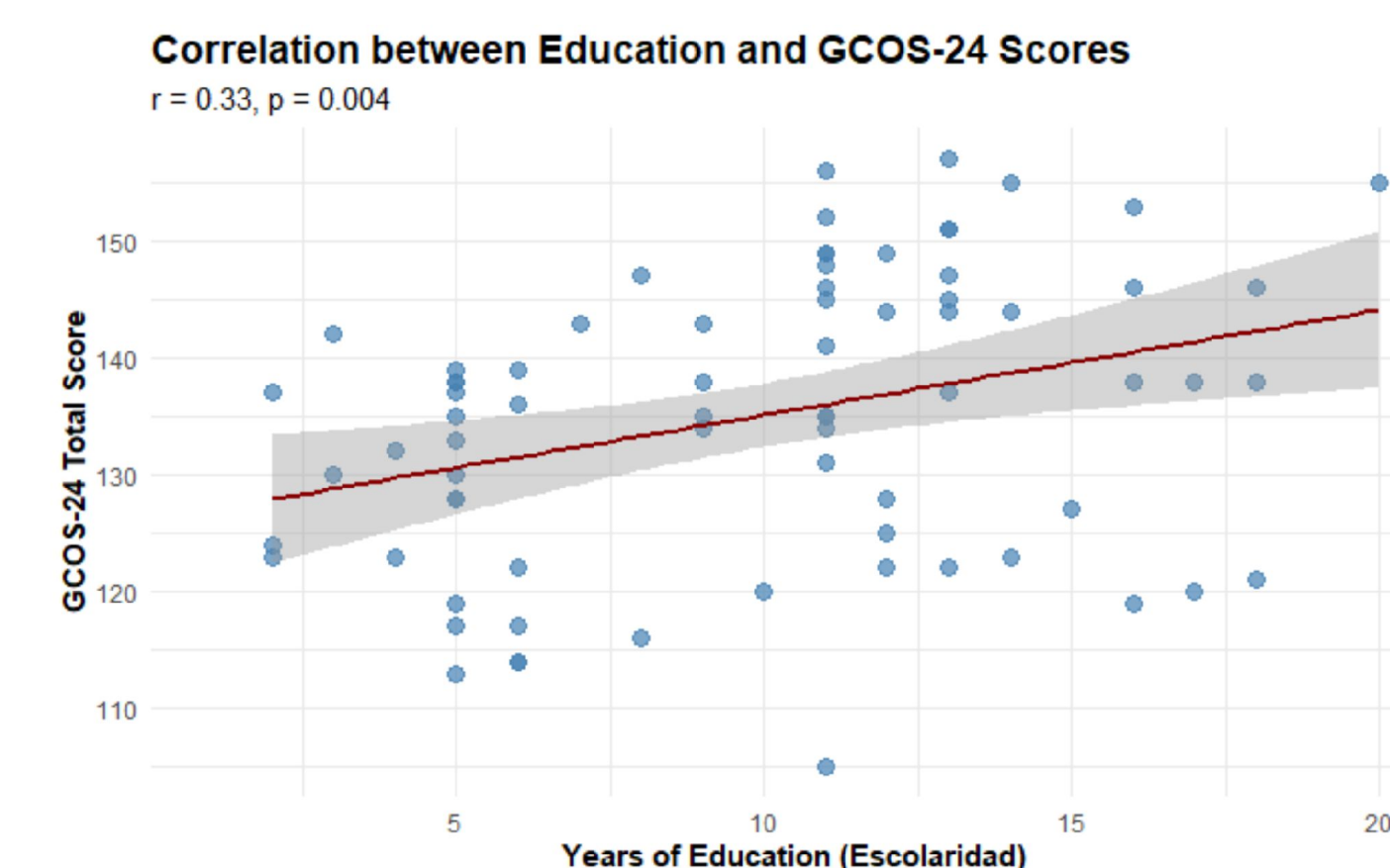


Figure 4. GCOS-24 scores vs. years of education, $r = 0.33$, $p = 0.004$

References //

1. McAllister M, et al. Genetic Counselling Outcome Scale (GCOS-24). Health Expectations, 2011. 2. Montgomery SA, Åsberg M. Montgomery-Åsberg Depression Rating Scale (MADRS). Br J Psychiatry, 1979. 3. Hamilton M. Hamilton Anxiety Rating Scale (HAM-A). Br J Med Psychol, 1959.

Contact //

Name: Alejandro Espinosa Rojas, MD
Email: alejandro.espinosa@gna.org.co

