

Longitudinal Evaluation of Quality of Life in Patients with Deep Brain Stimulation Therapy: Results and Lessons Learned from the Impact of Long Term Interdisciplinary Care in a Single Center

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Abstract

Introduction: This study aims to evaluate the impact of multi-disciplinary interventions on the quality of life of 325 patients implanted with deep brain stimulation (DBS) therapy for various diagnoses in our center at Hospital San Vicente Fundacion Rionegro Colombia. Using the validated EQ-5D measurement scale, various dimensions of quality of life were assessed before and after intervention applied in conjunction with a multidisciplinary team with expertise in neurofunctional field.

Method: Study Type: Longitudinal, retrospective. Patient Sample: 325 patients implanted with DBS therapy at San Vicente Fundación Hospital in Rionegro, Antioquia. Period of time: Since December 5 2012 to July 30 2025 . Measurement Scale: EQ-5D. Measurement Frequency: Before surgery, 6 months after, and annually thereafter.

Discussion: Highly specialized interdisciplinary work enables comprehensive evaluation and treatment of complex neurological conditions, coordinated by a team of experts committed to improving patients' quality of life. Direct collaboration between surgical team and treating specialties was implemented for this sample of 185 patients with different diagnoses, including mainly movement disorders as Parkinson's disease, essential tremor, dystonia, psychiatrist disorders as severe chronic refractory aggression, obsessive compulsive disorder, depression, Tourette syndrome, and others as refractory epilepsy and thalamic pain. The program involves specialists from various clinical fields working together for shared and personalized decision-making, including: Neurology, Pain medicine, Neuropsychiatry, Psychiatry, rehabilitation team with physiotherapy, occupational therapy, speech therapy and others. This neurofunctional care extends beyond the surgical process and works with a psychosocial team supporting patients and families throughout the process, consisting of Neuropsychology, Clinical psychology, Social worker, dietist. We cover in this way the bio psychosocial

fields giving to the patients a holistic management and improving the daily activities and the quality of life scores in comparison with same before surgery.

Conclusions: The observed improvement in patients can be attributed to a combination of therapeutic interventions and multidisciplinary support. The greatest improvement was seen in patients who adhered to multidisciplinary follow-up and DBS therapy. The study demonstrates that multidisciplinary interventions have a positive impact on patients' quality of life. Further evaluation of these approaches and exploration of new intervention strategies are recommended.

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